

INTERIOR HOUSE-PAINTING FROM THE RESTORATION TO THE REGENCY

in two volumes.

VOLUME I

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Submitted for the degree of D.Phil.

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December 1983

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## ACKNOWLEDGEMENTS

My thanks are due in the first instance to Dr. Derek Linstrum, who conceived the study which resulted in the present thesis. In 1974 he had recently visited America and realised the importance of work which had been carried out on the technical examination of house-paint by the Society for the Preservation of New England Antiquities, and in July of that year, returning from the Chateau de Champs to Paris on a bus (in which, by coincidence, I was also a passenger) decided to instigate a research programme into historic paintwork at the Institute of Advanced Architectural Studies, York. Sponsorship was obtained from Berger Paints, to whom together with Dr. Jeremy Taylor, Director of Research at the Institute, whose help and guidance during the three years of my Fellowship (1975-8) was invaluable, I am most grateful. I must also acknowledge with thanks the help given by Dr. Anthony Crawshaw of the Department of Chemistry whilst I was using its facilities to prepare specimens of obsolete pigments.

My research has attracted a remarkable range of support from outside sources, most notably from the Victoria and Albert Museum, the interest of whose Departments of Conservation and Furniture have been crucial. When Keeper of the former, Norman Brommelle kindly arranged for me to use the facilities of the Museum's laboratories, thus introducing me to Miss Jo. Darrah to whom my especial thanks are due for help and guidance in the use of microscopy and associated techniques. Peter Thornton, Keeper of Furniture and Woodwork, has also taken a keen interest in the project; and I am most grateful to him and to others in his Department, notably John Hardy, Simon Jervis, and Clive Wainwright, for sustained help and support. The National Trust too has greatly interested itself in my work, and for a wealth of information and assistance I am particularly grateful to St. John Gore, Martin Drury, Gervase Jackson-Stops, Julian Gibbs, Anthony Mitchell, Christopher Wall, and Merlin Waterson. Other institutions have been similarly kind, including the Department of the Environment in the interest shown by Leo Biek and Maurice Keevil, and the Institute of Geological Sciences in the help given by Frank Dimes, Alan Jobbins, and Miss Patricia Statham, all of which is gratefully acknowledged.

On the historical side, I have benefitted from much enthusiastic support and a wide range of help and information provided by Howard Colvin, John Cornforth, Abbott Lowell Cummings, Mrs. Monica Dance, Sam Dornsife, John Fowler, Dr. Terry Friedman, John Harris, Leslie Harris, Dr. Anthony Quiney, Miss Christine Scull, James and Ann Simpson, Basil Skinner, Miss Dorothy Stroud, and Sir John Summerson. This was matched on technical matters by help and encouragement from Miss Gillian Lewis, Dr. John Mills, David Paull, Westby Percival-Prescott, Miss Joyce Plesters, Professor Stephen Rees-Jones, and R.A. Snowden. British firms have also been generous in providing samples and materials for my work, and in this connection I should particularly like to thank British Oil and Cake Mills Ltd., English China Clays Ltd., H. Haeffner & Co. Ltd., Lamp Metals Ltd., Reckitts (Colours) Ltd., and A.F. Suter & Co., Ltd. Particular thanks are also due to all those owners of historic buildings who permitted me to visit them and carry away samples of paintwork, or who commissioned me to do this. They include: Bradford City Council; His Grace the Duke of Buccleuch; the Dowager Marchioness of Cholmondeley; the Clerical, Medical & General Life Assurance Co. Ltd.; the Department of the Environment; the Trustees of the Dickens House Museum; the Eagle Star Group; the Greater London Council; the National Trust; the Office of Public Works, Dublin; and the Borough of Tamworth. For the generosity and kindness shown by all these and many others I am most grateful.



## DECLARATION

Parts One and Three of this thesis are based on the two interim reports which I produced during the period of research covered by the Berger Research Fellowship (1975-8) which I held at the Institute of Advanced Architectural Studies. Details of these are given in the Introduction below. Two limited aspects of research were discussed in articles I contributed to the Architectural Review for April 1977 (pp. 246-8) and to National Trust Studies 1980 (pp.140-6), entitled respectively 'Ready-Mixed Paint in the Eighteenth Century' and 'The Balcony Room at Dyrham'. Otherwise the only material to have been used before is that contained in certain of the Case Studies and Additional Studies in Part Three, which arose from privately commissioned reports. These are those dealing with the Casino, Marino, Dublin; Bolling Hall, Bradford; 48 Doughty Street, London; Tamworth Castle, Staffordshire; Nostell Priory, Yorkshire; 15 St. James's Square, London; and the House of Lords.

## ABSTRACT

Historic house-painting, a single aspect of interior decoration forming the background to upholstery, decorative painting, pictures, and furnishings, from about 1660 to the 1830s is considered from both technical and aesthetic viewpoints. In Part One the techniques available are analysed and the paint colours and finishes in use, including graining, marbling, and gilding, defined. Study of documentary sources was carried through into the manufacture of obsolete pigments and preparation of an illustrative series of over two hundred colour samples. The limitations and constraints imposed by paint technology are found to have provided an essential background in the aesthetics of interior colour, and to provide the key to interpretation of evidence for the latter. Instability of colour, either by fading or discolouration, together with cost were of primary significance.

Against this background, Part Two describes the use made of paint colour in interiors, relating it where necessary to upholstery. The colours used at different dates are defined, and their architectural organisation within a room established. The way colours were used in a sequence of interiors is examined, and close links identified with room usage and status as it changed and developed. The influence of classical sources, most notably in connection with the work of Robert Adam, is described; and the importance of developing abstract colour theory traced. The way nineteenth-century development of the latter came to obscure eighteenth-century ideas of colour is also observed.

In Part Three, a sequence of case studies based on the correlation of documentary evidence for the treatment of a room with the use of microscopy for the examination of paint samples taken from it, provides a corpus of dated and accurately defined examples; and a series of additional technical studies illustrates specific points made in the first two Parts of the study.

INTRODUCTION

## I N T R O D U C T I O N

'Taste is not hereditary; no one has yet been found to possess this talent by intuition. On the contrary, it is to be acquired by gaining a competent knowledge of the old'.\*

\*1

Background to  
the study

The foundations of this study were laid during the three-year duration of the Berger Research Fellowship which I held at the Institute of Advanced Architectural Studies from May 1975. In the period since, it has been possible to complete many more investigations of individual buildings and rooms than feasible earlier, and a great deal more information has been gathered, both from this and other sources. At the time of my appointment, Edward Croft-Murray had produced his important survey Decorative Painting in England 1537-1837, published as two volumes in 1962 and 1970; but despite the great interest in recent years in interior decoration and the decorative arts in general, house-painting, which provided the essential background to upholstery and works of fine art besides those of the decorative painter, had not received detailed attention, and Croft-Murray's book was virtually confined to artistic and semi-artistic matters. More recently, studies of upholstery have resulted in Peter Thornton's Seventeenth-Century Interior Decoration in England, France and Holland (1978) and Karin Walton's unpublished M.Phil. thesis 'Eighteenth-century Upholstery in England', submitted to the University of Leeds in 1980. The present study is therefore designed to complement these by considering the setting of house-painting against which such decorative elements were placed.

On starting work on house-painting in 1975, such information as had been published on its rôle in interior decoration consisted mainly of odd references scattered throughout a wide range of books, although in 1914 and 1922 Margaret Jourdain had devoted a certain amount of space to the subject in her important volumes Decoration in England from 1660 to 1770 and English Decoration and Furniture of the Later XVIIIth Century (1760-1830). This had been partially supplemented in 1974 by a chapter on 'Colour and the painter's

craft' in English Interior Decoration in the 18th Century by John Fowler and John Cornforth, but this was very much the result of empirical assessment and reflects the experience of a fashionable interior decorator faced with the challenge of interpreting a range of historic interiors. Indeed, the authors stressed that their writing was tentative, and, they suggested, it would 'be rash to try to differentiate between, let us say, a Palladian and a neo-classical way of painting a room... as our knowledge stands at present it is impossible to give precise guidelines'.\*

\*2 Published information on true historical practice was therefore slight, but the related field of historical fine-art technology had received considerable attention. Rosamund Harley's doctoral thesis 'Documentary Sources on the History of Artists' Colours in England, c. 1600-1835', presented to the University of London in 1967 was published in slightly shortened form as Artists' Pigments c. 1600-1835 in 1970 and has proved invaluable since there was considerable overlap between the pigments used by the painter and house-painter, although employment of certain expensive and exotic varieties was restricted to the former, and certain crude grades to the latter, to whom cost was vitally important. Subject to this qualification, Dr. Harley's work largely superseded that of Richard M. Candee ('Materials towards a History of Housepaints', Masters thesis, Cooperstown Graduate Program, State University of New York, 1965) and Theodore Z. Penn ('Decorative and Protective Finishes, 1750-1850', Masters thesis, University of Delaware, 1966), and provided an essential body of accurate information to which house-painters' pigments could be related.

At the National Gallery, London, too, much work had been carried out on the technical examination of historic fine-art paint and the identification of pigments, a subject which has rapidly developed still further since Joyce Plesters published her article 'Cross-sections and Chemical Analysis of Paint Samples' in Studies in Conservation in 1956. The latter has nevertheless proved most valuable in the course of research, and formed the foundation on which, at the instigation of Peter Thornton, Miss Jo. Darrah of

the Victoria and Albert Museum had commenced the series of studies of paint from rooms at Ham House, Surrey; Osterley Park, Middlesex; and Apsley House, London; for the interior arrangement of which the Museum is responsible. Although as translated into redecoration the early results were considered controversial, these experiments were of great importance in showing the way forward, especially since they raised many queries about the accuracy of the traditional procedure of making 'scrapes' in rooms where it was desired to find the original colour scheme. Indeed, although sometimes quite successful when carried out by extremely skilled hands (as in the work at Culzean Castle, Ayrshire, by R.A. Snowden of the Stenhouse Conservation Centre, Scottish Development Department, Edinburgh), 'scrapes' have now been proved, as described in the Introduction of Chapter IX, forming Part Three of this thesis, to be generally extremely unreliable and often highly misleading. In addition, some of those responsible for 'restorations' appear often to have regarded themselves as free to modify the scheme believed to have been revealed by 'scrapes', thus distorting the record still further. Much of John Fowler's work for the National Trust too seems to have been conceived on the basis that colour in historic interiors should be regarded 'with the same understanding as an advanced cookery recipe', since, as he and John Cornforth put it: 'Memorable cookery is based on flair and freedom of interpretation!.\* Reflecting this approach, at Wallington, Northumberland, the Trust reported apropos the 1968 redecoration of the Saloon:

\*3

'Scrapes revealed that the walls were originally a lilac blue with the ornament white, but if this had been repeated, it was felt that the effect on the ceiling would have been overpowering and so it was decided to reverse the colours, making the walls white and the ornament lilac.'\*

\*4

Many acclaimed 'restorations' had therefore to be rejected as evidence for the present study, and, with only the very few exceptions identified in the text, all the investigations reported below have been carried out using cross-sections prepared by myself.

Thus, in 1975 a good foundation of technical information and methodology linked to the related field of fine art was available. Its development for the investigation of house-painting was, however, in its infancy; and there was an almost complete absence of coherent knowledge about the way ordinary paint colour was conceived and used in interiors. To a large extent this was undoubtedly owing to the scarcity of references to colour in seventeenth- and eighteenth-century architectural literature, and to the difficulties earlier writers had found in the interpretation of these and material from other historical sources. When the diarist Mrs. Lybbe Powys visited Fawley Court, Buckinghamshire, in 1771, for example, she noted: 'The hall is a very noble one... It's stucco'd of a French grey.'\* Quite apart from the difficulty of knowing what constituted 'French' grey to eighteenth-century eyes, unless it was to be assumed that the entire Hall at Fawley was painted in this colour, much more information about the precise elements to which it had been applied would be needed to understand its appearance; and many similar references were extremely tantalising in the same way. Also, although it had been suggested on the basis of their antique appearance that various rooms in certain houses retained their original paint, for proper research it was necessary to be certain of this; and in several instances (including the Balcony Room at Dyrham, Gloucestershire (now Avon); the Saloon at Uppark, Sussex; and the Boudoir at Attingham Hall, Shropshire)\* it was found that earlier schemes are present beneath the existing finish. Much confusion had been caused by such assumptions of authenticity; whilst the position was further complicated by the almost complete lack of coloured architectural drawings from the first hundred years covered by the study, and the added fact that even from the 1750s when they become quite common, it was often difficult to translate watercolour into the finished effect. Sometimes, for example, walls simply tinted on a drawing could be hung with fabric rather than being painted. This was the case in Adam's Drawing Room at Audley End, Essex, Columbian's post facto (c. 1780) drawing of which\* shows the walls in pink; and schemes might also be changed in execution, as is evident from notes giving an alternative set of colours on

\*8

the reverse of a coloured ceiling design by George Dance the younger.\* There was too the difficulty of knowing when yellow stood for yellow and when for gilding. Occasionally, as on many by Adam, architectural drawings have manuscript notes on them concerning the colours to be used; but both here and with painters' accounts there is the same difficulty of interpretation as with diary references and other contemporary descriptions. It was clear, therefore, that only two things would provide the key, a proper working knowledge of eighteenth-century paint technology and colour-mixing practice, and a series of accurately established examples of colour schemes of different dates.

Method of  
study

\*9

For the interpretation of samples taken in connection with the latter, the first was a sine qua non, and work therefore commenced with the study of contemporary technical treatises and other documents reviewed below. This material was collated and a series of experiments in colour mixing using historical materials and formulae carried out. The results were written up in the form of a typescript report, of which eight copies were made in September 1976 for circulation to Berger Paints and a number of authorities for criticism.\* It contained three main sections dealing with the materials used by the house-painter, how these were made up into paint and the way this was applied, and a description of colour-mixing practice followed by a glossary of colour-names illustrated by colour samples. Thus equipped, it was possible to embark on the investigation of a series of rooms, all of which were distinguished by the survival of documentary evidence for their original schemes and chosen with an eye to achieving a good spread of dates and cost classes. Five were eventually completed: the Balcony Room at Dyrham of 1694; the Servants' Hall at Boughton House, Northamptonshire, of about 1700; the Old Drawing Room at Pitzhanger Manor, Ealing, Middlesex, of 1768; the room belonging to the Royal Society's Housekeeper at Somerset House, London, of 1780; and the Breakfast Room at Pitzhanger of 1803. These too were written up in the form of a report (dated July 1977), in this case six copies being made.\* This second phase of work, besides providing a series of key reference points to which other material

\*10



could be related, showed firstly that the information obtained by the earlier technical phase of work was accurate; and secondly, as already indicated, confirmed that 'scrapes' were virtually useless in investigation. Finally, it was possible to turn to purely documentary evidence, and, with the knowledge gained from the first two phases of work, establish a reasonably coherent outline of the use made of house-painting colour throughout the period covered by the study. This programme was completed by the conclusion of the Berger Research Fellowship in May 1978, and since then it has been supplemented by research into graining, marbling, and related topics; whilst many more rooms have been investigated. In addition, further research has been pursued into particular aesthetic matters, notably the classical sources drawn upon by eighteenth- and early nineteenth-century architects; and practical experience in the redecoration of historic interiors has allowed understanding of historic practice and outlook to mature. Finally, following re-assessment of the Berger Research Fellowship phases of study and their augmentation with all this new information, the whole has been put together in the form of the present thesis.

## Conclusions

Altogether, the most fundamental fact to emerge from the study has been that it is impossible to approach the understanding of historic interiors through modern concepts of colour and taste in their redecoration. Modern thinking on the matter is separated from that of the eighteenth century by the theories of the nineteenth, which, as explained in Chapter VIII, have formed many of the preconceptions which characterise present-day outlook. Just as the study of early music has reduced the scale of the orchestra, and removed many rich Victorian sonorities together with the hitherto ubiquitous vibrato from authentic performance, so too early interiors as originally seen might appear today rather bland and lacking in the roundness which has come to be expected. Exactly like early music, however, they gain in clarity and, once the conventions of the earlier age have become familiar, in architectural expression and interest. This is most noticeable, perhaps, in the case of the earliest interiors here considered, those of the Baroque and Palladian

eras, which seem in the majority of cases to have been conspicuously drab in terms of paint. In these, dull tones and whites or off-whites predominated, used in a way reflecting fairly formal ideas of architectural organisation; and where brighter colours were used, they were positioned in such a manner that they were set off by these cheaper shades. With the advent of the rococo, however, paint colour began to be used more generally, and about 1750 pastel tints came into use on ornamented ceilings. This idea was seized enthusiastically by neo-classical architects, and, combined with the study of antique survivals, was developed during the second half of the eighteenth century, most notably by Robert Adam. In the early nineteenth century the development of a coherent colour theory led to an entirely new approach to colour, which, added to an interest in the new historical models provided by increasing knowledge of antique and other styles, and coupled with contemporary changes in life style, culminated in a revolution of taste, superseding and soon causing to be forgotten the earlier ideas of interior paint colour with which much of this study is concerned.

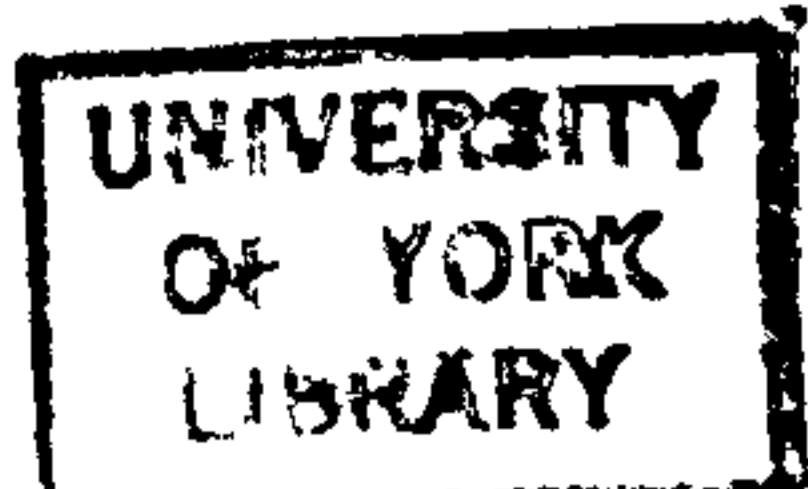
Also of importance is the link which emerged and may now be seen clearly to have existed between technology and the aesthetic use of colour. The influence of cost has already been touched on, and its fundamental significance will immediately be appreciated when it is realised that whites, browns, and other ordinary or 'common' colours were being sold at 4d. per pound in the 1730s, whilst pinks and some greens were two or three times that price, and the best deep green seven-and-a-half times that of white, at 2s.6d.\* Technology also directly established the limits of what could be achieved in paint colour. It was, as one eighteenth-century writer implied by the title of his book (reviewed below), the 'handmaid to the arts', and house-painting was very much an 'art' of the possible. Architects were certainly familiar with the best way to achieve architectural effect through exploitation of the materials and techniques of the day, and William Chambers, for example, gave detailed technical directions to the Earl of Charlemont over the materials to be used in painting the Saloon at the

Casino, Marino, Dublin.\* The constraints imposed by technology were, indeed, so basic to the age, that it was felt important in presenting the results of the present complete research programme in this thesis that a full account of it should precede aesthetic discussion. Accordingly, Part One is devoted to that topic: Chapter I deals with the nature, origins, properties, costs, and degree of usage of all the materials known to have been employed; whilst in Chapter II the manner in which they were made up into paints and varnishes of different kinds and the ways they were applied is discussed. This is followed by consideration of gilding, graining, and marbling, and by a glossary of the natural architectural finishes imitated in paint. Chapter III analyses the colour mixtures in use and the names attached to them, which are again set out in the form of a glossary and illustrated by samples prepared using historical formulae. Part Two of the study, divided into five chapters (IV to VIII inclusive), relates the way in which the use of paint colour developed from the opening years of the Restoration to just after the end of the Regency; and in Part Three, Chapter IX provides a full account of the different case studies and smaller analytical exercises performed on samples of paint removed from specific interiors.

Although this study has been confined primarily to the subject of house-painting, it has naturally been necessary also to consider at certain key points the relationship between it and the work of the upholsterer and decorative painter. With the latter in particular there was often some overlap; and in 1665, for example, when Robert Streater, the King's Sarjeant-Painter, contracted for work at Clarendon House, Piccadilly, London, besides the rates to be paid for ordinary paint-work it was agreed that trompe l'oeil roses were to be painted between the modillions of the exterior cornice at 2s. each, with the proviso that these were 'not to be painted by any of his Seruants, but by himself to be touched and Finished'.\* It is clear, therefore, that throughout the period being considered a number of painters would do both ordinary and decorative painting in this way, and this was evidently regarded as a common skill exhibited

by several members of the Painter Stainers Company of London. On occasion, of course, especially at times when Italian or French styles were being introduced, artists from abroad would be employed for specific exercises. Thus in the late seventeenth and early eighteenth centuries Laguerre and Verrio, for example, were much employed on ceilings and architectural schemes in the great houses and palaces of England; in the 1760s Adam was employing Italians such as Cipriani, Pergolesi, Zucchi, and Rebecca to paint arabesque and medallions in his interiors; and a little later artists such as Boileau were associated with schemes by Holland in the French style. The relationship between their work and that of the house-painter is discussed again in Chapter VI.

Considering the rôle of the architect vis à vis that of the upholsterer, it seems clear that the choice of paint colour in new buildings was commonly regarded as the province of the former. Sir Roger Pratt, for example, noted: 'Mem. Leaves to be brought to the architect wherof to make his choice as to the colour', relating the latter firmly to architectural considerations such as the sizes of rooms and the amount of light within them;\* whilst even at the very end of the period under consideration, at a time when upholstery probably played its greatest part in interiors, the architect Sir Jeffry Wyattville carefully defined his responsibility at Windsor Castle, Berkshire, as including the painting and gilding, mentioning particularly the shutters, ceilings, and doors as his concern. The gilded 'framing to the silk-work and glasses', he indicated on the other hand, formed part of the furniture and thus lay outside his province.\* Clearly, painting and upholstery were and remained separate trades, and in his book The London Tradesman (1747) were described as such by Robert Campbell, who made no mention of the former's work as comprising any part of the activities of the latter. Nevertheless, the two were often carefully related, especially (as explained in Chapter VIII) at the very end of the period covered by the present study, and the colours used were frequently carefully co-ordinated. Perhaps in earlier years this had not been necessary, since rooms were predominantly brown, white or drab and the paint-



work and upholstery each of a single colour; but after the mid-1760s, when more elaborate colour schemes began to be widely used, it is particularly notable that Adam, an architect well known for his furniture designs, clearly discussed the choice of upholstery fabrics with clients such as Lady Shelburne.\* This delicately balanced relationship between the two trades, carefully co-ordinated by architect and patron, must therefore be borne constantly in mind.

Another facet of architectural paintwork which must be stressed is the difference between the colours which could be used in interiors and those suited to and generally employed for exterior work. The physical demands made on exterior paint were obviously much more severe than those provided by interior conditions, most notably in the need for a much higher degree of freedom from fading when exposed to strong sunlight; whilst questions of economy were often also more pressing, especially where large areas of paintwork, which would need comparatively frequent renewal, were involved. For this reason, with the notable exception of the use of blue for prestige purposes on ironwork (discussed in Chapter VII) and other occasional excursions into more assertive hues, 'common colours' made using earth pigments and black provided the everyday norm in town and country. These included browns, greys, dull greens, white, and off-whites, besides the dull red paint made from red ochre which T.H. Vanherman, whose book is reviewed below, described as,

'a most excellent and durable covering for barns, sheds, cart and waggon wheels, implements of husbandry, ... &c.'\*

At the end of the eighteenth century, moreover, figures such as Sir Uvedale Price and, a few years later, Humphrey Repton, actively discouraged even the use of white, preferring instead such colours as 'invisible green', which, James Crease commented in 1808, was,

'so denominated, from its being proper for covering gates and rails, in parks, pleasure grounds, &c. by

\*18 rendering them in a measure invisible at a distance,  
on account of its approximation to the hue of the  
vegetation.\*

\*19 Special finishes such as 'sanding' and 'fresco' were often  
employed to give a dull, stone-like finish to stucco,\* and  
against the general background of such 'vernacular' paint  
colours the interiors of country houses would have scintil-  
lated. Apart from the richness of their upholstery and  
gilding, in the best apartments of the later eighteenth  
century the eye would have been beguiled by delicate and  
fresh tints of paint colour, in which the brilliance and  
luminosity of the more expensive pigments were exploited.  
At every stage, therefore, cost and the limitations of  
technology provided an essential framework for the use of  
paint colour; and the often dull setting in both town and  
country of the houses containing the interiors discussed  
in this study was an important reflection of this.

### Sources

In reviewing the sources used it is convenient to  
discuss them under two headings, - although it will be  
obvious that aesthetic information was often present in a  
work dealing primarily with technique, and, to a lesser  
extent, technical information in a text whose main aim was  
aesthetic. This is especially true of the notebooks of  
the gentleman architect Sir Roger Pratt (1620-85), which  
were published by R.T. Gunther as The Architecture of Sir  
Roger Pratt in 1928. In these is to be found a mixture of  
technical and aesthetic information, ranging from the ways  
of designing and embellishing ceilings to the fairly detailed  
information contained in the 1665 painter's agreement for  
Clarendon House which has already been mentioned, besides  
a number of other memoranda. It is not, however, a coherent  
account of contemporary painting practice, and with litera-  
ture of an aesthetic nature this remains true of all the  
sources examined until the 1800s are reached. To begin  
with though, the material used primarily in compiling the  
technical chapters will be reviewed.

Technical  
sources

John Smith first published The Art of Painting wherein  
is included the Whole Art of Vulgar Painting in 1676, and

in it he reviewed the methods and materials of the painter with a special chapter on 'The Practice of Vulgar Painting' in which he dealt with both interior and exterior work. His main interest was, however, the painting of sundials, as is clear from the superscription on the pages throughout the book: 'The Art of Painting / Sun=Dials'. A second, much enlarged, edition appeared in 1687 under the title The Art of Painting in Oyl in which he described more pigments and revised some of his earlier instructions. Unfortunately though, in this edition is is far less clear when he is discussing interior as distinct from exterior work, and it seems clear too that much of the time, especially in the case of some of the pigments he listed, he had sundials in mind, rather than that all of them should be necessarily used in house-painting. As his title implies, he was only concerned with oil paint, and gave no information at all of the other medium extensively employed in interiors of the period, distemper. Nevertheless, it is extremely fortunate that, virtually at the beginning of the period considered in this study, such an excellent book, albeit needing careful interpretation, was published; but on the other hand this seems inevitably to have resulted in a compensating disadvantage, since with such a good text already available there was little incentive for anyone to produce another for many years, in fact until the early nineteenth century by which time techniques had changed considerably. Further editions of Smith were published in 1701, 1705, 1723, 1738, 1753, and 1788, but (at least up to the 1753 edition) only very minor alterations were made, and, most notably, no account was taken of the introduction of the important pigment Prussian blue in the first quarter of the eighteenth century, nor the taste for flat oil finishes from the 1740s. It remained, therefore, a book reflecting late seventeenth-century ideas until crudely revised and re-issued as Smith's Art of House-Painting by William Butcher in 1821, with a second edition in 1825. Even so, Butcher did little more than remove certain parts of the text whilst adding some new material and allowing other parts of Smith's original work to stand without critical revision, so that by this stage the work, in part completely obsolete, was highly misleading as a statement of contemporary practice.

Smith's interest in clock faces is complemented by a short entry in a manuscript of about 1700 by John Martin. This is now at the Soane Museum and contains a limited amount of information germane to the present study; but with this and only one major exception house-painting literature between the date of Smith's original publication and the early nineteenth century is dominated by works in French. The architect A.C. D'Aviler, for example, published his Cours d'architecture in two volumes in Paris in 1691, devoting three pages to 'La Peinture ou Impression dans les Bastimens'. In these he described a number of colour mixtures, giving an interesting insight into French taste; and a more limited amount of information of the same kind is to be found in Pierre Bullet's L'Architecture pratique also published in Paris in 1691.

Before looking at the other two important Continental works, it is necessary to mention The Handmaid to the Arts published in two volumes in 1758 by Robert Dossie, and followed by a second edition in 1764. Dossie was not, in fact, greatly concerned with house-painting, although he discussed gilding in some detail, but his book is of considerable significance for the descriptions it contains of the materials used by painters in general. It therefore offers important information on the manufacture and character of these, but it must constantly be remembered that he dealt with many substances which were far too specialist or costly for use by the house-painter. Shortly afterwards, in 1772, J.F. Watin published in Paris a major work on the subject, L'Art du peintre, doreur, vernisseur, the fourth edition of which appeared in 1785. In this he described the materials and paint finishes used, including distemper, together with a range of colour mixtures reflecting clearly those employed by Adam and his contemporaries. It is therefore of considerable significance for the study of English practice, although it must be approached with caution in many respects. Watin described, for example, a number of varnish mediums at great length; but although these were used in both countries on furniture, they seem also to have been used in France for the decoration of boiserie or wainscot, which had largely disappeared from English interiors by that



date. In addition, he described with great enthusiasm a number of highly elaborate finishes employing up to twenty coats, but it seems doubtful if these were greatly used, even in France. His book formed the foundation of that by P.F. Tingry of Geneva, first published in 1803 as Traité théoretique et pratique sur l'art de faire et appliquer les vernis, translated into English the following year as The Painter and Varnisher's Guide. This was again of importance to the present study, but as with Watin's book has to be approached with care. Like Watin, Tingry gave a comprehensive account of painting materials together with oil, distemper, and varnish formulae and methods of colour mixing, but these are seen again from a Continental point of view. A second English edition followed in 1816, and a third, anonymously but extensively 'corrected and improved by a practical chemist' in 1830, under the title The Painter's & Colourman's Complete Guide. The latter is of especial interest for its account of the new pigments introduced in the first three decades of the nineteenth century.

By the 1830s, however, English house-painting literature had expanded enormously. About 1811, the Hackney colourman John Pincot (whose premises were at 'The Rainbow') produced Pincot's Treatise on the Practical Part of Coach & House Painting. In contrast to the often rarefied ideas and highly cultured exposition of house-painting given by Watin, Pincot's down-to-earth language is practical and obviously trustworthy as reflecting everyday practice. As his title implies, besides dealing with the varnish-painting of coachwork, he gave a clear exposition of interior and exterior house-painting, and also described the use of distemper. It is interesting to compare this with the virtually contemporary American book by Hezekiah Reynolds, published at New Haven in 1812, Directions for House and Ship Painting in which interior and exterior technique and colours are also clearly divided. Although his directions are fairly minimal and much less full than those of Pincot, Reynolds's work is valuable for the colour mixtures it contains. These, however, seem rather old fashioned by European standards, and this is certainly the case with his graining methods which, though possibly still practised by

provincial house-painters in Britain, had been superseded in fashionable work. They are, therefore, probably the best description of seventeenth- and eighteenth-century methods so far located.

Both these books were obviously written by practical men well versed in their trade, but the encyclopaedic works of the next decade must be approached more carefully. In 1813, Thomas Martin (now believed to be a pseudonym for John Farley) published The Circle of the Mechanical Arts dealing in detail with a large number of trades, amongst them house-painting. Much of the chapter he devoted to this subject seems reasonably reliable, and could, perhaps, have been based on material communicated by a house-painter; but other parts, notably his descriptions of materials, seem to have come from other sources. His mention of fish oil, a substance unknown in common practice, is one instance; but it was in taking the complete list of pigments from Dossie, whose descriptions of over half a century earlier he abridged, that the editor betrayed his lack of intimate knowledge of the field by continuing to include many that could never have been used for house-painting. Also, of course, he omitted to notice certain important pigments such as patent yellow or Scheele's green which had been introduced since the late 1750s. The whole of Martin's text must therefore be examined critically in a way which Peter Nicholson failed to realise when he plagiarised it in his New Practical Builder (1823-5). Nicholson's chapter on house-painting is taken virtually entirely from Martin, although he removed one or two passages and made two or three other minor alterations. Most notably, however, he made the text even more of a trap for the unwary by adding a list of colour mixtures taken from Smith's seventeenth-century work (possibly using Butcher's 1821 re-issue) many of which were archaic. In general, by contrast, the entry in Nicholson's Architectural Dictionary of 1819 under the heading 'PAINTING, Economical' and the chapter 'Painting in Oil' in his Mechanic's Companion published in Oxford in 1825 seem rather more dependable; but the chapter on house-painting in the 1834 edition of the Builder's and Workman's New Director is again based on that in the New Practical

Builder. Another work obviously compiled from a variety of sources is the Painter's and Varnisher's Pocket Manual published by Knight and Lacey in 1825. This relies heavily on Butcher's edition of Smith and also on Tingry, although it contains additional material of interest; and further new information is present in an edition of about 1830 published by M. Taylor as The Painter's, Gilder's, and Varnisher's Manual.

Finally, in the late 1820s two important new books appeared. The first was The Decorative Painters' and Glaziers' Guide published in 1827 by Nathaniel Whittock. From a technical point of view, Whittock's main contribution was a fairly accurate assessment of the pigments and other materials employed by the house-painter, together with detailed descriptions of the improved methods of graining and marbling then in use. The second work is The Painter's Cabinet, and Colourman's Repository, published in 1828 by T.H. Vanherman and reprinted the following year as Every Man His Own House-Painter and Colourman. Vanherman, who described himself on the title page of the 1829 edition as an artist and house-painter (mentioning his experience as having been acquired in the course of fifty years) seems to have been an interesting figure, and his main concern was 'amelioration of the noxious quality of common paint'. He therefore described two new types of paint, 'Impenetrable or Anti-Corrosive' for exterior use, and 'Aromatic' for interiors, but gave besides a great deal of other useful and accurate information on a host of practical matters. His book had been preceded by a number of pamphlets and trade cards issued by others in the house-painting field, some merely listing the wares or accomplishments of their progenitors, but others being of greater substance. Of these the 'Directions for Painting' issued by Alexander Emerton during the 1730s are of particular interest as going a little way towards filling the otherwise long gap in British house-painting literature during the eighteenth century; whilst his brother Joseph issued a slightly amended, handsomely engraved version, some time in or before 1744.\*

\*Fig.7

These contain a number of useful points on technique, as do also a group of rather later pamphlets: Hints for the

Preservation of Wood-Work Exposed to the Weather (1808) by James Crease; the description of The Antique Ornamental Paints (1816) issued by the Patent Colour-Works; the Prospectus of the Various Paints... Manufactured exclusively by Tho.<sup>S</sup> Bentley (1817); and A Comparative View of the... Invulnerable Oil Paint, prepared by John Lingard, Jun., the second edition of which appeared in 1825. Bentley's document is of especial importance as containing a series of colour samples, most now completely discoloured but interesting as the first such colour-card so far discovered.

Throughout the period covered by this study, a plethora of architectural books was published; but in almost every case where house-painting is mentioned the author's concern was primarily with the prices applicable to different items of work. Occasionally a small amount of practical information was included, notably by Thomas Wilsford in his Architectonice. The Art of Building (1659); Sir Balthazar Gerbier, Counsel and Advise to all Builders (1663); William Leybourn (clearly paraphrasing Wilsford), A Platform for Purchasers, a Guide for Builders, a Mate for Measurers (1668) and Architectonicae: or, A Compendium of the Art of Building (1700); and Richard Neve (under the pseudonym of T.N. Philomath, and quoting from Leybourn's later work), The City and Countrey Purchaser, and Builder's Dictionary (1700). Others, notably Stephen Primatt in The City & Country Purchaser & Builder (1667); J. Leadbeater, The Gentleman and Tradesman's Compleat Assistant (3rd edn, 1770); William and James Pain, Pain's British Palladio (1786); and William Pain, The Practical House Carpenter (5th edn, 1794), were simply concerned with prices; but even from such books a great deal of information can be gleaned, since different colours attracted different rates of remuneration and those listed give a good insight into taste and technical development of the day. This is especially true of William Salmon's Palladio Londinensis: or, the London Art of Building (1734) in which he reprinted the complete priced colour list of Alexander Emerton, whose 'Directions for Painting' have just been mentioned. Further editions, including the third (1755) and fifth (1773), also contain this; and his article was plagiarised by James

Aheron, in his General Treatise of Architecture published in Dublin in 1754. A comparable trade list, this time of Madame Cosseron's 'Couleurs Lucidoniques' was published by J. Rondelet in the fifth volume of his Traité théorique et pratique de l'art de bâtir (Paris, 1812-n.d.). From 1776 when I. Taylor published The Builders Price-Book, whole books were devoted exclusively to prices. Later editions of this which have been consulted include the 4th (1787), 11th (1794), and further editions of 1810 and 1813. In 1804 John Phillips produced Crosby's Builder's New Price-book, partly based on Salmon, later editions including the 19th (1812) and 31st (1821). In 1811 Z. Skyring published the first edition of Skyring's new and complete List of Builder's Prices, although it is the twenty-first edition, published by his son W.H. Skyring in 1831 under the shortened title Skyring's Builder's Prices, which has been used for the present purposes; whilst the second edition of The Improved Builder's Price Book by W.R. Laxton appeared in 1818.

Technical understanding of the house-painting literature so far reviewed is greatly aided by correlation with information from contemporary works dealing with the use of the same or similar materials for fine-art purposes, and also with purely scientific works. Amongst the first may be mentioned André Félibien's Des principes de l'architecture, de la sculpture, de la peinture published at Paris in 1676 which is of particular interest in connection with gilding, together with Dossie's Handmaid to the Arts already noted. During the early years covered by this study, the scientific works largely reflect the interest taken by members of the Royal Society in manufacturing processes; in 1678 articles were published in the Philosophical Transactions of that body by David Colwall, Christopher Merret, and Sir Philiberto Vernatti dealing respectively with the manufacture of ferrous sulphate (important in connection with the making of artificial red ochres), silver refining (important in connection with the preparation of blue and green verditers), and the manufacture of white lead. Earlier, another Fellow of the Royal Society, John Ray, had published descriptions of the manufacture of verdigris in his Observations topographical, moral, & physiological (1673),

and of silver refining and the manufacture of red lead in his Collection of English Words (1674); whilst Robert Plot described a number of ochre deposits and the strata within which they were found in his Natural History of Oxfordshire (1677). Between 1692 and 1703, John Houghton published a series of articles under the general title A Collection for Improvement of Husbandry and Trade which included a significant amount of material useful in connection with botanical products, and in 1724 John Woodward published his well known description of the manufacture of Prussian blue. In 1746 John Hill translated the geological work of Theophrastus, providing in his commentary a number of interesting observations on eighteenth-century pigments; but in the second half of the eighteenth century scientific interest in this field seems soon to have moved, at least temporarily, to France. In 1766 Fougereux de Bondaroy published his article on Naples yellow in the Histoire de l'Académie Royale des Sciences; in 1783 Guyton de Morveau's paper on white pigments appeared in the Nouveaux Mémoires de l'Académie de Dijon; and in 1792 M. Pelletier's article in the Annales de chimie described alternatives to the secret English method for the manufacture of blue verditer. This was followed by a work of major importance, Chimie appliquée aux arts by J.A.C. Chaptal, published (together with its English translation Chemistry Applied to Arts and Manufactures) in 1807. This was succeeded by a number of English books which contain useful information, the most important of which is Andrew Ure's Dictionary of Arts, Manufactures, and Mines of 1839. To these sources should be added the host of patent specifications entered with ever increasing frequency throughout the period being studied, which contain much data relating generally to improvements in the manufacture of existing pigments.

A full account of the artistic and scientific literature, including the activities of the Society for the Encouragement of Arts, Manufactures, and Commerce (now the Royal Society of Arts) in the years around 1800 is contained in Dr. Harley's chapter in Artists' Pigments on 'Sources for the History of the Colour Trade'; but in addition to many

of those she discusses the present study has benefitted from access to the manuscript archives of Berger Paints. These hitherto virtually untapped documents contribute an important source for the history of the colour trade, and cover a period extending roughly from the last quarter of the eighteenth century to the first world war. Their importance thus extends well beyond the confines of the present study, and from the total of just over two dozen volumes (together with several maps and nineteenth-century photographs) ten were selected as immediately relevant for detailed examination. In view of their importance it is worth looking at these in some detail here, together with the early development of Berger's activities.

\*20

In 1766 Louis Steigenburger entered into a partnership with two others for the manufacture of 'a certain blue colour for paints', and by 1772 was described as 'Blue Maker' in an order from Dublin addressed to 'Louis Bergers' of Narrow Street, Limehouse, London.\* By the late 1770s, his output seems to have been extended to include a pink lake pigment apparently based on cochineal, samples of which are contained in a leather-bound quarto volume bearing a paper label identifying it as the 'Sample Book'. This seems to have started life as an account book, one entry for 1778-9 surviving, but during 1779 and 1780 it was used to record batches of pigment under the headings: 'to whom sold', 'price', 'quantity', 'when sold', 'coch'1 [i.e. cochineal]', and 'quality'. Under the last heading in each case there is a smear of pigment. From 1789 to 1795 the book was also used to record samples of 'wett blue', and a few further entries occur up to 1802. The latter seem to be a record of samples sent out and the prices quoted for each rather than a record of pigments sold, and the volume is altogether fascinating as showing the many different qualities of Prussian blue manufactured and the prices relevant to each.

The second volume of interest is a letter book of similar size and binding. The copy letters are divided into two series, running from 1785 to 1788, and from 1778 to 1788. At this period the company seems also to have

been acting as merchants, only manufacturing a proportion of the pigments they sold, and as was usual at that time for a colourman their wares included anchovies, capers, and emery paper, besides other commodities. Business extended to Dublin, Exeter, Bristol, and Newcastle, as well as to Ostend, Danzig (now Gdansk), and Bordeaux. Several letters are of particular moment since they contain price lists.

Of especial importance are the five formula books, two of which seem to have been used to record pigments in production, and the other three for experiments. The earliest is a tall vellum-bound volume labelled in ink: 'Lake & Carmine Book'. Entries commence in 1787 as a priced record of batches of carmine and cochineal lakes, but from 1st February 1788 the pricing is omitted. From October 1792 the batches were numbered, and in 1793 the first reference to a yellow lake occurs. From 1803 a new format was adopted with the recipes for the various qualities of carmine written at the head of succeeding pages, and a record of each batch below. A new series in this format was commenced in 1811, by which time the manufacture of other pigments seems to have been well established. The formulae were again transcribed in 1815, and for some reason which is not apparent this is followed by a second transcription of the same date. Various notes dating between 1821 and 1829 follow, and at the end of the volume are a few miscellaneous items. In 1831 the 'Lake & Carmine Book' was superseded by another formula book of similar size and binding, into which all the current formulae were transcribed. Dated modifications and notes continued to be made well beyond the middle of the nineteenth century, all the formulae being given in great detail including quantities of materials and procedure, and all the products were costed out. Besides these two volumes, the experimental notebooks are also of interest. The first is a quarto, half-bound volume labelled (on the back cover) 'Recipes & Experiments Various', and covers a period between 1815 and 1818. The second is also a quarto volume of similar size but bound in vellum, and contains notes and formulae dated between 1819 and 1831, with a final item dated 1840; whilst the third is again similar



and contains formulae dated between 1830 and 1846 together with a quantity of loose papers covering the same period.

Last to be mentioned are the annual accounts and stock-taking lists forming a series of volumes running from 1801 to 1810. From these, three were selected for detailed analysis. The first contains summarised extracts from the accounts for 1801 together with a detailed list of the company's stock on 1st January 1802, the second deals in the same way with 1805-6, and the third 1809-10. All are of particular value in showing not only the cost of virtually the complete range of house-painting pigments, but also the quantities in stock, giving a fairly clear picture of those in common use and those whose employment was more limited.

\*21 The only other manuscripts which merit mention at this stage (apart from the building accounts reviewed in due course below) are the notebooks of George Field, now at the Courtauld Institute, Portman Square, London, which were described in 1979 by Dr. Harley in Studies in Conservation.\* Amongst these is a series of pigment samples which proved invaluable as comparative material for some of the pigments made in accordance with old formulae for purposes of the colour mixing experiments forming the charts attached to Chapter III. In this connection should also be mentioned the specimens of British earth pigments in the collections at the Institute of Geological Sciences, South Kensington, London, which were of particular help in understanding references to them in the early literature.

Finally, mention must be made of the later and more modern books on paint technology and other matters which have been found particularly valuable in the course of study. General works included The Chemistry of Paints and Painting by A.H. Church (2nd edn, 1892); Painters' Colours, Oils, and Varnishes by George H. Hurst (2nd edn, 1896); and The Industrial and Artistic Technology of Paint and Varnish by A.H. Sabin (1904); together with Outlines of Paint Technology by Noël Heaton (2nd edn, 1940), which is largely based on Hurst. Whilst not reflecting up-to-date knowledge and scholarship,

the information they contained on obsolete materials and processes was crucial. Of more specialised works, that on pigments by Dr. Harley has been mentioned more than once, but to it should be added the History of Seed Crushing in Great Britain by H.W. Brace (1960) - a work frustrating for its lack of references - and Vegetable Gums and Resins by F.N. Howes (1949). The latter subject still offers considerable obscurities, but present-day knowledge has been carefully surveyed by John Mills and Raymond White in their recent article 'Natural Resins of Art and Archaeology' published in Studies in Conservation in 1977. With reference to the study of timbers imitated in graining, the Directory of the Historic Cabinet Woods by F. Lewis Hinkley (1960) has been found useful; but for marbles little has recently been published, and the best information on varieties and nomenclature has been found in A Treatise on the Building and Ornamental Stones of Great Britain and Foreign Countries by Edward Hull (1872); the History and Uses of Limestones and Marbles by S.M. Burnham (1883); Marble and Marble Working by W.G. Renwick (1909); and Marble, a Handbook by Ian Cater [1933]. Again, the study collections at the I.G.S. have proved invaluable, supplemented by those at the Natural History Museum, South Kensington, and, most importantly, by the named specimens in the table formerly belonging to George Gwilt now at the Victoria and Albert Museum, South Kensington.\*

\*22

Sources for the  
use of colour  
in buildings

In considering the way colour was used in buildings over the period covered by the present study, it has been necessary to turn to a wider range of sources, since, during the first century and a half of this very little was published on the subject. Books have, therefore, been found less useful than tradesmen's manuscript accounts, architectural drawings, and pictures of interiors, besides the case studies detailed in Part Three.

Books

The published sources examined may be divided roughly into four classes: architectural and design books; books dealing with colour theory; books devoted to the description of a particular house; and published letters and diaries. All have, however, considerable limitations. As already

mentioned, a certain amount of information about the colours used in late seventeenth-century France may be gleaned from the books published in 1691 by D'Aviler and Bullet, but a marked silence seems to have elapsed thereafter in architectural writings until 1753 when Marc-Antoine Laugier published his Essai sur l'architecture. His main concern with colour was in connection with the architectural use of different marbles, and he was clearly concerned with colour as an integral part of architectural composition, although he devoted only two or three sentences to it. Three years later, in his Complete Body of Architecture Isaac Ware provided (notably in connection with methods of measurement for pricing) a few oblique references to colour which are similarly tantalising; but in 1759 rather more precise references to the colours in use on ceilings were made by William Chambers in his Treatise on Civil Architecture. Neither these, nor the few allusions to colour in the first two volumes of the Works in Architecture of Robert and James Adam (1773-9) add up, however, to more than small pieces needing to be set into the much larger context of the whole jig-saw puzzle; and the same is true of the comments on colour contained in The Exhibition... being Remarks on the Principal Works to be Exhibited... at the Royal Academy published by Robert Smirke under the pseudonym of Roger Shanhagan in 1779, and in Οἰκίδια, or Nutshells published by James Peacock under the pseudonym Jose Mac Packe in 1785.

After 1800, however, a profound change in architectural literature took place with the advent of a series of copy books in which colour was discussed as an integral part of a scheme, rather than its provision simply being assumed. In 1801 Rudolph Ackermann published his Designs for Architects, Upholsterers, Cabinet-Makers, &c. in which were described the various rooms of a house, complete with their furnishings and paint and fabric colours; and in 1807 Thomas Hope included a revealing description of the colours used in the interior of his house in Duchess Street, London, in his Household Furniture and Interior Decoration. Other design books, notably by George Smith (1808 and 1812) followed, but of particular interest is the latter's Cabinet-Maker and Upholsterer's Guide (1826). This is paralleled

by Whittock's Decorative Painters' and Glaziers' Guide (1827) which has already been mentioned, and ultimately by The House Decorator and Painter's Guide (1840) by H.W. and A. Arrowsmith. In all these, the drawings (some coloured) of rooms are accompanied by written descriptions giving a clear impression of the way in which colour was now conceived and organised in a domestic interior, something which appears to be entirely lacking in the late seventeenth- and eighteenth-century literature examined. Such volumes must, nevertheless, be supplemented by the contemporary literature on colour theory.

Again, references to colour in early theoretical publications are minimal, although the early eighteenth-century author Gerard de Lairesse considered the use of coloured marbles. The mid-eighteenth century, however, saw the careful application of purely abstract theory concerning colour following the appearance of Edmund Burke's Philosophical Enquiry into the Origin of our Ideas of the Sublime and Beautiful, first published in 1757; whilst at the end of the century and beginning of the nineteenth the ideas of the German philosopher J.W. Goethe, set out firstly in his Beiträge zur Optik in 1791 and in fully developed form in his Zur Farbenlehre of 1810, wrought a revolution in outlook. His work influenced a whole generation of writers, most notably D.R. Hay, the content of whose book, The Laws of Harmonious Colouring (1828), which is of special importance for its application of colour theory to the interior, is described in Chapter VIII.

During the second half of the period covered by this study, a handful of books were published describing specific buildings. Most notable for the eighteenth century are Horace Walpole's Aedes Walpolianae which first appeared in 1747 and his Description of... Strawberry-Hill published at Strawberry Hill in 1784. In the former, whilst noting the colours and types of hangings in each of the rooms at Houghton Hall, Norfolk, he gave no details of paint colour; but in the latter he gave more attention both to this and the furnishings. The same type of information is contained in several books published in the first quarter of the

nineteenth century describing Fonthill Abbey, Wiltshire, of which Delineations of Fonthill by John Rutter (1823) has been found the most useful; whilst a limited amount of information on paint colour is contained in Views of Eaton Hall in Cheshire published by J. and J.C. Buckler in 1826. Towering over all the works so far mentioned is the History of the Royal Residences published in 1819 by W.H. Pyne. Lavishly illustrated, many copies were issued with coloured plates, and for Carlton House, London, in particular these are matched by wonderfully detailed descriptions of the colours employed together with other details of the décor. Amongst contemporary publications, these plates are fully equalled only by those in John Nash's account of the Royal Pavilion at Brighton (1826). These few books cannot, however, be said to present a general cross-section of typical interiors, since every one of them was clearly exceptional. Often, though, diarists and letter writers would describe the different houses they visited or in which they stayed; but such references are scattered throughout many volumes and, though sometimes valuable, are time-consuming to locate. Two ladies in particular, Celia Fiennes in the late seventeenth century, and Mrs. Lybbe Powys in the second half of the eighteenth seem to have taken a consistent interest in the interiors of a house, and the Journeys of the former (ed. R. Morris in 1947) together with the Passages from the Diaries of the latter (ed. E.J. Climensson in 1899) make particularly rewarding reading.

#### Manuscripts

The manuscripts used in connection with the 'aesthetic' part of this study fall into three groups: notes prepared by architects and others, and further documents in which intentions for paintwork were expressed; tradesmen's accounts, which form by far the largest number of sources in this category; and, in one or two instances, inventories. The latter, including for example the series relating to Ham House, Surrey,\* and Henry Pelham's house in Arlington Street, London,\* generally concentrated on moveable furniture, of which curtains and wall-hangings were regarded as part, but remain silent concerning paintwork. A notable exception is provided, however, by the inventory of Wimbledon House, Surrey, taken in 1649 following the execution of King Charles, which was later published by the Society of

\*25 Antiquaries of London.\* An altogether unusual document of similar character is the 'Deed of Transfer' signed by the officers of the latter body when they took up residence in their new rooms at Somerset House, London, in 1781, which offers considerable data on both paint and

\*26 furnishings.\* Notes and letters giving details of interior colour schemes have been found useful for the second half of the period considered, notably the letter books of Sir

\*27 William Chambers preserved at the British Museum, London,\* and his letters to the Earl of Charlemont now at the Royal

\*28 Irish Academy, Dublin.\* Also of interest are notes for

\*29 gilding at James Wyatt's Thirkleby Park, Yorkshire,\* and Soane's notes for the decoration of his villa at Ealing,

\*30 Middlesex, Pitzhanger Manor.\* The archives at Dunham Massey, Cheshire, also contain a series of notes on paint-

\*31 work it was intended to carry out in the 1820s.\* In general, though, such documents contain fairly abbreviated information, so that often it is simply the salient points of a scheme which are noted, whilst the general context into which they were to be fitted is taken for granted. Only one instance of detailed discussion has been noted, the letter sent by Chambers to the Earl of Charlemont in connection with the Casino, Marino, Dublin, in 1769 arguing

\*32 the relative merits of two schemes.\*

Undoubtedly, painters' accounts have proved to provide the best and fullest technical detail of colour schemes. They generally offer a precise date with the security of virtual certainty that the work they describe was carried out. Landowners, their agents, and their architects seem to have been as assiduous in checking tradesmen's bills as any modern employer could wish; and indeed at Dyrham Park and Boughton House, Northamptonshire, corrections were made to the measurements for which Hauduroy and Dandridge

\*33 attempted to charge.\* Where in an account items are broken down into units to which differing rates were applicable, their precise, technical language is a delight to read, and it is here that the primary decision to base the present study firmly on a thoroughly investigated foundation of early paint technology has proved of fundamental importance. In the past, such documents have frequently been misinter-

preted, and significant points passed over without understanding. Thus one investigator in transcribing the account dated 1786 for painting the dome at the General Register House, Edinburgh, passed over the all important phrase '& flatted';\* whilst another historian finding an item he transcribed as, 'clear cold white lead [paint] twice in Oil Dead White' in the account for painting the Music Room at Norfolk House, London in 1755, set out to show on this basis that the room was painted white in accordance with fashionable French standards.\* He apparently failed to notice the carefully recorded fact that only 18½ square yards were painted in this way, and that the next item was for '218 Yards of 5 times in oil party colour'd & a clear cole white lead including Pilaster pannels, rich Mouldings, Trophys & other... Ornaments'.\* Moreover, correctly transcribed the first item should have read, 'clearcold white lead & twice in Oil Dead White', which makes complete technical sense as conveying that the area in question was primed in a clearcole based on white lead (rather than the ordinary variety based on whiting), followed by one coat of ordinary oil paint and a flatting coat. Such technical information has, of course, been invaluable in assembling Part One of this study.

Accounts do, however, present certain problems of their own. Whilst many are related to specific rooms, others merely summarise the total yardages involved in a whole house or suite of rooms. A tantalising item in John Crace's account for painting at Woburn Abbey, Bedfordshire, under Henry Holland, refers to:

'99 Yards three oyl & flatted. Moulding on pannells and styles pickd in yellow',

without mentioning the location concerned.\* It was also common practice to mention only special items in relation to particular rooms, all 'common colours' sharing the same price per yard being summed at the head of the ledger. The accounts for Somerset House provide an example of this, where William Evans's bill of 1780 contains first a summary of these ordinary items charged at a basic rate, only

mentioning specific items in connection with a room such as the Meeting Room of the Society of Antiquaries. Here, he noted that the Ionic cornice, ceiling ornaments, and mouldings were dead white, whilst the ceiling grounds were pea green, pink, and lilac.\* Nevertheless, by putting such information together with the results of physical investigation and that contained in other sources and analysing carefully the yardages involved, a great deal of sense can be made of it.

Even within a room, accounts do not always identify the disposition of the different colours, and the bill for the Dining Room in Henry Pelham's house in Arlington Street is typical.\* In a general context of nearly 300 square yards of dead white and unlocated 9½ square yards of chocolate are mentioned, requiring either investigation of the room or careful argument to determine to which elements it was applied. A final problem in dealing with accounts has been the frequent difficulty of identifying rooms to which reference is made. In the intervening years since any particular account was written, the interiors to which it refers will frequently have changed their function and been re-named, so that, for instance, whilst a very full series of accounts survives at Boughton for work carried out about 1700, very few of the rooms in the house can be correlated with the names given. To do so would require much work into the general history of the house; and the locations of 'My Lady Hinchingbrooke's Apartm<sup>t</sup>' and 'My Lord Montharmer's new apartment' remain unresolved for the present.

Finally it should be noted in connection with the study of accounts, that distemper (water-based paint) which would commonly form an important part of a colour scheme, especially on ceilings, was often applied by the plasterer. As with the documents relating to work carried out at Ham House in the 1630s and Dyrham Park in the 1690s, reference has, therefore, to be made not only to the painter's account, but also to that of the plasterer. Likewise for gilding a separate tradesman would sometimes be employed, as at Henry Pelham's house in Arlington Street;\* but this was not invariable, and at Osterley Park, Middlesex, in the 1770s David



\*41 Adamson was responsible for both painting and gilding in  
the Drawing Room.\* Often too, the woodcarver would be  
responsible for the gilding, this being the case in the  
\*42 1750s at Norfolk House.\* In conclusion, two other related  
documents which are of interest should be mentioned, the  
tenders for the paintwork at Greenwich Hospital, London,  
of the 1690s, and a contract of 1770 for the erection of  
\*43 a baker's shop and house in Middlesex.\* The former simply  
provides a note of the rates which each of three painters  
proposed to charge, whilst the latter is of particular  
moment as showing the way paintwork would be specified  
on an everyday job, since surviving accounts and other  
documents tend generally to relate to far grander build-  
ings.

#### Drawings

Although a good spread of accounts of varying dates  
was located, this cannot be said to have been the case  
with architectural drawings. Very few coloured drawings  
dating from before the 1750s survive, and those that do  
generally relate to exceptional projects. Thus, the  
coloured late seventeenth-century elevations for Queen  
Mary's Closet at Hampton Court preserved at the Soane  
\*Figs.31,32 Museum\* show an extremely sumptuously finished room, and  
the early eighteenth-century designs at the Royal Institute  
of British Architects Drawings Collection by John Talman  
for a Trianon in the grounds of the same building are also  
\*Figs.40,61 notably rich in conception.\* Such drawings have therefore  
to be set into a context established by the use of other  
evidential material, but once the latter half of the eight-  
eenth century is reached it is largely the architectural  
drawings which provide the main basis for research. This  
is due in large measure to the vast collection of drawings  
from the Adam practice which were acquired by Soane in the  
early nineteenth century. Inevitably, both because of  
Adam's virtuosity with colour and the size of the collection,  
he dominates work on the period, and drawings by his contem-  
poraries have had to be sought more assiduously.

The major collections of drawings consulted in the  
course of research include, besides the Soane Museum, that  
of the Royal Institute of British Architects and those in

the Victoria and Albert Museum. In addition, drawings at the Ashmolean Museum, Oxford; Audley End, Essex; and the Department of Prints and Drawings at the British Museum, London; a number belonging to the Greater London Council; others at Kedleston Hall, Derbyshire; Nostell Priory, Yorkshire; and the Royal Academy, London, have been examined. At Eton College, Buckinghamshire, the Topham collection was found to be of particular importance in connection with the study of antique precedents for Adam's neo-classical designs, apropos which should also be mentioned such books as Le Pitture antiche (1680) and Gli Antichi Sepolcri (1727) by G.P. Bellori, both published in Rome, together with the Recueil de peintures antiques trouvées à Rome published by the Comte de Caylus in Paris in 1757 (2nd edn, 1783). All these contain illustrations of similar antique examples, those in the latter volume being coloured; whilst the Specimens of Ancient Decorations from Pompeii published by John Goldicutt in 1825 were also important in the study of antique models from that site.

The principal difficulty with architectural drawings is one of interpretation. The use of yellow as a convention for gold has already been mentioned and is discussed again in Chapter VII, but timber was sometimes rendered in brown when it was intended to be left in its natural state, or simply polished; and it is not always clear when this treatment was intended and when it was actually intended it should be painted brown. Also, with early nineteenth-century drawings it is often impossible to know whether timber or marbled elements on which naturalistic veining is shown were to be executed in the genuine material, and when they were to be imitated in paint. This is, perhaps, less important than it seems, since the tonality of the drawing would be carried through into execution; but much more tricky are those instances where receding plans in a design are rendered in increasingly deeper tints on the drawing in order to express their depth. In 1826, George Smith suggested that this could be done on complete walls where trompe l'oeil panels were to be painted, so that,

'the style [stile] of the panel may be of a similar

\*44 colour as the ground, but worked darker for the purpose of giving the appearance of projection to the panel itself.\*

\*45 Whether three-dimensional panels or other architectural elements were ever 'helped' in this way, as often done today, is, however, questionable. Thus, although in 1787 the coffers in the semi-domes of the apses at either end of the Hall at Osterley were 'minutely pick'd in with three tints of grey',\* on the basis of Adam's drawing for the coffered ceiling of the Eating Room at 20 St. James's Square, London,\* this seems likely to have been intended as a fairly bold colour contrast rather than a subtle playing up of their depth; and it will be argued in Chapter VII that, in at least the majority of cases, uniform colour was used during the eighteenth century, allowing the architecture to read naturally.

#### Pictures

Similar difficulties of interpretation occur in a series of mid-eighteenth-century paintings depicting interiors, most notably examples by Francis Heyman at the National Portrait Gallery, London, and by William Hogarth at the Tate Gallery, London, and National Gallery of Ireland, Dublin, together with a picture by Arthur Devis at the Victoria and Albert Museum, all of which are discussed in Chapter V. In these, the walls are simply rendered in tones of mid-grey, but painting accounts and other documentary evidence have revealed no instances of this colour being used, and a uniform white appears to have been common. It therefore seems likely that such artists toned down the background in these paintings in order to throw the figures in them into relief. Other paintings found useful for study are the oil sketches for ceilings by Thornhill at the Soane Museum and Tate Gallery, together with another at the latter institution by Verrio; whilst information is also to be obtained from careful examination of the well known series of paintings, Marriage à la Mode by Hogarth, at the National Gallery, London. For the early nineteenth century, watercolours of interiors have been found most useful. Of these, the series of perspectives of Soane's schemes for many of his jobs at the Soane Museum are particularly important,

together with the remarkable series of rooms painted by the amateur artist Charlotte Bosanquet in the 1840s which are now at the Ashmolean. A few of these, together with others of interest, were published by John Cornforth in 1978 under the title English Interiors 1790-1848; whilst the exhibition which ran in November and December 1981 at the Galleries of Hazlitt, Gooden & Fox in Bury Street, St. James's, has added further contemporary examples.

#### Other materials

The importance of the technical studies described in Part Three in providing authenticated and dated examples of interior colour schemes cannot be stressed sufficiently. In place of conjecture and uncertainty these have allowed the establishment of a corpus of accurate, detailed information on specific interiors; whilst at the same time inevitably leading to the rejection of much that had been assumed from antique appearance. To these and to all the other sources of evidence reviewed above, should finally be added a host of standard modern architectural works, each generally containing very little directly on colour, but providing comprehensive information of a more general nature. These include many of the splendid series of biographies of architects which have appeared since the last war, together with more general studies such as Sir John Sumner's Architecture in Britain 1530 to 1830 (1953 and later editions); the History of the King's Works (1963-82) edited by Howard Colvin; the latter's Biographical Dictionary of English Architects 1660-1840 (1954) and his more recent Biographical Dictionary of British Architects 1600-1840 (1978); the volumes of the Royal Commission on Historical Monuments (1910 to date); the Survey of London (1900 to date); and the Wren Society series (1924-42). A number of articles in Country Life (saving only their limitations in providing no references to source material) have also been useful, besides the various guidebooks provided by the National Trust, Victoria and Albert Museum, and others responsible for the maintenance and presentation of different buildings. Lastly, mention must be made of the History of the Painter-Stainer's Company by W.A.D. Englefield (1923; 3rd edn, 1950) which reveals much about the organisation of the painting trade in London, to the labours of whose members and provincial colleagues much of the present study is devoted.

P A R T O N E

THE TECHNOLOGY OF HOUSE-PAINTING

## MATERIALS

In general the materials employed in connection with the painter's trade were destined for one of three classes of product: water-based paints, or distempers; oil-based paints; and varnishes. The first of these usually consisted of a white base pigment, such as whiting, mixed with water and a soluble consolidant (commonly animal glue size) which would bind it in position on the finished surface once the water had evaporated. In oil paint, as its name implies, an oil (commonly linseed oil) was substituted for the water, and a white pigment (in this case usually white lead) dispersed in it. Rather than evaporate, the oil would 'dry' and bind the pigment by polymerisation; and to speed this process certain substances called driers could be employed, either in particle form or previously dissolved in the oil. If the paint was too viscous, a thinner (generally oil of turpentine) which would evaporate before polymerisation took place could be added. The basic oil or water-based paint was, as will be appreciated from the base pigments already mentioned, generally white in colour and was subsequently tinted to produce the hue required by the addition of one or more suitable tinting pigments. Varnish, on the other hand, usually started life as a transparent solution of resin in a solvent, but could be coloured, either with pigment to give an opaque film or with soluble dyes to provide a transparent finish.

In this chapter, the materials are considered under various headings, commencing with pigments grouped by colour. In reviewing these it is essential it be borne in mind that these are the raw materials of paint and should not be confused with the colours which resulted from their use forming the subject of Chapter III. Driers and drying oils are next discussed, followed by a group of materials derived from crude turpentine, including the solvent called oil of turpentine and the resin known as 'rosin'. Other solvents used in paint and varnish next receive attention, and after these the resins and other substances used in

varnish. Finally, the sizes and other binders used in distemper are discussed.

Pigments are needed as a basic constituent of paint to provide obliterating power, to give colour, and, in the case of oil paint, to enhance the protective qualities of the oil by providing greater substance and resistance to weather in the polymerised or 'dried' paint film. Although a large number of white, black, or coloured substances exist in nature or can be manufactured, very few are suitable for use as pigments, lacking one or other of the qualities necessary for practical use.

Of prime importance is the inert nature of the pigment. Thus, for paints fulfilling a protective function both externally and in many interior situations, substances appreciably soluble in water cannot be used. Nor should a pigment react with its fellows, other constituents of the paint, the atmosphere, or commonly encountered compounds to which it may be exposed. Pigments should also be light-fast, not fading on exposure, especially to sunlight. Even today it is not possible to meet these apparently simple conditions completely, but much less during the eighteenth century; and of the few dozen substances discussed below, several are notably deficient in one or other of these respects. Patent yellow, for example, discoloured on exposure to atmospheric impurities; orpiment was not compatible with many other pigments; and the organic reds and yellows, the latter needed especially to produce bright, clear, and delicate tints, were generally fugitive, some of them extremely so.

When in use as a pigment, each of the substances discussed has different properties. Where its refractive index is comparable with that of an oil medium the pigment becomes more or less transparent, thus having little or no ability to obliterate the colour of the surface to which the paint is applied, a quality measured today in terms of covering power. These are often known as glazing pigments to distinguish them from those which are opaque in oil and called body pigments; although it is important to realise that the one category merges imperceptibly into the other and many pigments fall between the two extremes of complete opacity on the one hand and total transparency at the other



end of the scale. In effect this means that some white pigments in particular cannot be used in oil, although they are of considerable importance in an aqueous medium. With others the phenomenon may be exploited, especially in such work as graining or marbling in which transparency is required; and for work of this nature, special varieties of some pigments, having greater transparency than those in general use (for example the siennas and umbers amongst the earths or ochres) were particularly selected for employment. Moreover, different pigments, or even different batches of the same pigment, have widely varying powers to tint paints to the desired depth of colour, a quality known as tinting strength or staining power; whilst whites on the other hand are spoken of as having reducing power. This characteristic had, as today, to be balanced against cost, cheaper varieties of the same pigment often being inferior in this respect, so that larger quantities were required to produce the same degree of colouration.

Price was also often determined by other factors, reflecting the expense and rarity of the substance composing a pigment, the distance from which it had to be brought, or the cost of its production and the degree of preparation required to fit it for use. Some earths in particular needed refinement to free them from large or gritty particles, a process generally carried out during the eighteenth century by washing or levigation, in which the crude earth, once ground to powder, would be agitated in water, and then allowed to stand. The coarser matter would settle out first, allowing its desired separation from the more finely divided particles. Besides any question of their tinting strength, cheaper pigments were often dull in tone compared with more expensive alternatives, and even different batches of the same pigment could differ in colour or quality. This was particularly the case where, as with the organic pigments, the raw materials needed for their manufacture were expensive, and successive degrees of extraction could make the most economical use of them. Often too, certain otherwise unsatisfactory, but cheap substances could be used to make more expensive pigments go further without unduly affecting the properties of the dried paint

film. These are known as extenders, and were widely used with white lead for undercoats and other less critical applications, but the ill defined boundary between such legitimate use and adulteration was notorious. Some idea of the wide variations in price between pigments, and hence the enormous constraints cost could impose on the choice of paint colour may be obtained from the table drawn up from items contained in one of the early nineteenth-century annual stock-taking lists of the London colourman and manufacturer Lewis Berger.\* This shows clearly not only the differences which might be expected between different qualities of the same pigment, but also the enormous range between the valuations of certain earth pigments at ½d. or less per pound, and those of the vastly more expensive organic pigments, whose price was often such as to preclude their use for the ordinary purposes of house-painting.

\*Table (i)

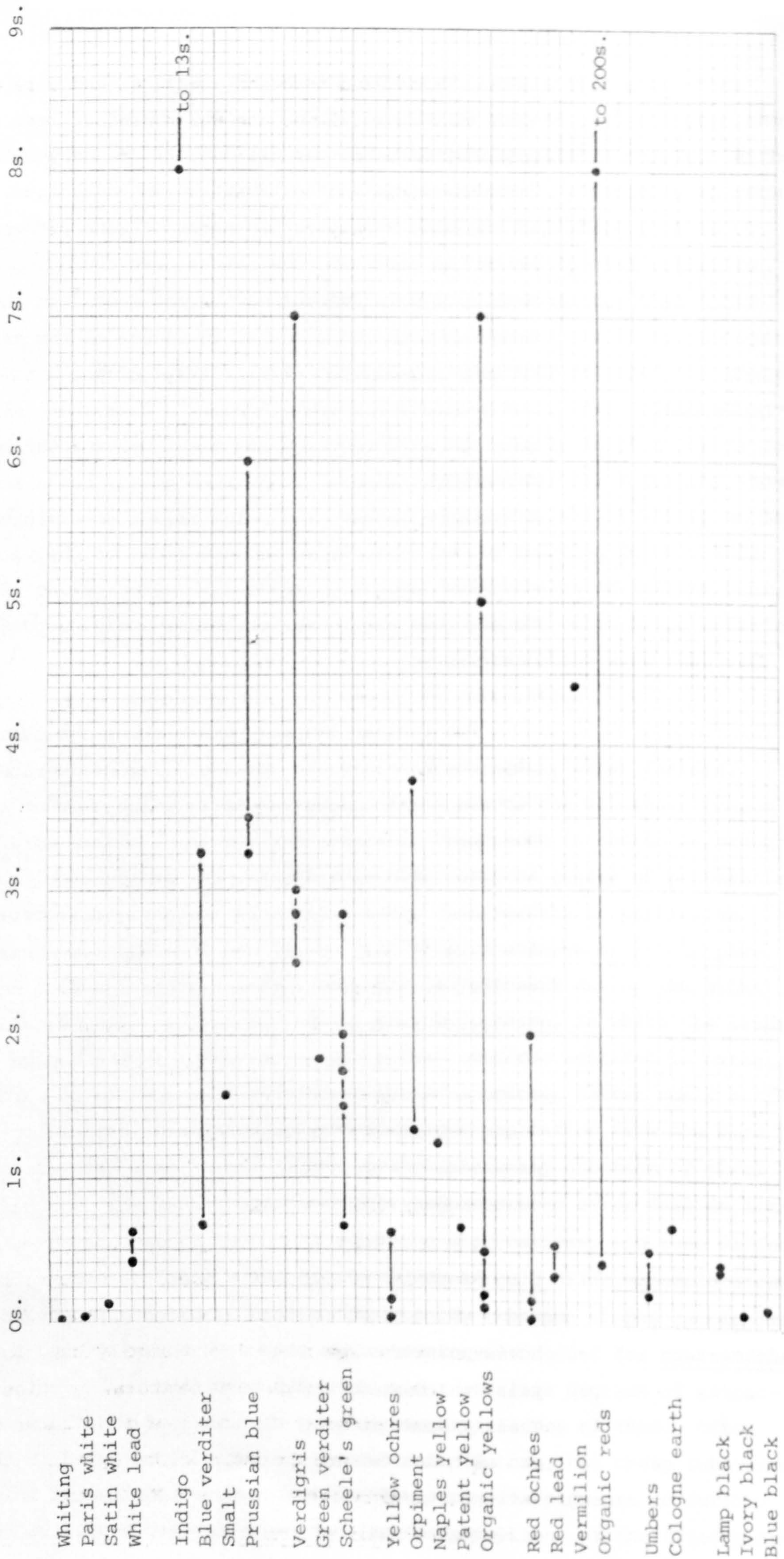
Two further general points about the nature of certain pigments have also to be made. The deliberate addition of certain metallic substances to oils in order to increase the speed at which they dry is discussed more fully below in connection with driers, but it is useful to point out here that certain pigments too have this property. These are said to 'dry well', and include, for example, red lead, verdigris, and umber, whilst others seem to retard the rate of drying. This, it may be noted, does not appear to have been a major constraint in the choice of paint colour. Also, the highly toxic nature of certain eighteenth-century pigments may be mentioned, especially that of the arsenical greens and of white lead, both of which were a contemporary cause of concern.

White pigments,  
extenders, and  
adulterants

As will be appreciated from the observations already made, white pigments were of primary importance to the house-painter since they were normally used to form a base paint which would later be tinted to the colour desired. Their properties were therefore of particular significance, and although during the period considered in this study a fair number of substances found employment in paints of different types, many were far too expensive for use in

Table (i) Prices per pound at which Lewis Berger valued selected pigments in his stock on 1st January 1806

(Berger MSS., stock 1805-6). Dots show prices of individual items.



house-painting, and three only were of major importance in this field: chalk, lime, and white lead. Only the last was suitable for use in oil; and the first two, apart from widespread employment of chalk as an adulterant for white lead, were used only in an aqueous 'distemper' medium.

#### CHALK, MARL, AND CALCAREOUS CLAY

Chalk, which occurs naturally in the south-east of England and in northern France, consists of practically pure calcium carbonate, although a small proportion of silica, sometimes about 3%, may be present.\* When crushed it is used as a pigment known generally today as 'whiting'. Some white earths, however, may contain a mixture of chalk with china clay, and, being made up from various proportions of calcium carbonate and aluminium silicate, form marls or calcareous clays intermediate between the two.\* Following crushing and removal of coarse particles by levigation, the earth is dried by heat, which must be carefully controlled in order to prevent the formation of calcium oxide. This would soon absorb atmospheric moisture to form calcium hydroxide, making the pigment alkaline and thus incompatible with alkali-reactive tinting pigments such as Prussian blue, verdigris, chrome yellow, or emerald green.\* White earth pigments belonging to the whole of this group are more or less transparent when ground into an oil medium, and for this reason were used chiefly in distemper, or as a cheap extender or adulterant for white lead. They were also used as a base for the preparation of some of the red and yellow organic pigments discussed below.

As the common base for distemper, 'Whiting' was naturally included amongst the six pigments the plasterers of the City of London secured a right to use by Act of Parliament in 1603.\* It seems likely whiting was also generally known during the seventeenth and succeeding centuries as 'Spanish white', although some writers, especially those concerned with pigments for the use of artists, seem to have applied the term to satin white (q.v.). The early nineteenth-century Swiss author P.F. Tingry, whose book, Traité théoretique et pratique sur l'art de faire et

appliquer les vernis of 1803 was published in English the following year as The Painter and Varnisher's Guide (a second edition followed in 1816), suggested on the other hand that it should be applied only to pure clay.\*

\*5 Nevertheless, when William Butcher brought out his considerably revised edition of John Smith's seventeenth-century work on house-painting, The Art of Painting (1676, 2nd edn 1687), which he first re-published in 1821 under the title Smith's Art of House-Painting, he included in the patchily updated text an additional note that 'what

\*6 they [colourmen] call SPANISH... is merely common whiting'.\* The mid-seventeenth-century architect Sir Roger Pratt enthused over the whiteness and smoothness obtained by the use of the best Spanish white for the whitening of ceilings;\*

\*7 whilst at the end of the century William Leyburn illustrated its use as an extender in a formula for an oil primer in his book Architectonice: or, A Compendium of the Art of Building (1700).\*

\*8 This was based on red ochre and red lead, and, being for external use, employment of a special variety of chalk would not have been necessary. Likewise, in his Directions for House and Ship Painting (1812) the American author Hezekiah Reynolds used Spanish white as an extender for white lead in undercoats and a grey finish for exterior application.\*

\*9

'Paris white'

Another term commonly encountered is 'Paris white', which is mentioned in a number of later eighteenth- and early nineteenth-century documents. This appears to have been regarded as a higher grade of pigment than ordinary whiting, the London pigment manufacturer and wholesaler Lewis Berger, for instance, listing it in his early nineteenth-century annual stock lists at 5s. per cwt. against 1s. 6d. for the latter;\*

\*10 but it is not clear to what extent its higher value was due to the nature of the raw earth or to the care taken in its preparation. Certainly at the end of the nineteenth century George H. Hurst indicated in his Painters' Colours, Oils, and Varnishes (first published in 1892) that it received more

\*11 thorough grinding than the ordinary grades of whiting,\* but it seems likely that by then the name had lost any association with a specific source of raw material, and in

this century it has come to be applied simply to the  
\*12 finest grades of pigment.\* Undoubtedly, however, the  
term must originally have come from material obtained  
from the vicinity of Paris, notably from Bougival and  
'Bougival white' Meudon. The former lies about eight statute miles from  
the centre of Paris in the vicinity of Marly on the west  
side of the city. In L'Art du peintre, doreur, vernis-  
seur, the first edition of which appeared in 1772, Jean  
Félix Watin described 'le blanc de Bougival, autrement  
blanc d'Espagne' as 'une terre, or marne blanche', com-  
menting in some detail on its industrial preparation by  
washing and levigation. The best qualities were, he said,  
sold 'en petit batons', but the coarser settlings were  
\*13 allowed to form lumps of a pound to twenty ounces in  
weight.\* (The 'Old Paris pound' was divided into 16  
ounces and was equivalent in weight to 7,561 English Troy  
\*14 grains, the English Avoirdupois pound being equivalent to  
7,000 of the latter.)\* On the other hand, Tingry, who  
described Bougival white as a 'very fine marly earth',  
simply mentioned that it was sold in the form of oblong  
cakes. It was, he said, a better pigment for house-  
painting than chalk, which, he observed, constituted  
\*15 nearly a third of its composition.\* However, at Meudon,  
'Meudon white' a village lying about eight miles south-east of Bougival,  
Watin indicated that ordinary 'blanc de craie' was obtained.  
Such pigments were, he noted, employed for whitening ceil-  
ings, observing that they were harder than Bougival white  
\*16 which they otherwise resembled.\* It is curious, therefore,  
that J. Rondelet gave the prices of 'Bougival ou Meudon'  
whites as 34c. per pound against 'craie' at 15c. in the  
list of prices in the fifth volume of his Traité théoret-  
\*17 ique et pratique de l'art de bâtir (1812-n.d.);\* but per-  
haps he was confusing Meudon with Moudon white which is  
mentioned below. Alternatively it is possible that methods  
of refinement comparable with those employed at Bougival  
had been introduced at Meudon by the 1800s, since in the  
mid-nineteenth century the town was described as possess-  
\*18 ing extensive 'manufacturies of... whiting'.\* Probably,  
therefore, it was the Bougival white which was originally  
known as Paris white, and the price difference between it  
and ordinary chalk obviously reflected a significantly

better product.

Other French  
sources

In his Architectural Dictionary (1819), Peter Nicholson referred to 'French white' as a pigment, although he was probably confusing this term (only otherwise encountered as the colour name listed in Chapter III below) with Paris white.\* It may nevertheless be useful to review other French sources of white pigments briefly, especially since, despite its everyday nature and ubiquitous working in the south and east of England (areas which Tingry's later editor mentioned),\* documentary references to specific British locations from which writing was extracted during the period covered by the present study seem elusive. The late seventeenth-century writer A.C. D'Aviler referred in his Cours d'architecture (1691) to the use of 'blanc de Rouen' in size-bound distemper, and listed it amongst those pigments in ordinary use for house-painting;\* and another reference to 'blanc de Rouen ou blanc de craye' as the pigment ordinarily used in that medium is to be found in L'Architecture pratique published by a contemporary architect Pierre Bullet in the same year.\* Just over a century later, Tingry, who seems to have researched his data on white earths with some care, described Rouen white as a marl consisting of clay and calcium carbonate.\* Another source of white in northern France was Troyes, which lies ninety miles east-south-east from Paris in the departement of Aube. Tingry described 'white of Troyes' from the vicinity as a 'white chalk', and the English editor of the third London edition of his book (published as The Painter's & Colourman's Complete Guide in 1830) indicated its nature similarly as 'whiting'.\* The former continued by giving details of its preparation by washing and levigation to free it from gritty impurities, and his account is of particular interest since he also described the forms in which the pigment was marketed, either in large square cakes weighing 10 or 12 pounds, in rolls and cylinders of 16 to 20 ounces, or cut into long square sticks to resemble tobacco-pipe clay.\* In this connection it is interesting to note that Berger's early nineteenth-century stocks of the latter seem to have been hemispherical, comprising '255 Doz. Pipe Clay in ½ Balls'.\*

Besides these sources, Watin indicated that pigment was also obtained from Burgundy, the province lying to the south of Champagne (in which Troyes is situated);\* and in addition Tingry described the preparation of chalk at Briançon, which lies near the Italian border about forty-five miles east-south-east of Grenoble in the south.\* He also mentioned 'White of Moudon or Morat' from the town known today as Murten, which lies in his native Switzerland in the Pays-de-Vaud, about twenty miles west of Berne. This was, he said, a pure clay, and thus in his opinion 'a real Spanish white'.\*

Artists' varieties

'Pearl white'  
'Egg-shell white'

\*30

\*31

\*32

\*33

Prices of chalk pigments

\*34

In The Handmaid to the Arts (first published in 1758), Robert Dossie gave descriptions of the preparation of a number of white pigments used by artists. These included 'Troy white or Spanish white' which were in effect satin white (q.v.) together with two fine qualities of calcium carbonate. 'Pearl white' was, he indicated, made by powdering pearl or oystershell, and was used in miniature painting;\* and 'egg-shell white', for water-colour, was made from crushed and levigated egg-shells.\* Both pigments were listed by Thomas Martin in The Circle of the Mechanical Arts (1813) and by Peter Nicholson in The New Practical Builder (1823-5);\* but the origin of both lists was Dossie's Handmaid, which was copied quite uncritically, and these two latter references should, therefore, be treated as quite unreliable in connection with house-painting. Indeed, a third early nineteenth-century author, Nathaniel Whittock, explicitly observed in his Decorative Painters' and Glaziers' Guide (1827) that pearl, oyster-shell, and egg-shell whites were used only by portrait and historical painters.\* Occasionally, however, oyster shells were burnt to produce lime (q.v.) and could perhaps have been used for house-painting in this way.

A bill amongst the papers at Boughton House, Northamptonshire, includes an item of 1s. paid for 12 lb. of 'Spanish whiting' supplied on 11th October 1705 (a price equivalent to 9s. 4d. per cwt.);\* whilst in 1803 the architect John Soane paid 3d. per dozen for a total of 24 dozen cakes of 'fine Whiting'. Another item was for '18<sup>lb</sup>



\*35 fine Whiting', which cost 6d. (the equivalent of 3s. 1d. per cwt.);\* and, assuming the price per pound was the same, each cake would thus have weighed  $\frac{1}{4}$  lb. Lewis Berger's stock of whiting rose from 40 cwt. on 1st January 1802 to 95 cwt. in 1806, and by 1st January 1810 stood at 121 $\frac{1}{2}$  cwt., the valuations being made at the rate of 1s. 6d. per cwt. on the first two occasions and 1s. 9d. on the last. His stock of Paris white in 1802 and 1806 was, by comparison, 90 $\frac{1}{2}$  cwt. and just over 184 $\frac{1}{2}$  cwt. respectively, in both cases valued at 5s. per cwt.;

\*36 whilst elsewhere, records recently published relating to the decoration of two houses in Doncaster between 1798 and 1802 show that various amounts of Paris white were charged for retail at a rate of 1s. per stone, the equivalent of 8s. per cwt.\*

\*37

#### GYPSUM

Gypsum, or calcium sulphate, which can be used as a pigment in a similar way to chalk, occurs freely in Europe and the New World. John Hill, the mid-eighteenth-century translator of the work on geology by the classical writer Theophrastus, noted the occurrence of gypsum as 'Parget, or Plaister-stone' in Derbyshire and Yorkshire, and at Montmartre on the north side of Paris, adding that it was burnt to form plaster of Paris.\* Hurst indicated that a temperature of 300<sup>o</sup>F. is needed to effect this, and named Chellaston and the neighbouring village of Aston upon Trent as the two principal sources in Derbyshire;\* whilst in the early nineteenth century there were gypsum pits at Elvaston, a third village in the vicinity.\* Hurst also indicated that large quantities of Gypsum were obtained from Newark-on-Trent, Nottinghamshire; Fauld, Staffordshire; and from Netherfield in Sussex, adding that the pigment, prepared from it by grinding, was completely neutral in its properties and could be mixed with all the others then in use without affecting them in any way.\* The use of gypsum (which he described as 'a natural combination resulting from the union of oil of vitriol (sulphuric acid) and lime (the base of calcareous earth)') was mentioned by Tingry, who, possibly reflecting Swiss rather than British

\*38

\*39

\*40

\*41

practice, said that it was extremely valuable for white-washing and painting in distemper. It could, he noted, produce a more delicate white than chalk, although he observed interestingly that when used in the preparation of paper hangings it was prejudicial to Prussian blue.\*

\*42 To what extent it was used in England it is impossible to judge on the evidence presently available; but although it was probably on the strength of Tingry's observations that Whittock included it amongst the 'preparations of clay or

\*43 chalk' which were used in distemper,\* he was generally a fairly critical writer who seems to have had a practical background, and its free occurrence in this country should have allowed it to be easily available.

#### LIME

Chalk and limestones may be burnt to produce quicklime (calcium oxide), and this, when slaked with water, becomes slaked lime (calcium hydroxide). On exposure to the air, which contains carbon dioxide, the latter gradually reverts to calcium carbonate, this chemical process forming the basis of the setting mechanism of lime mortar. Several varieties of lime were commercially available in the eighteenth century, since certain limestones contain a proportion of clay, producing when burnt a natural cement which would set under water and whose quick set was valuable in masonry. To achieve complete slaking and a smooth consistency for plastering, on the other hand, lime had to be matured wet after slaking; and for this purpose it was therefore necessary to use lime burnt from chalk which was pure and would not set during the process. In his City and Countrey Purchaser, and Builder's Dictionary (1703), Richard Neve mentioned the employment in London of such chalk lime from

\*44 Kent and Sussex;\* but stone lime was brought from further afield, notably from the River Tamar between Devon and Cornwall via the Port of Plymouth, and Lewis Berger was using 'Plymouth Stone Lime' during the early nineteenth century in connection with the manufacture of blue verditer

\*45 (q.v.).\* Possibly this was similar to the 'rock lime' which the London colourman T.H. Vanherman recommended for making satin white (q.v.) in his Painter's Cabinet, and Colourman's

Repository (1828). This, he observed, was available at  
\*46 Nine Elms Wharf, Lambeth, London;\* and it may therefore  
also be identical with the 'Vauxhall stone lime' mentioned  
\*47 by Phillips in connection with limewash.\* In addition,  
Neve observed that 'the Shells of Fish, as of Cockles,  
\*48 Oysters, &c. are good to burn for Lime',\* and although  
no reference to the use of such lime for house-painting  
in London has been encountered, oyster shells were being  
burnt for lime at Taunton, Massachusetts, in America in  
\*49 the early nineteenth century;\* whilst a notice appeared  
in the New York Gazette on 3rd April 1780 advertising  
\*50 'oyster-shell white for white washing',\* and it seems  
most likely that this referred to lime made in this way  
rather than to crushed shells.

As a material ubiquitously available on the building  
site, lime was used extensively for the simple whitening  
of surfaces, and a number of references to 'lime whitening'  
will be found in the section of Chapter II below which  
deals with water-based paints. Tingry's editor indeed,  
seems to have preferred lime to chalk for this purpose,  
describing it as excellent for whitewashing ceilings.  
That from the burning of hard stone had, he said, a better  
colour than chalk lime, and produced a brighter white than  
chalk; but, he added, since lime was scarce in London, the  
\*51 latter was here more generally employed.\* By this he seems  
to have meant it was stone lime which was at a premium,  
since in Crosby's Builder's New Price-book the surveyor  
John Phillips gave the rate for 'New work, whiten only'  
as 2d. per square yard, when 'Lime whitening once over' was  
only 1½d.; but for the same 'with the Vauxhall stone lime'  
\*52 the price was 3½d.\* Lime was also essential in formulae  
for casein-bound paints, where its alkaline nature and  
subsequent carbonation to a neutral compound were exploited.  
These too are discussed in Chapter II together with the use  
of lime in solution as lime-water for the preliminary seal-  
ing of plasterwork.

SATIN WHITE

In the late nineteenth century, Hurst described satin white as essentially a mixture of calcium sulphate and aluminium hydroxide prepared by the mixture of slaked lime in water with a solution of aluminium sulphate;\* but during the period covered by the present study it seems clear that alum (potassium aluminium sulphate) was used rather than the latter. This would have produced a similar pigment, but the product would require careful washing to free it from the highly alkaline potassium hydroxide arising as a by-product. Comparable pigments were being prepared for watercolourists by the opening years of the seventeenth century, and at least one formula, that published by Henry Peacham in his Art of Drawing with the Pen (1606), calls for the lime to be burnt from chalk with which a third part of alum had already been allowed to react in aqueous solution.\* Confusingly, he referred to the resulting pigment as 'Spanish white'; and in his 'Catalogue of Simple and Mixt Colours', published in the Philosophical Transactions of the Royal Society in 1686, Richard Waller also indicated that his sample of 'Spanish white' was made in this way.\* As already mentioned, Dossie too provided a related method for the production of 'Troy or Spanish white' by the mixture of chalk and a solution of alum,\* which was picked up by Martin and Nicholson (their 'Troy White')\* and by Whittock (his 'Spanish white')\*. Whilst it is possible, therefore, that for fine-art purposes these terms may have been applied to satin white, it seems unlikely that for house-painting they were applied to anything other than chalk (q.v.).

Although no English reference to the use of satin white in the ordinary decoration of buildings during the seventeenth or eighteenth centuries has been encountered, the late seventeenth-century French writer D'Aviler observed:

'Le Blanc qu'on nomme des Carmes se fait sur des murs bien secs avec de la chaux de Senlis éteinte, où l'en mêle de l'alun: on prend le dessus qui est le plus pur dont on met 5. ou 6. couches'.\*

The slightly earlier author André Félibien had also described the preparation of blanc des Carmes from Senlis lime in his book Des Principes de l'architecture, de la sculpture, de la peinture (1676), remarking specifically that when used on stone or plaster it did not go yellow.\*

\*60 Undoubtedly, however, its cost (discussed below) would have militated against its common use; and it is clear that later its major role lay in the specialised business of wallpaper printing. It was also, as Heaton indicates, particularly useful as a base for lake pigments manufactured for that purpose,\* and several formulae for satin

\*61 yellow (q.v.) prepared in this way are to be found amongst those used by Lewis Berger in the early nineteenth century. Vanherman was probably exceptional, therefore, in using it as a constituent of his 'Impenetrable or Anti-corrosive' and 'Aromatic' paints (the latter for interior, the former for exterior use), and, indeed, described it as 'the satin white of the paper stainers'. To prepare it, he directed, 8 lb. of rock lime were slaked with a volume of water sufficient to make 6 gallons of strained liquid. A similar weight of alum was dissolved in a further 6 gallons of water, added to the first, and the whole stirred for half an hour. After three hours had elapsed, it was stirred again and allowed to stand overnight, when it would be

\*62 ready for use.\* His formula was repeated by Tingry's editor, who also mentioned the alkaline nature of the product.\*

\*63

Several sets of detailed instructions for the preparation of satin white are contained in the records of Lewis Berger, the earliest being dated 1815, although he had used it in the preparation of satin yellow in 1809. In this and succeeding formulae prior to 1837 a small quantity of orchill was also added, presumably with the intention of giving the pigment a bluish-white colour; and his formulae are also interesting in showing the care taken to wash away the alkaline by-product.\*

\*64 In 1815 the pigment cost 8s. per-cwt. to produce, and in 1831 6s., suggesting it retailed at about 12s. or 15s.; and on 1st January 1806 and 1810 Berger valued his stock at a rate of 14s. per cwt. It seems likely, therefore, that the figure of 84s. in his 1802 stock-list was an error, although he then had only

\*65 just over 3½ cwt. in stock against nearly 35½ cwt. in 1806 and nearly 23 cwt in 1810.\*

#### LEAD WHITE

White lead

None of the white pigments so far described is of use in oil, since, their refractive indices being comparable with that of such a medium, they become transparent and lack body. White lead, however, is an almost ideal pigment in oil, being opaque, compatible with most other pigments, and drying well. Its formation of an organic compound with drying oils, enhancing their protective qualities is well known; and in The Art of Painting in Oyl (1676) John Smith described it as the only white used in oil, a statement which, subject to minor exceptions and admixture of the pigment with extenders and adulterants, remained true throughout the period under consideration.\* It does, however, tend to blacken slightly in sulphurous atmospheres, and is toxic, presenting when used carelessly a particular health hazard to those in daily contact with it;\* whilst, used in exterior work it tends to produce a paint film subject to surface powdering, or 'chalking'. Although principally suited to use in oil, white lead can be used in an aqueous medium; but it has little advantage for this purpose, and is very expensive compared with chalk. Nevertheless, it does seem to have been used in this way on occasion, and instances are described in Chapter II.

\*66

\*67

Manufacture of white lead, which consists of basic lead carbonate, was known in classical antiquity, and described by both Pliny and Vitruvius.\* In 1678, Sir Philiberto Vernatti published an account of its manufacture in the Philosophical Transactions of the Royal Society:

\*68

'First Pigs of clean and soft Lead are cast into thin Plates a yard long, six inches broad, and to the thickness of the back of a Knife. These are rolled, with some Art, round; but so as the Surfaces no where meet to touch: for where they do no Ceruss grows.

'Thus roll'd, they are put each in a Pot just capable

to hold one, upheld by a little Bar from the bottom, that it come not to touch the Vinegar, which is put into each Pot, to effect the conversion.

'Next a square Bed is made up of new Horse-dung, so big as to hold 20 Pots abreast, and so make up the number of 400 in one Bed.

'Then each Pot is covered with a Plate of Lead; and lastly all with Boards, as close as conveniently can be. This repeated four times, makes one heap, so called, containing 1600 Pots.

'After three Weeks the Pots are taken up, the Plates unrolled, laid upon a Board, and beaten with Battle-dores till all the Flakes come off. Which, if good, prove thick, hard and weighty: if otherwise, fuffy & light; or sometimes black and burn'd, if the Dung prove not well order'd: and sometimes there will be none.

'From the Beating-Table the Flakes are carried to the Mill; and with Water ground between Millstones, until they be brought to almost an impalpable fineness.

After which it is moulded into smaller parcels, and exposed to the Sun to dry till it be hard and so fit for use.'\*

\*69

\*70

This method, known as the 'stack' or 'Dutch' process,\* remained very similar in England until comparatively recently, except that spent tanner's-bark later became substituted for the horse-dung, a patent being awarded to

\*71

Richard Fishwick for this improvement in 1787;\* but it should be noted that many published descriptions were inaccurate, including those of the normally reliable authors Hill, Dossie, and Tingry. They all indicated that the lead was brought into direct contact with the acetic acid; but the product of the ensuing reaction would then

\*72

have been lead acetate rather than lead carbonate.\*

'London white lead' Tingry's editor expressed a preference for 'London

\*73 white lead',\* and at least since the seventeenth century  
the pigment had indeed been manufactured in and around  
the capital. In 1679, for example, there was a manufactory  
\*74 in Hatton Garden,\* and in The London Tradesman (1747)  
Robert Campbell mentioned its production at Whitechapel  
\*75 and in other London suburbs;\* whilst later trade cards  
survive in the Castle Museum, York, in connection with  
\*76 works at Tooley Street, London, and also at Derby.\* Dur-  
ing the seventeenth century, Venice seems to have been a  
notable source, and was referred to by John Smith, who  
observed significantly that the greatest quantities had  
\*77 formerly been made there.\* This seems to be confirmed by  
Watin, who, writing almost a century later, remarked that  
(apart from a particularly finely prepared variety of the  
pigment) the best came from Venice, but added that other-  
wise the English and Dutch had taken over this branch of  
\*78 commerce.\* During the early nineteenth century, a clear  
preference was expressed for use in the best work of white  
lead several years old. Nicholson observed in his New  
Practical Builder that the pigment improved with keeping,  
\*79 and 'should be two or three years old for the best white,\*  
and in The Mechanic's Companion (1825) called for 'good  
\*80 old white lead' to be used in finishing coats.\*

'Ceruse'

White lead was also known as ceruse, the name used by  
Vernatti, although this seems to have changed its connota-  
tion in succeeding years. In the first edition of his  
book, John Smith indicated that it was a more refined var-  
iety of the common white lead which was held in particularly  
high regard by artists, and in the second edition that  
\*81 ceruse was 'the most pure and clean part'.\* Dossie and  
Nicholson, however, appear to have treated the terms as  
\*82 synonymous;\* and Tingry's editor simply observed that ceruse  
\*83 was the name formerly applied to white lead.\* Moreover,  
definite deterioration in the quality of the pigment to  
which the term was applied by the mid-eighteenth century  
in France is revealed by Watin, who distinguished between  
céruse, and blanc de plomb 'que d'autres appellent céruse  
pure'. The first was, he indicated, white lead mixed with  
chalk or marl, either in equal parts, or in a ratio of six  
parts of white lead to ten of marl, adding that céruse,



'se distingue du blanc de plomb par sa couleur, qui est moins blanche, & par son poids, qui, à volume égal, est moins lourd'. Céruse de Rome was, however, he said,  
\*84 beautiful, heavy, and expensive.\* Butcher's description is also indicative that the name had come to be applied to an adulterated pigment, since, editing John Smith's seventeenth-century account of ceruse, he described it firstly as 'a very beautiful white, but much dearer than white-lead', before adding his own observation that it was  
\*85 'not of so good a body'.\*

Undoubtedly therefore, as Nicholson and Watin explicitly observed, white lead was frequently adulterated.\*  
\*86 Dossie mentioned the use of chalk or powdered talc (q.v.) for the purpose;\* and Butcher indicated that 'some colourmen, for the sake of gain, are apt to adulterate it with what they call SPANISH, which is merely common whiting'. This treatment, he explained 'renders the colour harsh in using, and greatly reduces the beauty of the white';\*  
\*88 whilst Vanherman, who referred to the employment of 'Paris white, and other cheap articles' for adulteration, also warned against the practice. He mentioned in particular the discolouration to which such pigment was subject, and suggested a test by which sophistication could be detected.\*  
\*89 On the other hand, whiting was often deliberately used as an extender, especially in undercoats in the way suggested by Reynolds.\*  
\*90 Later, in place of chalk, barytes (q.v.) was extensively used; and Andrew Ure in A Dictionary of Arts, Manufactures, and Mines (1839) gave a list showing that the pigments known in France and Germany as Venice white, Hamburg white, and Dutch white contained respectively  
\*91 1, 2, and 3 parts of barytes to each part of white lead.\*

'Flake white'

In contrast to 'ceruse', flake white seems always to have been a term reserved for a high grade of white lead. John Stalker and George Parker in A Treatise of Japanning and Varnishing (1688) for example, quoted its price ground in walnut oil as twice that of ordinary white lead in the  
\*92 same medium;\* but although John Smith was uncertain both of its origin and of the reason it was 'by some accounted the best white of all others', mentioning that it was said

\*93 to be found 'only under the Lead of some very old Build-  
ings',\* Watin was quite unequivocal in his description of  
blanc de plomb en écailles as simply the product of the  
\*94 stack process.\* Dossie, however, had described 'White  
flake' as being of Italian origin, and made by the corro-  
sion of lead by means of the 'pressings of the grape',  
adding that it surpassed all ceruse or white lead made in  
\*95 England, which was much cheaper.\* As usual his descrip-  
tion was echoed by Martin and Nicholson, whilst Whittock  
simply remarked that flake white was manufactured in a  
\*96 similar way to white lead, but using other acids.\* Flake  
white appears amongst other pigments which Lewis Berger  
was offering for sale in several of his letters dated  
between 1780 and 1788, its quoted prices being about double  
those of ordinary white lead; although the gap had closed  
slightly by the first decade of the nineteenth century in  
the valuations (q.v. below) made as part of his annual  
stocktakings. Nevertheless, it seems to have retained its  
superior status for many years to come, since Butcher  
observed that it was a very pure white 'used for particular  
\*97 purposes, being much higher in price';\* whilst Tingry's  
editor remarked that it appeared to be white lead purified  
\*98 by washing and levigation, and formed into drops.\*  
These\* were made by passing the levigated slurry through  
a funnel and laying the shell-like drops on a piece of  
chalk to dry.

\*Fig. 1

'Nottingham lead'

Nottingham white was also considered a superior  
quality of white lead, and was especially recommended by  
early nineteenth-century writers for use in finishing  
coats, particularly those which were 'flatted', a technique  
described in Chapter II. The earliest reference to it so  
far encountered appears to be an entry in the accounts for  
painting at Egremont House, London dated 11th April 1764  
\*99 for 'Nottingham mixt & a Gally pot & tools';\* and the pig-  
ment is mentioned in the archives of Lewis Berger in a  
copy letter of 1786, whilst another of 1788 quotes a price  
for its supply at about fifty per cent above that of  
ordinary white lead. The pigment appears also in his  
early nineteenth-century stock-lists at a similar differ-  
ential as may be seen from the analysis of prices below.

The author of the Practical Treatise on Painting in Oil-  
Colours (1795) distinguished Nottingham white from ordinary  
white lead by saying that alegar was used in its manufact-  
ure in place of ordinary vinegar. This, he thought, con-  
tained less 'vinous acid' than the latter, which, he  
\*100 believed, possessed the 'virtue and spirit of the hop',\*  
but the colourman George Field, in his work Chromatography  
(1835), simply observed that it was prepared from flake  
\*101 white.\* John Pincot recommended use of Nottingham white  
'for finishing the inside of best rooms' in his Treatise  
on the Practical Part of Coach and House Painting of about  
\*102 1811;\* and items 'flated dead white with the best Notting-  
ham lead' appear in the 1810 and 1813 editions of Taylor's  
\*103 Builders Price-Book.\* Phillips provided similar entries  
in the 1812 and 1821 editions of Crosby's Builders' New  
\*104 Price Book;\* Martin referred to Nottingham white lead as  
\*105 the most esteemed for flatting;\* Nicholson repeated this,  
\*106 and adverted to the use of 'fine old Nottingham lead';\*  
whilst Butcher too specified its employment in this con-  
\*107 nection.\*

Other methods of  
manufacture

During the second half of the eighteenth century,  
attempts were made to develop methods other than the stack  
process for the production of white lead. In 1749 Sir James  
Creed patented a forerunner of the modern chamber process  
in which the lead is corroded in a specially built chamber  
into which currents of carbon dioxide, acetic acid vapour,  
air, and steam are passed;\* whilst Watin referred to 'la  
\*108 céruse de Crems' from the small town of that name in Lower  
'Crems or Cremnitz  
white!'. \*109 Austria, which was, he said, an expensive pigment.\* Field  
mentioned that 'Crems or Cremnitz' white was a lead carbon-  
\*110 ate imported from Vienna in 'cakes of a cubical form';\*  
but Cremnitz is, of course, a town in Hungary, and for some  
reason the two seem to have become confused. At the end of  
the century, Hurst described the method adopted for the  
manufacture of 'Kremnitz white' in Germany by the exposure  
of trays containing a mixture of litharge (lead oxide) and  
either acetic acid or lead acetate to carbon dioxide, a  
process parallel to that of Creed;\* but it is not clear  
\*111 that this method was in use at Crems during the eighteenth  
century, especially since, writing in 1839, Ure had observed

\*112 that the works were then abandoned,\* and Tingry had provided analyses showing that 'Cremnitz white' could contain a mixture of substances. Some specimens contained bismuth oxide (bismuth white, q.v.), others white lead, and some were mixed with a great deal of chalk; whilst he himself suggested its preparation from tin nitrate, zinc oxide (zinc white, q.v.), and white chalk, but such a pigment

\*113 was, he added, too expensive for house-painting.\* It is therefore difficult to assess the use or nature of pigments sold under this name, but it is clear there was a continuing search for alternatives to white lead produced by the stack process.

In 1797 the Earl of Dundonald secured a patent for making white lead by treating litharge with salt and water, washing the resulting lead oxychloride, and boiling it with potassium carbonate to form white lead, which was washed

\*114 and dried for use.\* Another method, first patented in England by Edward Noble in 1808, seems to have been of French origin, and consisted in the precipitation of white lead by passing carbon dioxide through a solution of a

\*115 basic lead salt.\* Noble used lead acetate for this, and Tingry's editor mentioned a patent granted in 1821 to

\*116 John Sadler for a similar process.\* Vanherman also referred to two comparable methods of preparing white lead, one closely related to the above, the other transforming lead

\*117 oxychloride in water by the action of carbon dioxide;\* whilst in 1837 Button and Dyar secured a patent for the same process (later described by Ure and Hurst) using a

\*118 solution of basic lead nitrate.\* There is little information to suggest how important these processes were in terms of house-painting, but it seems unlikely that they were of great significance, since Ure quite specifically referred

\*119 to the stack process as that used in this country.\* Other contemporary developments seem also to have been less than

\*120 totally successful,\* and as late as 1940, in the revised, second edition of his Outlines of Paint Technology first published in 1928, Noël Heaton remarked that although countless processes designed to supersede the stack process had been patented and put into operation, for the most part they had failed to become established, either on account of

Table (ii)

Prices of white lead given by William Salmon and John Phillips 1734-1821.

	<u>Salmon (1734)</u> <sup>1</sup>	<u>Phillips (1804)</u> <sup>2</sup>	<u>Phillips (1812)</u> <sup>3</sup>	<u>Phillips (1821)</u> <sup>4</sup>
		<u>1760-90</u>	<u>1790-1803</u>	
Best white lead ground in oil.	36s.	38s.	60s.	76s.
Second primer ground in oil.	36s.	36s. 6d.	58s.	66s.
First primer.	36s.	30s.	38s.	42s.

References

- 1 p.57
- 2 p.130
- 3 pp.210-11
- 4 pp.168-9

\*121 their expense or the inferiority of their product.\* Over the last few decades, however, the stack process has been superseded, at least in England, by other methods of manufacture; and modern white lead differs from the earlier product in some respects, principally in its smaller particle size, which affects its handling characteristics.

Prices

\*122 In 1703 Neve remarked that white lead for painting was commonly sold in London at 2½d. or 3d. per pound dry, or at 5d. per pound ready ground in oil.\* The latter is identical with the rate charged in a bill amongst papers at Boughton House, Northamptonshire, for a barrel containing nearly 3 cwt. of 'fine white lead Gro[und]' supplied in 1705.\*

\*123 During the late seventeenth century, the pigment was also available ground in walnut oil, and Stalker and Parker indicated:

\*124 'Flake white, finely ground in Nut-oyl, is sold at 2s. the pound. White lead, ground in the same oyl, 1s. per pound.'\*

\*125 The price of 5d. per pound for the ordinary product ground in linseed oil seems to have fallen to 4d. by 1734, the date at which Willam Salmon published the retail price list of the Strand colourman Alexander Emerton in his Palladio Londinensis. 'Best White Lead ground in Oil' was 4d. per pound, but could also be purchased by the hundredweight, in which case it was priced at 36s.\* Salmon's different categories of white lead paste seem to have formed the basis of those in Crosby's Builder's New Price-book first published by John Phillips in the early years of the nineteenth century. This contained a summary of prices charged between 1760 and 1790 in addition to those current from 1790 to 1803; and it is instructive to set these out in tabulated form, with the addition of those in the revised 1812 and 1821 editions, in order to show the movements in the value of money occasioned by the war with France since these also affected the other painting materials described below.\*

\*Table (ii)

These prices appear to accord well with examples noted

Table (iii) Prices of white lead from figures contained in Berger archives 1788-1810.

	<u>Letter book</u> <sup>1</sup> <u>20 June 1788</u>	<u>Stock 1801-2</u> <sup>2</sup> <u>1 January 1802</u>	<u>Stock 1805-6</u> <sup>3</sup> <u>1 January 1806</u>	<u>Stock 1809-10</u> <sup>4</sup> <u>1 January 1810</u>
<u>Ground in oil</u>				
Nottingham lead	-	70s. (4½ cwt.)	-	60s. (5 cwt.)
'Genuine' white lead	40s. <sup>5</sup>	46s. <sup>6</sup> (43½ cwt.)	58s. (68 cwt.)	52s. (16 cwt.)
'Second' white lead	36s.	42s. (13¾ cwt.)	55s. (24¾ cwt.)	49s. (12¾ cwt.)
'Common' white lead	-	38s. (3½ cwt.)	52s. & 50s. <sup>7</sup> (9½ cwt.)	46s. (¾ cwt.)
<u>Dry pigment</u>				
Flake white	75s. <sup>8</sup>	70s. (1 cwt.)	82s. (2 cwt.)	76s. (3 cwt.)
Nottingham white	56s.	50s. (4½ cwt.)	-	-
White lead	36s.	42s. (32 cwt.)	57s. & 54s. (29½ cwt.)	46s. & 45s. (53 cwt.)

Notes and references

- 1 p.289.
  - 2 pp.48, 54, 55, 56, 58.
  - 3 pp.10, 11, 25, 30, 31.
  - 4 pp.8, 13, 14, 20.
  - 5 'Fine' white lead
  - 6 'Gro.<sup>d</sup> Lead'.
  - 7 'Gro.<sup>d</sup> White Lead'.
  - 8 Elsewhere, letters dated 14 June and 20 August 1780 contain prices for flake white of 65s. and 75s. (Letter book, pp. 29, 30.)
- N.B. Weights in stock given to nearest ¼ cwt.

in painting accounts. For example, 40 lb. of 'prepar'd White Lead' was supplied to William Blaithwaite, Esq. at Dyrham Park, Gloucestershire (now Avon), on 7th May 1781 at a rate of 4½d. per pound, which is equivalent to 42s. per cwt.;

\*126 a total of 393 lb. of white lead was supplied at Tredegar House, Newport, Monmouthshire (now Gwent), at various dates in 1792 and 1793 at a rate of 6d. per pound, which is equivalent to 56s. per cwt.;

\*127 whilst Soane settled an account for the supply of painting materials in 1803, which contained items for 2 cwt. 1 qr. of 'Genuine Gro<sup>d</sup> White Lead' at 56s. per cwt. provided on 5th March, and two further items for very similar quantities of 'White Lead' supplied on 9th May and 11th July of that year at a rate of 60s. per cwt.\* Nevertheless, the rates given by

\*128 Phillips (especially in his second list)\* may be less

\*129 reliable than they seem, since, although at the bottom end of the price scale they compare well with those in the records of Lewis Berger, at the upper end they considerably exceed those at which he valued his stock. Berger's rates are shown in tabulated form, together with the quantities which were of course also recorded in the manuscripts.\*

\*Table (iii) By 1828 it seems likely that prices had fallen back further, since Vanherman gave the cost of dry white lead as 34s. per cwt.\*

\*130

#### ZINC WHITE

Although zinc white (zinc oxide) had been known for many years, it was not until the closing decades of the eighteenth century that serious attempts were made to use it as a non-toxic substitute for white lead. In a paper dated 1782, Guyton de Morveau considered all the then known white pigments and suggested zinc white was the best alternative to white lead. It was, he noted, being sold at 6fr. per pound.\*

\*131 In 1794 and 1796 John Atkinson, a colour-maker from the Liverpool area, took out patents for its preparation, calling it mineral white;

\*132 and Vanherman provided a description of its manufacture by the melting of zinc in a large, deep crucible inclined at an angle of forty-five degrees. The secret of success was the nice control of the process to produce a reasonable yield of

'Mineral white'



\*133 oxide (which was raked off from the surface of the molten metal) without discolouration.\*

\*134 Although the author of the Practical Treatise said it was possible that zinc white might be procured in sufficient quantities to supply the place of ceruse, even for house-painting,\* no evidence has been found to suggest that it came into general use for this purpose until the mid-nineteenth century. In the 4th edition of his book, Watin referred to de Morveau's paper, but observed that zinc white was too expensive to be employed in decorating, and he had never known it used.\*

\*135 Moreover, no mention of the pigment is to be found in the early nineteenth-century papers among the Berger archives,\* and Vanherman's reference to it is also indicative that zinc white was not in use in England even by the late 1820s. He said it was more expensive than white lead, but, he felt, might compete with it if the duty then charged on it was removed, adding that the principal objection to its use was that it was 'hungry', and required a great deal of oil to make it sufficiently fluid to work well. Nevertheless, he suggested, this could be overcome by thinning it, once ground into oil, with copal, mastic, or turpentine varnish and oil of turpentine; and expressed the hope that a proper zinc paint

\*136 manufactory might be started.\*

\*137

\*138 That the pigment did come into use during the following thirty years is evident from T.L. Donaldson's Handbook of Specifications of about 1859, in which he quoted a French specification calling for the employment of zinc to the exclusion of white lead, and in another specified it for use in white-painted rooms with gas lights.\* Presumably white lead tended to blacken very quickly in such interiors, and the introduction of gas for illumination may thus have given some impetus to the development of zinc oxide in England. Nevertheless, it would seem that even by that date it was still treated as a special pigment, and not one expected to be in normal use.

## BARYTES AND BARIUM CARBONATE

Barium sulphate occurs naturally as barytes or 'heavy spar', and is found in the counties of Derbyshire, Cornwall, Devonshire, Cumberland, and Shropshire, the Malehurst mines in the latter county being particularly mentioned by Heaton.\* Its occurrence is often closely associated with that of lead ore, and it was known to the miners of this mineral as cawk.\* Barytes seems to have come into use as an artists' water-colour towards the end of the eighteenth century, and was called permanent white or constant white;\* whilst Vanherman described it as 'the only constant white in water colours'.\* In oil it is transparent, but became used as an extender or adulterant for white lead and other pigments. Lewis Berger was experimenting with barytes, which appears subsequently as an extender in a number of pigments for which formulations are given amongst his papers, from at least 1816, and he noted a method for the artificial preparation of barium sulphate from barium carbonate in 1824;\* whilst Tingry's editor referred to William Duesbury's patent of 1825 for the purification of native barium sulphate.\*

\*139  
\*140  
'Permanent white'  
'Constant white' \*141  
\*142  
\*143  
\*144

Although today barytes is distinguished from witherite, the naturally occurring form of barium carbonate, it appears the former name could be applied to both during the early nineteenth century. Barium carbonate can be employed in much the same way as barytes, although it is softer, less dense, and has a higher oil absorption, and has been used to a small extent in this century for water-paints.\* Vanherman observed that there were two kinds of 'the Barytes, or ponderous spar - the sulphate and carbonate', indicating that the latter only was to be used, since, he believed, 'the sulphuric acid of the first acts on gums and mucilage, and changes the whiteness'. In fact, the sulphate is almost completely inert as a pigment; whilst, since the carbonate is decomposed by acids, as Vanherman himself warned, the latter compound is highly toxic. Nevertheless, he described a method for its manufacture by grinding and washing, and mentioned its use as a 'water-white for ceilings', recalling that he had purchased 20

\*145

\*146 tons in 1814 from a lead mine near Minsterley, about  
twelve miles west of Shrewsbury, at £10 per ton, although  
he felt the current price might be much lower.\* This rate  
works out at approximately double that of Paris white (q.  
v.) and it seems unlikely therefore, that unless it had  
become very much cheaper barium carbonate would have been  
widely used in distemper. Tingry's editor, who quoted  
extensively from Vanherman's book, also mentioned barium  
carbonate, or 'Cocks comb spar', referring to that from  
Murton in Cumberland besides the former's Shropshire  
\*147 source.\*

#### TALC

\*148 The use of 'talc' as an adulterant for white lead  
was mentioned by Dossie.\* Although today the term is  
applied to a form of hydrated magnesium silicate, it is  
possible Dossie may have had a form of gypsum (calcium  
sulphate) in mind, since Félibien had indicated that this  
\*149 was its composition.\*

#### CROTIA

Vanherman used sifted road-dust as a pigment in his  
'Impenetrable or Anti-Corrosive Paint' for exterior use.  
The sweepings of a road made with flints, clinkers, gran-  
ite, or any stony substance were collected and passed  
through a 'forty-five hole wire sieve' for use. He gave  
the name Crotia to the product, which cost 1s. 6d. per  
\*150 cwt.\* 'Road Sand', together with fish-oil, another sub-  
stance with which Vanherman was concerned, were mentioned  
in derogatory terms by Pincot, who seems to have been a  
\*151 business rival of the former;\* and both substances were  
discussed by Martin and the author of The Painter's and  
Varnisher's Pocket Manual (1825); whilst Tingry's editor  
\*152 also referred to Vanherman's road-dust.\*

#### BONE WHITE

Calcined hartshorn or 'bone white' was recommended by  
Dossie as a water-colour pigment, and was included in the

\*153 lists published by Martin and Nicholson, who plagiarised  
Dossie's work quite uncritically.\* Clearly, it was a  
pigment never intended for house-painting, and indeed  
Whittock indicated that it was used only by historical  
\*154 and portrait painters.\*

#### BISMUTH WHITE

\*155 Although Martin and Nicholson included bismuth white  
in their pigment lists,\* it seems most unlikely to have  
been used for house-painting; and, as Tingry's editor  
(who described bismuth oxide or magistery of bismuth from  
Cornwall as pearl white) pointed out, was used chiefly as  
\*156 a cosmetic.\*

#### Blue pigments

During the second half of the seventeenth century,  
the only blue pigment which was more or less satisfactory  
for house painting purposes in an oil medium was indigo,  
although the colour it would produce was dull in tone.  
For a brighter hue; either azurite or its manufactured  
equivalent, blue verditer, had to be pressed into service.  
These were not particularly well suited to the medium,  
however, although excellent for use in distemper; whilst  
smalt possessed considerable limitations on the way in  
which it could be used, and ultramarine, although almost  
perfect technically, was far too expensive. This problem  
was fortunately solved by the discovery of Prussian blue  
during the first quarter of the eighteenth century, and,  
apart from a slight tendency to become greenish in colour,  
the preparation of blues in oil presented little diffi-  
culty from then on; whilst, at the very end of the period  
under consideration, Prussian blue was supplemented by  
cobalt blue and artificial ultramarine.

#### INDIGO

Indigo is a naturally occurring dye prepared from  
leaves of plants belonging to the genus Indigofera.  
Seventeenth-century sources of that used in England in-  
cluded India, and (via Spain) Guatemala on the Central  
American mainland; although, by the early nineteenth century

indigo from the East Indies (trade with which was dominated by the Dutch) seems also to have been common. As will be seen from the analysis of prices below, there are many references to 'East India Indigo' in the Berger archives; and Tingry listed indigo from the East Indies together with dye from the West Indies, although, he observed, that from Guatemala was the best and most esteemed.\*

\*157 His later editor too mentioned 'Flora or Guatemala' dye together with 'Carolina' indigo, and gave an analysis of a specimen of 'Caraca Flora' (presumably from Caracas, now in Venezuela, South America. This, he indicated however, contained only 54½ per cent of indigo, against 75 per cent in some specimens from the East Indies

\*158 and 79½ per cent in samples from Calcutta.\* Quality was, therefore, highly variable, and, quite apart from the care taken in extraction of the dye (which was effected by soaking the leaves in water, beating them to a pulp, and allowing the indigo to settle out), this could depend on which

\*159 from a series of harvests the dye came.\* John Smith gave a brief description of dye extraction,\* and Tingry observed

\*160 that it was imported in flat, square pieces which were not very hard, floated on water, and were inflammable. According to him, that called 'cupreous indigo', which left a green, bronze-like colour when rubbed on the fingernail,

\*161 was the best.\* It was necessary to reduce the cakes of dye to powder form for use as a pigment, and the author of The Painter's, Gilder's, and Varnisher's Manual [c. 1830]

\*162 illustrated two mills for the purpose.\*

Unlike many other natural dye-stuffs, indigo prepared in this way can be used directly as a pigment, and was mentioned by D'Aviler as one of those used for painting grotesques on a prepared white field.\*

\*163 It is serviceable in both oil and distemper, and John Smith indicated its colour became more beautiful in the former the longer it was ground.\*

\*164 Although a vegetable dye which, the late nineteenth-century colour chemist A.H. Church indicated in his book The Chemistry of Paints and Painting (first published in 1890), loses from one third to one half of its intensity when exposed to sun-light for five years,\*

\*165 it seems to have been considered sufficiently light-fast,

at least during the seventeenth century, to have been used to mix a bluish grey for exterior use. John Smith mentioned that it was much used with white for the 'last colours of Windows, Doors, Pales, Posts, Rails, Pallisadoes, &c.'; but, he added, since it was rather expensive 'Blew Balls' were substituted for it by vulgar painters. The latter he dismissed as 'not so good a Colour neither for beauty nor lasting', and it is possible, therefore, that they were made from logwood, which is discussed in connection with organic red pigments (q.v.), or orchill (q.v.) rather than indigo.\*

\*166 The colour produced by the mixture of indigo with white lead was, he indicated, known as lead colour.\*

\*167 Although Watin too suggested that the pigment was used with white in oil, and employed it for example in gris argentin,\* its use in this medium would no doubt have declined rapidly following the introduction of Prussian blue during the first quarter of the eighteenth century; and, whilst Butcher, Nicholson, and the author of the Painter's... Pocket Manual all gave recipes for lead colour in which indigo was used, these probably represent an uncritically accepted survival from Smith's seventeenth-century text.\*

\*169 Indeed, although Butcher on the basis of this also included Smith's description of the pigment in his general discussion of those in use, in common with other contemporary authors who referred to lead colour, he proposed elsewhere in his text its mixture by the combination of white with lamp black, tending to confirm indigo had passed out of normal use in oil.\*

\*170

In distemper, on the other hand, the pigment seems to have had continued employment throughout the period under consideration, no doubt owing to the instability of Prussian blue with alkalis such as that found in fresh lime plaster. Bullet, for example, used it with Rouen white to make gris perle;\* Watin employed it in mixtures for gris argentin and olive distemper;\* a small quantity was included together with other distemper pigments and materials in an account of 1802 for painting a house in Doncaster;\* and Nicholson recommended its use for 'inferior greys' in distemper.\* By this date, however, it is likely that it was often 'extended' with the rather cheaper

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Prussian blue; and a formula contained in the archives of Lewis Berger for 'Indigo wash' gives details of a preparation containing indigo, Prussian blue, and barytes, the resulting combination costing 25s. per cwt. to produce.\*

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The indigo purchased in connection with the Doncaster house mentioned immediately above was priced at a rate equivalent to 8s. per lb., but, as might be surmised from the wide range of qualities mentioned above, considerable variations are met with in the price of the dye, quite apart from the marked difference between the 'Spanish' varieties from Central America and those from the East Indies. On 1st January 1806, for example, Lewis Berger had a small stock of 3 lb. of the former valued at 13s. per lb., and 4½ lb. of the East Indian variety at 8s. per lb.; the price difference no doubt reflecting Tingry's assertion mentioned above that Guatemala indigo was more esteemed. By 1810, Berger's stock had risen to a total of 112½ lb. 'Spanish Indigo' at 7s. 10d. per lb., whilst overall he had 1,147 lb. 'East India Indigo' at prices ranging from 3s. 2d. to 4s. 8d. per lb.\* As in the case of white lead, however, the prices given by Phillips were rather higher, and he suggested that Spanish indigo would cost 14s. or 19s. per pound, against 'Indigo blue, common sort' at 9s. 6d. In addition he quoted a price for 'Rock Indigo will stand well' at 18s. or 24s. 4d., the latter term, Dr. Harley has indicated, being a corruption of 'rich indigo'.\*

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\*177

#### ORCHILL AND LITMUS

Orchill, which was used by Lewis Berger in his formula for satin white (q.v.), is a dye of fugitive character yielded by various lichens of the Roccella genus, notably R. fuciformis, native in the British Isles to Wales, Scotland, and the north of England. Its extraction by grinding the lichen with urine and quicklime (the resulting chemical reaction producing ammonia) was known well before the period here considered,\* and was described by Tingry, who referred to preparation of the dye in his day on a large scale in London, Paris, and Lyons from material imported from the Canary and Cape de Verd Islands.\* In addition, Ure noted

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\*180 a variety from the Auvergne.\* The dye is red in acid conditions and blue in alkali, and Tingry's editor observed that when, a few days after treatment began, the dye was purplish red in colour it was known as 'archil'; but that  
\*181 when it eventually turned blue it was then called 'litmus'.\* In the context of the alkaline satin white, therefore, it would have been employed by Berger as a blue to heighten the apparent cleanliness of his white; and in 1802 he had  
\*182 stocks of just over 11½ cwt. valued at 38s. per cwt.\* Otherwise, no other mention of the dye for purposes of interior decoration has been encountered, although it is interesting to note that in The Evolution of the English House (1898), S.O. Addy referred to the then surviving and supposedly old-established practice of employing orchill in  
\*183 exterior colour-washes in the north of England.\*

#### AZURITE

#### 'Blue bice'

During the seventeenth century a pigment known as blue bice, made by crushing and levigating the mineral azurite (a naturally occurring form of basic copper carbonate), was in use. The main source of supply seems to have been Germany, although it is possible that some may have been of Central American origin, and Hill observed that the mineral  
\*184 occurs in the British Isles.\* By the second half of the seventeenth century, an artificial variety of blue copper carbonate known as blue verditer was also being prepared, and Rosamond Harley indicates that the natural pigment fell into disuse by artists towards 1700, although its employment was revived during the nineteenth century. During the eighteenth century, however, the term blue bice became applied to verditer and other pigments; but Dr. Harley is firmly of the opinion that during the seventeenth century  
\*185 it was applied exclusively to pigment prepared from azurite.\*

A sample taken from the sixteenth-century ceiling of Wolsey's Closet at Hampton Court, Middlesex, has revealed  
\*186 that azurite was used for its blue ground;\* but documentary evidence for the later use of it in house-painting is scarce. The only English reference noted is that of John Smith, who described it as having the best body of all the



bright blues, but indicated it was the palest in colour. It was, he observed, inclined to be sandy, and required good grinding on a very hard stone.\* Stalker and Parker gave its price as 4d. or 6d. per ounce,\* showing that it was extremely costly compared with white lead (q.v.). In France, D'Aviler listed 'cendre bleüe' as one of the blue pigments used for painting grotesques and ornaments on a white ground;\* but the French applied this term equally to natural and artificial varieties of copper carbonate, and although Watin described the origin of cendre bleue as a blue stone found in the copper mines of Poland and the Auvergne, it seems likely much of that used in France was the artificial pigment of British manufacture and his definition was accordingly archaic.\* The most likely explanation for this is that, as Dr. Harley has pointed out, the method of manufacture for blue verditer was regarded as an English speciality and was not understood in France during the eighteenth century.\* Indeed, the formula that Watin gave for it was that for the obsolete blue frit described by Vitruvius, which, although relying on the presence of copper for its colour, was a completely different substance.\*

It is therefore difficult to draw direct general conclusions about the use of azurite for house-painting in England, but in view of its cost and the observations made in Chapter IV below concerning English baroque taste in colour, it seems unlikely to have been used for anything other than limited areas or decorative elements such as clock-faces or grotesques during the late seventeenth century, either in oil or distemper. There is, moreover, no reason to suppose that its use in house-painting did not decline at the same time as its employment in fine art, and that having had limited application after 1660, by about 1700 it was of negligible importance.

#### MANUFACTURED COPPER BLUES.

##### Blue verditer

Although other varieties of artificial copper blue are described in earlier literature, the only type which appears from documentary sources to have been employed for house-

painting in England during the majority of the period under discussion was that produced as a by-product of silver refining and known as blue verditer. This name was later applied to related, but different, copper blues; but in its original form the pigment was chemically a basic copper carbonate, and may thus be described as an artificial variety of azurite. Its use seems to have been well established by the second half of the seventeenth century, and it was described by John Smith, who characterised it as less satisfactory than 'blue bice' (azurite), having no body in oil, a sandy texture, poor colour, and a tendency to turn green. He recommended it, however, as making a good green when mixed with yellow.\*

\*193

#### Refiners verditer

The process of manufacture carried out by the silver refiners was described in the Philosophical Transactions by Dr. Christopher Merrit in 1678. Crude silver, which contained copper, was dissolved in nitric acid, when any gold impurity, being insoluble in the acid, settled out, leaving a solution which was a mixture of silver and copper nitrates. After this liquid had been decanted from the gold, copper plates were suspended in it, and the silver in turn allowed to precipitate leaving a solution of copper nitrate. This was then poured onto chalk (calcium carbonate), 100 lb. of which were employed at a time; and, when the blue colour of the solution paled, the liquor was poured off and replaced by a further quantity, the process being repeated until all the chalk had been converted to verditer, which was then dried ready for sale.\*

\*194

The hue of copper carbonate can vary from quite a good blue, only slightly more greenish than azurite, to a green having a distinctly bluish cast. Green verditer is discussed below and may be made by the same process as the blue, although much more exacting conditions are required to produce the latter; and during the seventeenth century the verditer makers seemed to be at a loss to understand why a green product often resulted. For this, it was said,

'they can assign no reason, nor can they hit on a certain rule to make constantly their Verditer of a fair

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Blew, to their great disprofit, the Blew being of manifold greater value than the Green'.\*

How far this apparent vagueness was a blind to protect what was a valuable trade secret it is difficult to say, but it has recently been shown that the technique for producing the blue lay in accurate control of the concentration of the copper nitrate solution, its temperature, and in frequent stirring. It seems likely that on account of the second of these the pigment could only be made during the colder months of the year, and another subtlety lay in increasing the size of the pigment particles and hence the depth of colour by including pigment already made in a new batch of chalk and copper nitrate.\* As late as 1834

\*196

'Refiners Verditer' was being made in a similar way by Lewis Berger, although he employed 'Pinnings Dutch Lead' in place of chalk, and also added 'Bleach' at the end, once the verditer had been made and washed.\* The nature of the first is obscure, although it may have been barium carbonate,\* but the composition of the latter is unknown. By this date, cheaper methods of making both blue and green verditer had been introduced, and it seems likely that the term 'refiners verditer' (employed, for example, by Lewis Berger from at least 1802, and also by Nicholson and Vanherman)\* was used to distinguish the product of the older process. Its higher cost will be shown below, and its continued manufacture despite this suggests that it must have enjoyed considerable advantages. These were, no doubt, primarily a much greater stability of colour in the blue variety, since pigment produced by the new methods seems, as will be shown, to have been liable to turn green extremely quickly; and it is therefore most probable that from the early nineteenth century 'refiners verditer' was particularly applied to the blue product of the old method. This seems to be borne out by Nicholson's reference to its employment in mixing grey distemper,\* whilst an early nineteenth-century patent calls for the use of 'refiners blue verditer'.\*

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Manufacture of blue verditer by precipitation

Copper carbonate may also be produced by precipitation from a solution of a copper salt such as copper sulphate by the addition of potassium carbonate, the principal

constituent of potash and of pearl or Russia ash (potash subjected to red heat in order to increase the percentage of carbonate).\*

\*202 Pigments made using these substances, however, would invariably have contained a proportion of copper hydroxide (from the potassium hydroxide in the potash) and seem to have suffered from two defects, a comparatively pale colour and a tendency to turn green. Such pigments were known by the mid-eighteenth century, and a variety of treatments to deepen the colour and achieve better stability by alterations to a greater or lesser degree in the copper compounds present were developed. Dossie, for example, suggested the preparation of a 'dark' variety of 'verditer', which he listed amongst the blue pigments, by the addition of starch to a solution of copper nitrate prior to precipitation by means of pearl ash;\*

\*203 but the product of direct precipitation is often green in colour (invariably so where the solutions are hot when mixed) and by the late eighteenth century, methods had been evolved in France for the further treatment of the precipitate in order to enhance its blueness. In 1792, Pelletier published a paper entitled 'Examens chimiques des cendres bleues' in which he explained that the pigment, which he had been told was a product of silver refining, was supplied to France by the English, although an inferior variety was made at Paris by precipitation from copper sulphate solution with potash, and treatment of the precipitate with lime and ammonium chloride to make it blue. He put forward an improved method of preparation, precipitating copper hydroxide directly from a solution of copper nitrate using lime, filtering off the green precipitate, and grinding it with quicklime to make it blue.\*

\*204 Further improvements were suggested by the French industrial chemist J.A.C. Chaptal during the opening decade of the nineteenth century, in particular the substitution of lime-water for the ground lime;\*

\*205 and similar methods were published by

\*206 Tingry, Colin Mackenzie, and Ure.\* Related formulae appear in the early nineteenth-century documents of Lewis Berger's company, in particular a series for the manufacture of 'Blue Verditer' commencing in 1816. The 1818 formulation, for example, was as follows:

'Solution of Vitriol to Strike with. Take a pail full of Roman Vitriol [copper sulphate] which is about 36 lb. & add it to 9 pails of water when dissolved & cold it will produce 9 pails of the Solution.

'10 lb. Plymouth Stone Lime [a supplementary note added later suggests the substitution of 12 lb. chalk lime].

'2 lb. Com<sup>n</sup> Salt [sodium chloride]

'200 pails of water used over again

'ab.<sup>t</sup> 7 & ½ pails of Sol<sup>n</sup> Vitriol

'Levigate the Lime & Salt together & wash into the Water then strike with the Sol<sup>n</sup> of Vitriol - when dry shoot it off the Racks into a tub of water'.\*

\*207

Experiment suggests that the nature of the lime used was of great importance to the quality of the pigment colour, and a batch made to the above formula using chemically pure calcium hydroxide was considerably inferior to one made with commercial building lime. Berger's 1831 product was similar to that of 1818, and cost 45s. per cwt. to produce dry, or 36s. 6d. damp, the yield being 2 cwt. dry or 2½ cwt. wet. A note adds that the solutions were to be quite cold for use; and from 1836 it appears that an addition of 1 lb. tartaric acid was made to each hundred-weight of completed verditer where a deeper tint was required, although this was omitted after 1839.\* Ure gave a comparable formula used in France for the production of cendres bleues en pâte in which calcium chloride was used in place of common salt and the product was further treated with lime paste, pearl ash, ammonium chloride, and copper sulphate. When dried the pigment was known as cendres bleues en pierre.\* Such copper hydroxide and cuprammonium pigments formed a group known by the end of the nineteenth century as Bremen blue; and were described by Hurst as having a pale greenish blue colour; but although, he

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\*209

'Bremen blue'

indicated, they had at one time been made on a large scale, by the time he was writing they had, he noted, been replaced by artificial ultramarine and cobalt blue.\*

\*210  
'Azure blue'

Besides the 'blue verditer' whose formula has been given above, from at least 1817 Lewis Berger was manufacturing a pigment which he called 'azure blue'. This seems to have been closer to the original verditer in its chemical composition. The method of manufacture was again based on the simple precipitation of copper carbonate from a solution of copper sulphate, this time in the presence of a small proportion of cream of tartar (tartaric acid), followed by a final treatment with lime-water. The process is given as follows in the 1831 formula book:

'72 lb Roman Vitriol dissolved in 18 Pails (ab.<sup>t</sup> 3 Galls each) boiling Water. 50 lb Pearl Ash dissolved in 9 Pails (ab.<sup>t</sup> 3 Gall.<sup>s</sup> each) boiling Water.

'Let down 1/3 of Roman Vitriol into the Tub & add to it 6 lb Cream Tartar. Then strike the Ash upon it till it ceases to effervesce make two more strikings of the Roman adding to each of them as before 6 lb Cream Tartar -

'Let it stand till next day when fill up with Lime Water (without drawing off upper liquor as formerly did) once - fill [filter] out thro' a 68 Sieve - laid on [the chalkstones used for drying] in thin Cakes & dried in moderate heat'.

Its production cost was 1s. 2d. per lb., and the formula should be compared with that for Berger's 'French green' discussed in the section dealing with green verditer below.\*

\*211  
Although not explicitly stated in the manuscripts, experiment indicates that to obtain a blue pigment the solutions again had to be mixed cold; but a blue batch made in accordance with the above directions proved quite unstable when made up as a distemper colour, and became green within twelve months of exposure to daylight in a well-lit room, although the half of the specimen kept covered by black

paper retained its blue colour. Colour stability, therefore, obviously remained a problem.

#### Prices

These developments in the production of copper pigments had an almost immediate effect on prices at the end of the eighteenth century. In the letter books of Lewis Berger, quotations of 2s. to 2s. 6d. per lb. are given between 1778 and 1788 for the supply of 'common' and 'fine' blue verditer, with a price of 4s. 6d. for 'finest blue verditer' in 1788 (against those for green verditer at 1s. 3d. or 2s.). These are more or less comparable with the prices for 'refiners verditer' given in his annual stock-lists during the first decade of the nineteenth century; and on 1st January 1802, for example, Berger had a stock of  $\frac{1}{2}$  cwt. 'Finest' refiners verditer valued at 4s. per lb. together with just over 1 cwt. 'Refiners Verditer (Secc<sup>d</sup>)' at 2s. 9d., whilst in 1806 and 1810 his stock of refiners verditer stood respectively at nearly  $4\frac{1}{2}$  cwt. at 3s. 3d. per lb., and nearly  $4\frac{1}{2}$  cwt. at 3s.\* Against these, the prices given for simple 'Blue Verditer' in his stock lists at the same period are extremely low, and, since these are broadly comparable with those given in connection with the production formulae quoted above, it is probably safe to assume they represent pigment made by precipitation. By way of example, on 1st January 1802 Berger's stock of 'Blue verditer' was nearly  $20\frac{1}{2}$  cwt. valued at 9d. per lb.; in 1806 this had risen to just over  $61\frac{1}{2}$  cwt. at 8d.; whilst in 1810 he had a total of just over  $21\frac{1}{2}$  cwt. valued at  $8\frac{1}{2}$ d. per lb.\* In view of this difference in price, it must be significant that refiners verditer continued to be made by the old method at least until the 1830s, and it seems clear that it possessed considerable advantages over the cheaper product. As already mentioned, experiments suggest that the latter, besides being pale in colour, was far less stable, turning green even in distemper fairly rapidly; and it seems, therefore, that it was in this respect that the older method of manufacture was superior.

Employment of blue verditer. Although best used as a distemper pigment, blue verditer was employed for the 'fair blew in Oylle' used in the Dining Chamber at Ham House, Surrey, in 1638;\* and it will

be remembered that, writing during the second half of the seventeenth century, John Smith included blue verditer amongst those used in oil, noting that, whilst it had disadvantages in several respects, it was useful for mixing greens.\* There can, however, be little doubt that once Prussian blue (q.v.) became available at the beginning of the eighteenth century it would commonly have superseded blue verditer for this purpose; but there is, nevertheless, a certain amount of evidence that it continued to be used in oil, at least for special purposes, despite Watin's assertion that it was of no use in that medium although much used in distemper.\* Tingry too stated categorically that it was not used in oil since it went dark,\* a defect arising from the similarity of its refractive index to that of oil, which, as already mentioned, was noted by John Smith over a century before. Blue verditer was, however, used on its own in a linseed oil medium for picking out the enrichments in the Saloon at the Casino, Marino, in the late 1760s;\* and during the early nineteenth century Vanherman included a small quantity of refiners verditer in one of his greens for commercial production and use in oil.\* A similar use in connection with Scheele's green is illustrated in a patent of slightly earlier date,\* and Butcher suggested its use as an alternative to Prussian blue in mixing French grey.\* However, although W.R. Laxton included 'blue verditter' amongst his list of oil-paint colours in The Improved Builder's Price Book,\* it is possible that he was using the pigment name to describe a paint colour made from other ingredients, probably to match that of the dry pigment, a practice apparent from a reference by Phillips in his list of painters' colours to blue verditer 'by mixture'.\* The author of The Painter's... Pocket Manual remarked, like Watin, that the pigment was only proper for distemper, adding that it could not be used in oil except with a considerable admixture of white;\* but that it was used in this way seems implied by Whittock's remark that, to become opaque, it had to be mixed with white lead,\* and Vanherman described it as best ground with the oil as and where required since it was apt to 'fatten' on keeping once ground.\* Altogether, although it is certain that it can never have been a really satisfactory



pigment for the direct production of blue paint in oil for application to large areas, it does seem that it may have enjoyed limited use in house-painting for the preparation of greens in this medium, for picking out, and also, just possibly, for the mixing of greys.

As a distemper pigment, however, there is no doubt that blue verditers were extensively employed, and in an aqueous medium were capable of developing the intense colour displayed by many wallpapers of the period, unaffected by the yellowing effect of oil. The author of the Practical Treatise, indeed, observed that refiners verditer, which he described as blue, was consumed principally by the 'paper stainers'.\* Pincot, for example, retailed a 'blue verditter' water colour, which he recommended for ceilings;\* whilst Nicholson suggested the preparation of 'fine' greys in distemper by means of white with refiners verditer.\* Moreover, although green verditer seems a natural choice where a finish of that colour was required, Watin, in describing mixtures for green distemper to be varnished, suggested the use of cendres bleues with cérouse and stil de grain (an organic yellow pigment, q.v.) rather than the employment of Prussian blue, which, he indicated, produced a duller, less intense colour, and also used cendres bleues in mixing vert d'eau in distemper.\*

#### SMALT

The crushed blue glass known as smalt was used widely in painting from at least the sixteenth century. It was manufactured from zaffre, which was described by Tingry's later editor as crude cobalt ore roasted with about twice its weight of powdered flints, although Ure, in his slightly later description, substituted two or three parts of sand for the latter.\* Sixteenth- and seventeenth-century methods of smalt manufacture are discussed by Dr. Harley, and later processes by Hurst,\* but although accounts of the production of the blue glass itself vary in detail, the general principle was to roast silica, either in the form of flints or sand, with potash and zaffre in more or less equal parts. The blue glass was then crushed for use, but

suffered from two major disadvantages. In the first place, if finely ground to reduce its grittiness the colour paled; and in the second, its refractive index being akin to that of an oil medium, the pigment was without body. Thus John Smith and Watin both described it as 'blackening' in oil, whilst its staining power was not high enough to permit the addition of a body white to overcome this whilst still producing a blue of any depth.\*  
\*233 For this reason two grades of fineness were evolved, each used in a different way.

To achieve the deepest colour the coarser variety, known as 'strewing smalt' (referred to by Watin as azur à poudrer) was employed. John Smith's book contains a whole chapter on the method of its use, from which the following extract is taken:

'Smalt being a Colour that gives its greatest Lustre by the way of strowing only, I shall lay down the true method of performing this work: First temper up White-Lead pretty stiff with good clear drying Oyl; let it be as stiff as it well can be to spend well from the Pencil, with this white Colour cover over the Superficies of the work you intend to strow with Smalt; and if it be the Margent of a Dial whose Figures are already Gilt with Gold, let every part between the Figures, and where there is no Gold laid on, be done over, and be very exact in the work, for the Smalt takes no where but on this new and moist ground; then take Smalt, and the Work to be done over with it lying flat, strowing it thick on the thing to be coloured, and with the feather edge of a Goose-Quill stroke over it, that it may lie even and alike thick on all Places; and then with a Bunch of Linnen Cloath, that is soft and plyable, dab it down close, that it may take well upon the ground to be thoroughly dry, then wipe off the loose Colour with a Feather, and blow the remainder of it off with a pair of Bellows, so is your Work finished.'

'In all other Cases, where the Work to be strowed over

\*234 with Smalt does not lye flat, you must take Smalt up upon a flat bunch of Linnen Cloath, and so dab it upon the ground you are to lay it upon.\*

\*235 Applied in this way, he enthused, 'there is not a more glorious Colour in the World'.\*

'Bice'  
\*236 The second, fine variety he called 'Oyl Smalt', and Watin email. Dossie and James Smith, the author of The Panorama of Science and Art (1815), however, called this bice, a usage not to be confused with the seventeenth-century application of the name to azurite discussed in the section dealing with that pigment above.\* This variety was intended for grinding up in oil and mixture with white lead; but even so John Smith criticised its lack of body and said that it worked with great difficulty,\* whilst, as mentioned above, its colour would have been extremely pale.

#### Prices

\*238 Stalker and Parker gave the price of 'the best fine smalt' as 4s. or 5s. per pound in 1688, whilst in 1676 the husband of the portrait painter, Mary Beale, recorded the acquisition of four pounds of the 'best and finest ground smalt that ever came into England' valued at 8s. per pound.\* Unfortunately, no information on contemporary prices of the coarser, strewing smalt is to hand; but by the late eighteenth century this seems generally to have been rather cheaper. In 1788, for example, Lewis Berger was offering 'Strewing Smalts' at 1s. 6d. per pound, and 'Smalts' at 1s., 1s. 2d., or 1s. 4d.; whilst between 1802 and 1810 he valued his stocks of strewing smalt at rates between 1s. 6d. and 1s. 9½d., and a more expensive quality  
\*239 'Smalts HFE' at 2s. 9d.\*

Documentary evidence for the use of strewing smalt for house-painting in England is equivocal, especially during the later part of the period being considered. During the late seventeenth century, however, it is possible to suggest that restriction of its use to small decorative areas is indicated. John Smith, who described it as 'the most glorious colour of all, if it lie at a distance', added, 'near the Eye, the beauty is not so

great'; and undoubtedly it would have been virtually impossible to strew the pigment evenly over large plain areas of ceiling or wall. Indeed, the illustrations he chose for its use were on clock dial-boards or inn signs, both of which could have been laid flat;\* and in 1700, when John Martin re-painted the 1637 dial board of Watford church, Hertfordshire, he strewed the ground between the figures with smalt, which, he noted, was carefully dried beforehand.\* Strewing smalt has been found, however, on the ground of the pulvinated frieze of a seventeenth-century doorcase now at Tamworth Castle,\* and its use in interior decoration was probably confined to similar elements. With regard to the later period, on the other hand, although Lewis Berger held significant stocks of strewing smalt during the 1800s,\* it must be borne in mind that the pigment was used for many other purposes quite unconnected with house-painting, such as ceramic glazes, paper-making, and laundry blue; and again, no reliance can be placed on its appearance in the colour lists of Martin and Nicholson, since the former seems to have plagiarised Dossie, who was not exclusively concerned with house-painting, and the latter seems to have transcribed Martin more or less word for word.\* Whilst it is true that Nicholson added the information that smalt had to be strewed, it should not be forgotten that by the time he was writing William Butcher had published his revised edition of John Smith's book, in which the description of strewing smalt is a survival from the seventeenth-century text.\* There appears, therefore, little direct evidence that the pigment remained in use by the 1800s.

In the case of oil smalt, a better assessment is possible. D'Aviler listed émail together with indigo and azurite as being used for painting ornaments on a white ground, whilst Bullet suggested the employment of émail in gris perle oil paint.\* Examination of paint samples from the doorcase at Tamworth already mentioned showed a layer of white lead in oil, attributable to the seventeenth century, which contains smalt; and samples taken from the wainscot of the Marble Hall at Petworth House, Sussex, revealed a layer of grey attributable to the early eight-

\*247 eenth century produced by the use of smalt.\* Some fifty  
years later, however, Dossie stated that whilst formerly  
employed in oil the finer smalt was by then largely dis-  
used, and Watin writing slightly later said of both fine  
and coarse varieties that they were only employed exter-  
nally since the blue yellowed in an oil medium if used  
\*248 indoors.\*

Tingry alone suggested that smalt was used in some  
\*249 kinds of distemper.\* Otherwise no reference has been  
encountered to its employment in this way, and it cannot  
be doubted that blue verditer, Prussian blue, or indigo  
were more useful in this medium. With respect to inter-  
iors therefore, it is reasonable to conclude that strewing  
smalt was not generally used except for small ornamental  
areas or elements such as the grounds of friezes at any  
period, and that use of oil smalt, which would probably  
have been confined on large areas to the production of pale  
blues and greys, died out during the first half of the  
eighteenth century, its use for this purpose being ren-  
dered unnecessary by the introduction of Prussian blue.

#### PRUSSIAN BLUE

Prussian blue, known chemically as potassium ferric  
ferrocyanide, was discovered during the first decade of  
the eighteenth century by Diesbach, a Berlin colour maker,  
and was first advertised in 1710 for use as an artists'  
pigment at a price said to have been scarcely one-tenth  
\*250 that of ultramarine.\* In 1724 an account of its manufac-  
ture was published by Dr. Woodward in the Philosophical  
\*251 Transactions;\* and by the mid-1730s the pigment was evi-  
dently sufficiently cheap to be in commercial use for  
house-painting since 'Fine Sky Blue mixed with Prussian  
Blue' was advertised in Alexander Emerton's range of ready-  
ground paint colours at 8d. or 12d. per lb. (against 'Best  
White Lead' at 4d.). His price list was published in the  
first edition of William Salmon's Palladio Londinensis  
(1734), and this also contained a table of rates for  
painters' work, including 'Prussian blue' at 10d. per  
\*252 square yard.\* Together (since the pigment is not mentioned

in the 1723, nor indeed the 1738 or 1753 editions of John Smith's Art of Painting), these seem to provide the first printed references to the use of Prussian blue for ordinary house-painting; although in 1722 reference was made to its possible employment by William Kent in colouring the grounds of the trompe l'oeil coffers on the ceiling of the Cupola Room at Kensington Palace, London.\*

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Woodward's account of the method used for the manufacture of Prussian blue, originally written in Latin, was first published in English by Dossie.\* In essence, a solution of potassium ferrocyanide was prepared by the calcination of bullock's blood with potash and extracting the soluble part of the product with boiling water. A solution of alum and ferrous sulphate was then added, and the greenish precipitate treated with hydrochloric acid to turn it blue. At the end of the nineteenth century Hurst indicated that in his day the use of alum was widespread, and made the pigment easier to grind, although its colour would be lighter; and observed also that the precipitate will also turn blue without the addition of hydrochloric acid if simply exposed to the air, although this produced a pigment of inferior colour.\* With regard to the locations at which it was manufactured, Campbell mentioned that the pigment was prepared chiefly in Southwark, and Watin that it was made in Berlin and London.\* Its quality at this time was variable, Dossie commenting that there were many different degrees of brightness and strength, whilst the colour could vary from a true blue to a purplish or light tint. He added also that in use the colour was inclined to yellow, 'as may be seen in all blue wainscots, or other work done by house-painters; which in a short space of time turn to an olive or greenish grey colour'.\* Cheap qualities of Prussian blue for use in distemper were kept in a damp or wet state and sold in this form, being known accordingly as wet blue or damp blue. John Phillips, for example, referred to 'Damp blue in water', whilst Whittock remarked of Prussian blue that for use in distemper it was usually kept ready ground by colourmen under the name of damp blue.\* Vanherman also mentioned the use of wet Antwerp blue in mixing green,\* this being a variety of

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'Wet' and  
'Damp' blues

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'Antwerp  
blue'

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Prussian blue which was being stocked by Lewis Berger in the early nineteenth century and manufactured by him in the 1820s.

A considerable amount of information on Prussian blue is contained in the surviving documents of Berger's company which is thought to have commenced its manufacture in London in 1766. From the large number of formulae relating to the pigment, the earliest to survive being dated 1816, the basic method of manufacture seems to have changed little from that of Diesbach a century before, although Berger produced his ferrocyanide from animal hooves rather than blood, and does not seem to have used hydrochloric acid at the end of the process. The improvements reputed to have been made by him were probably, therefore, either by way of an improvement in the quality of the raw materials, or in the systematisation of manufacture to produce consistent results. Certainly on the evidence of the surviving records considerable trouble and effort went into the latter, and the formulae books, and experimental notebooks, are an impressive record of this.\* Of particular interest is the sample book, which contains smears of pigment dated between 1789 and 1802. A page from this is illustrated\* and shows clearly the differences of colour between the grades and the prices applicable to each, which in this instance range between 1s. 4d. per lb. and 32s. per cwt. for the cheaper grades (probably of wet blue). Earlier, the letter book shows that in 1779 he had been offering 'Dry Prussian Blue' at rates from 2s. to 12s. per pound, and the same rates appear in other letters of the period.\* In 1802, 1806, and 1810 he valued his stocks, which were never less than a total of 13 cwt. at prices from 1s. 8d. to 7s. 6d. per pound; and in 1802 and 1810 had smaller stocks ( $\frac{1}{2}$  lb. and  $37\frac{1}{2}$  lb. respectively) of Antwerp blue at 13s. or 8s. per lb. At the same time, he also had small stocks (18 to 60 lb.) of Prussian blue in ground form valued at rates between 3s. and 4s. per pound.\*

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\*Fig. 2

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(The reason these were small was probably that the pigment did not keep well in this form, and on this account it had been included by Vanherman amongst those pigments 'best ground in oil, when wanted, as they are apt to become fat

\*263 or livery'.\*) Turning to the very cheap variety, wet  
blue, in 1779-88 Berger had been offering this for sale  
at prices between 3ls. 6d. and 80s. per cwt., but in 1802,  
1806, and 1810 valued his stocks (which fluctuated widely  
\*264 from 1¼ to 22¼ cwt.) from 36s. to 45s. per cwt.\*

Apart from the price of 56s. per cwt. charged for  
Prussian blue by Lamb and Jones, Oil and Colourmen of  
Little Pultney Street, London, in 1776, and the same fig-  
ure for damp blue given by Vanherman, these are generally  
\*265 considerably lower than other prices encountered.\* At  
Tredegar House, Newport, Monmouthshire (now Gwent), in  
1793, for example, 1s. 4d. was paid for the supply of '1  
\*266 ounce prussion blue to y<sup>e</sup> plaisterer';\* whilst a figure of  
9d. per oz. is mentioned in documents recently published  
\*267 relating to the transactions of a York builder in 1800,\*  
and Soane was charged at a rate equivalent to 1s. per oz.  
for a total of 1 lb. 10 oz. of the pigment in 1803 (the  
same rate in this instance applying to both dry and ground  
\*268 varieties).\* As usual, the prices given by Phillips are  
also well above those at which Berger valued his stock. He  
quoted 17s. per lb. for Antwerp blue in 1812 and 1821, and  
gave rates of 130s. 8d. and 112s. per cwt. for 'Damp blue  
\*269 in water' in these years respectively.\*

Whilst the precise date of its introduction for house-  
painting between 1710 and 1734 is uncertain, there is no  
doubt that once its use become economical Prussian blue was  
used extensively for the decoration of buildings in both  
oil and distemper, although its use with lime was precluded  
since the pigment is adversely affected by alkalis. It could  
also (as in the Drawing Room at Bolling Hall, Bradford, in  
\*270 the 1770s)\* discolour in distemper applied to lime plaster.  
Its everyday employment continued throughout the eighteenth  
and early nineteenth centuries, and in 1828 Vanherman des-  
cribed the pigment as,

'the most general and useful blue we have, either for  
inside or out-door painting. Its combination with  
some of the reds, and most of the yellows, produces  
\*271 purples and greens, of numberless tints and gradations'.\*



In addition, Whittock mentioned its transparent nature, and explained that for this reason it was frequently used as a glazing pigment without white lead in such operations as marbling, for which this is a considerable advantage.\*

#### NATURAL ULTRAMARINE

The blue pigment known as ultramarine was manufactured from the semi-precious mineralised limestone lapis lazuli which occurs in several parts of the world, notably Afghanistan and Russia, the Kokcha valley in Badakshan, Afghanistan, being the source most commonly exploited until modern times. The stone contains hauyne, lazurite, and sodalite, the two latter forming the strongest blue components, which were separated from the unwanted portions of the crushed material by mixing it with a paste of wax, resin, and oil, and kneading the resulting mass in hot water. This allowed the desired pigment particles to escape, whilst the useless matter was retained by the waxy dough. The best pigment was the first to emerge, the poorest and greyest obtained in the final stages being known as ultramarine ashes.\* Natural ultramarine has always been extremely costly, and Stalker and Parker, for example, gave prices ranging from twenty shillings to seven guineas per ounce, as against 4d. or 6d. for 'Blew Bise' (azurite).\*

\*273 These relate well to those recorded by Mary Beale's husband, who noted £2 10s. per ounce in 1672 and £4 10s. in 1674;\*

\*274 and John Smith remarked that it was 'so vastly dear, that 'tis not to be used except in pieces of great price',\* so that the absence of the pigment from the group suggested by D'Aviler for painting blue ornament and grotesque on a white ground is not surprising.\*

\*275 Nevertheless, reporting on William Kent's work at Kensington Palace in May 1722, two members of the Committee appointed to inspect the ceiling of the Cupola Room, Jan Van der Vaart and Jacob Rambour, were unable to judge whether he had used true ultramarine, whilst Alexander Nisbett thought his pigment 'Nothing but Prussian Blew, in which perhaps there may be some Ultramarine mixt!'.\*

\*276 Although there may have been a considerable element of political sour grapes in these remarks, if it is

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assumed that they apply to the ground within the coffers of the ceiling it could be concluded that in Royal works at least, natural ultramarine may have been expected to be used on strictly limited architectural elements despite its expense. Watin, however, stated quite definitely that the pigment was not used in house-painting, and Tingry too observed that it was particularly reserved for pictures on account of its price.\* Hence, although ultramarine is included in the pigment lists of Martin and Nicholson, both writers copied uncritically from Dossie, whose list was of more general application to the arts rather than confined to the limited subject of house-painting;\* whilst Whittock observed that its high price precluded its use in any quantity, although for finer work it was sometimes essential.\* Even in 1812 and 1821 Phillips quoted £3 15s. 6d. for 'Ultramarine blue';\* and it seems clear that the pigment can never have been used for the ordinary purposes of room decoration, although it is possible that it may have been used very occasionally for particular motifs, as for example in heraldic work or touches of colour in arabesque, such instances, nevertheless always being exceptional.

#### FRENCH ULTRAMARINE

During the first quarter of the nineteenth century, prizes were offered by the Society of Arts and the Société d'Encouragement pour l'Industrie Nationale for the successful manufacture of an artificial variety of ultramarine. That of the latter body was awarded in 1828 to a French chemist, Guimet, who established a factory at Fleurieu-sur-Saône in 1831.\* Although it is apparent that it came into use very quickly for fine art purposes on the Continent and was of outstanding importance for house-painting from the middle of the nineteenth century, artificial ultramarine seems insufficiently established as a pigment by the terminal date of the present study to have been of very much significance.

## COBALT BLUE

Cobalt blue seems to have been discovered in 1802, and was, apparently, an article of commerce in France within five years; whilst it was listed for fine art purposes in England by 1816.\* Mention of the pigment in connection with house painting, however, seems elusive, apart from the description of its manufacture by roasting cobalt phosphate with alumina included in the 1830 edition of Tingry's book;\* whilst in 1831 Lewis Berger appears to have made experimental batches of the pigment, but no production formula or costing appears.\* Modern cobalt blue is described by Heaton as 'a combination or solid solution of cobalt oxide and aluminium oxide', but it seems likely the earlier pigments produced by Thenard in France and Leithner in Germany may have differed from their present day equivalent, the former containing cobalt phosphate and the latter cobalt arsenate.\* The modern pigment, having a refractive index similar to linseed oil, is transparent when ground in that medium. In the absence of any information on early nineteenth-century prices, it is impossible to suggest the usefulness of the pigment in house-painting at that date, but its omission from Vanherman's book is probably more significant than its mention in the 1830 edition of Tingry, whose later editor made no suggestions for its employment.

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## Green pigments

The study of green pigments from documentary sources, especially those of the early nineteenth century, is complicated, since it was a time of considerable experiment. Not only were the majority then in use, especially those based on copper, similar in colour, so that the same name came quite often to be applied to dissimilar chemical compounds, but there were also a number of hybrids in production which contained mixtures of different substances. These reflected attempts to improve the range of pigments available, since there was a considerable problem throughout the eighteenth century in obtaining a good, stable, bright green in oil at a price acceptable for house-painting. It is, therefore, often difficult to classify such pigments in a satisfactory way; but in the descriptions

which follow these have been cross referenced by means of footnotes as far as possible. The same method has been adopted in the case of names such as 'English verdigris', 'Bremen green', 'mineral green', and 'patent green' which were applied to several different pigments or hybrids. Nevertheless, despite the seemingly large total of ten clearly distinguishable pigments described below, the two most important greens in use for house-painting during the entire period being considered seem to have been verdigris in oil and green verditer in distemper. Neither was well suited to the other's medium, but used in their respective ways both produced similar colours, slightly bluish in tone. Also, whilst verditer, which seems to have completely superseded malachite in Britain by the end of the seventeenth century, provided an excellent bright green in distemper, verdigris was far less satisfactory used in oil. Nevertheless, despite its expense and tendency to discolour, the latter appears to have remained in use well into the nineteenth century, since, even after the introduction of mixed oil greens based on yellows and Prussian blue which took place during the first half of the eighteenth century, it was almost impossible to match its brilliance. In wall-paper and distemper on the other hand, verditer was supplemented by Scheele's green from the 1770s and emerald green by the 1830s; but although both new pigments were capable of use in oil, as too was verditer to a certain extent, the degree of their employment in this medium remains obscure. It is doubtful, therefore, that verdigris was finally made obsolete until after the introduction of chrome yellow and its derived compound, chrome-yellow Brunswick green, during the 1820s.

#### VERDIGRIS

Verdigris, a basic copper carbonate, was made during the seventeenth century at Montpellier and elsewhere in France. Most English supplies seem to have come from that source, John Smith mentioning Montpellier verdigris as being the best;\* and a detailed description of the manufacturing process, which was organised on cottage industry lines, was published by John Ray, a fellow of the Royal

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\*289 Society, in 1673.\* In essence, copper plates were corroded by the action of the acetic acid vapour above wine vinegar, the corrosion product, or verdigris, being scraped off, formed into cakes, and sold for use. The ordinary pigment prepared in this way could be refined by recrystallisation after solution in acetic acid which had been purified and concentrated by distillation. It was then known as distilled verdigris. Tingry observed that this process was carried out by the Dutch using pigment imported from France, adding that the product was better when aged or once it had been exposed to sunshine and heat to dehydrate it.\*

'distilled  
verdigris'

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Prices

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Distilled verdigris was an expensive pigment. John Smith remarked that whilst excellent for fine work it was too dear for use in 'vulgar painting', and Stalker and Parker listed it at 1s. per ounce.\* By the late eighteenth century, however, Lewis Berger was offering distilled verdigris to merchants at 5s. or 5s. 6d. per pound, although the price had increased sharply by 1802 when he valued his stock of only 4½ lb. at 8s. 6d.; whilst in 1806 he had a stock of nearly 2 cwt. valued at 7s., and in 1810 just over ½ cwt. at 10s. 6d. Over the same period the ordinary variety was considerably cheaper, and in the late eighteenth century he was offering 'French verdigrease' at about half the price of the more refined product, quoting rates between 2s. 4d. and 3s. per pound. In 1802 he valued his stock of just over ¼ cwt. 'Dry Verdigrease' at 2s. 6d. per lb., and in 1806 this stood at a little over 10½ cwt. at the same rate; but in 1810, when he had just over 5½ cwt. he valued it at 4s. 8d. In addition, he held small stocks of 'Ground Verdigrease' totalling just over ¼ cwt. in 1802, but only 13 lb. in 1806, and just over ¼ cwt. in 1810 valued at 2s. 6d., 3s., and 5s. per pound respectively, suggesting that the pigment could also be purchased ready ground into oil.\*

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Besides France, Dossie mentioned Italy as a supplier of verdigris, and observed too that a manufactory had recently been started in England.\* The term English verdigris should, however, be treated with caution, since

other pigments discussed below were known under the name  
 during the early nineteenth century.\* Nevertheless two  
 of the recipes for 'English verdigris' given by Tingry's  
 later editor do relate to copper acetate pigments, although  
 the first contained also alum and zinc sulphate.\* These  
 formulae, together with that of Vanherman for 'another  
 Bremen green' depended on a reaction between copper sul-  
 phate and lead acetate to produce copper acetate in pure  
 form. In general, therefore, such pigments would have  
 been equivalent to distilled verdigris made by recrystal-  
 lisation, and Vanherman described that produced by his  
 formula as 'one of the best, for intensity and durability  
 of colour, and for solidity of body'.\* It should be noted,  
 however, that the term Bremen green was also applied to  
 certain copper chloride pigments (q.v.) discussed below.

John Smith said of verdigris that it was used on most  
 occasions when a green was required, and described how the  
 addition of a little organic yellow pigment corrected a  
 tendency to blue, making a delicate grass green;\* whilst,  
 writing at the end of the period under consideration,  
 Whittock remarked that it was the most common green pigment  
 used in ordinary work.\* He too described it as bluish on  
 its own, recommending that a true green could be produced  
 by mixture with Dutch pink, although this statement may  
 have been a consequence of Butcher's then recent re-  
 publication of Smith's seventeenth-century text. Never-  
 theless, the early nineteenth-century American author,  
 Hezekiah Reynolds, used verdigris in preparing three greens  
 for exterior use, and in mixing ice colour and sea green  
 internally;\* whilst Phillips mentioned paintwork finished  
 with 'verdigrease green', and an item for 'Four times in  
 oil flated green with verdigrease green' appears in early  
 nineteenth-century editions of the Builders Price-Book.\*  
 Although it is not clear that these two latter references  
 necessarily imply the use of verdigris, it would be dif-  
 ficult to match its colour by means of any other pigment  
 then available, and confirmation of its employment well  
 into the first half of the nineteenth century does, there-  
 fore, seem likely. Moreover, Tingry (followed by the  
 author of The Painter's... Pocket Manual) observed that

the colour of green verditer, a pigment better suited to distemper, could be matched in oil by the use of two or three parts of verdigris with one of white lead, again showing that the pigment was still employed during the early nineteenth century.\*

\*301

In contrast to verditer, verdigris is unsatisfactory in distemper since it reacts chemically with both chalk and lime to form calcium acetate; and although Tingry's later editor mentioned its use in this medium, it must be unlikely it was ever used by the initiated for this purpose.\* Indeed, Watin remarked quite explicitly that it was not used in this way.\* The pigment is, moreover, affected by atmospheric carbon dioxide and hydrogen sulphide, and, although an oil medium will provide a measure of protection, it is most satisfactorily used in varnish, in which it becomes reasonably stable. Contemporary acknowledgement of this comes, for example, from Pincot, in his pride in recording with some emphasis that he had lately seen a coach body still in a satisfactory state which he had painted a glazed verdigris green eighteen years previously.\* When used in varnish, the pigment may be completely dissolved in the medium to produce a transparent copper resinate, and can therefore be used without white lead as a glaze, distilled verdigris being particularly suitable for this purpose. Evidence for its use in this way in house-painting is elusive, but it might have been an attractive technique for decorative work such as arabesque. Glazes of this nature could also have been used on furniture, and it seems fairly certain that copper resinates, probably made using verdigris, were employed with white lead to produce a green 'japan' finish on chairs and other furnishings during the second half of the eighteenth century.\* It is possible too, that the capacity of verdigris to dissolve in a medium of this nature may have been exploited by Alexander Emerton, whose instruction sheet for the use of his products contained a special set of 'DIRECTIONS for using the GREEN PAINT':

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'To every Pound of Green Paint, put one Quart of Green Oyl, and be sure mix no other Oyl with it,

\*306 nor use this Oyl with any other Colour. Mix not above half a Pound with Oyl at one Time, for if any is left (after it is mix'd with Oyl) till the next Day it will be spoil'd.\*

\*307 The injunctions that the oil should not be mixed with any other colour, and that it should be mixed with the paint as required could suggest the presence of dissolved verdigris or other copper pigment, although it is also possible that the 'Green Oyl' could have been freshly expressed hemp-seed oil, since this is a bright yellow-green colour.\*

The normal way of using verdigris for house-painting, however, was detailed by Butcher in his revised edition of John Smith. He directed that equal quantities of white lead and the best French verdigris were to be mixed, and applied over a ground colour of 'a good pleasant blue' made from Prussian blue and white, adding:

\*308 'When the verdegris is laid over the blue ground, it will not at first appear green, but will change, in a few days, to a beautiful colour.\*

\*309 Longer term effects attending the use of verdigris in oil were described by Dossie, who observed that the colour 'soon flies when used in oil', and both Watin and Tingry's editor remarked on the yellowing of the pigment.\* In this connection, Butcher's use of a blue ground was probably intended to ameliorate this tendency, and it is notable that Bullet suggested the employment of ordinary verdigris only for external work in vert de treillages, and Watin its use in addition only for olive green.\* Although it is possible distilled verdigris provided a more stable alternative (Watin indeed suggested its use in several greens for the decoration of rooms, one of them explicitly in a varnish medium)\* it will be remembered that John Smith had ruled out its employment for house-painting on grounds of cost. Despite the apparent reduction in this by the second half of the eighteenth century, a significant gap still existed between its price and that of ordinary varieties, and it remained a costly pigment. Hence Tingry indicated

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\*312 that it was reserved for fine, expensive painting;\* and,  
in comparison with those he possessed of the common form,  
the small stocks held by Lewis Berger in the early years  
of the nineteenth century do not suggest everyday use of  
distilled verdigris. Moreover, Hurst indicated that it  
was rarely used in his day on account of its transparency  
and crystalline nature, and found its chief use in medi-  
\*313 cine;\* and it seems clear that, during the period covered  
by this study, it was the ordinary variety, itself fairly  
expensive and not totally satisfactory, which was employed  
as an oil pigment on a fairly wide scale.

#### TERRE VERTE

Terre verte as its name implies is a pigment of  
natural origin consisting chiefly of the mineral glauconite,  
and occurs in several parts of the world, the noted  
eighteenth-century source being Verona. Hill, for example,  
said that the pigment was generally imported from Italy,  
although, he observed, it was 'to be met with entirely as  
\*314 good here at home'.\* Hurst particularly mentioned the  
Mendip Hills, Somersetshire, as a source of terre verte,  
\*315 but noted also its occurrence in France, Italy, and Cyprus;\*  
whilst Church referred particularly to that found at  
\*316 Bentonico to the north of Monte Baldo near Verona.\* The  
green colouration is due to the presence of silicate of  
iron, and since the refractive index of the pigment is  
similar to that of oil, it lacks body and becomes trans-  
lucent in that medium.

Small quantities of 'Teravert' totalling 14 lb. are  
included in an account dating from 1705 preserved at Bough-  
\*317 ton House, in which they are billed at 7s. and 8s. per lb.\*  
It cannot be certain, however, that these were for house-  
painting; and although the pigment was listed by Martin and  
Nicholson, its inclusion in their colour-lists must as  
usual be treated with reserve since they clearly originate  
from Dossie, whose interests were not confined to such  
\*318 coarse applications.\* The only more positive evidence  
suggesting use of terre verte as a house-painting pigment  
comes from the two Continental authors Watin and Tingry,

although neither suggested its employment in any of the colour mixtures they proposed. The latter described it as good in both oil and distemper, whilst the former mentioned two varieties, terre verte commune and terre verte de Vèrone.\* In this connection it is interesting that Rondelet listed terre verte commune at lfr. 60 per lb. and belle qualité at 3fr.\* Curiously, Watin stated that the pigment was never used in distemper, a pronouncement apparently contradicted by the author of The Painter's... Pocket Manual, who indicated that 'Italian green' was used only in this medium;\* although his description may be traced to Tingry, and it is likely he was confused about the nature of the green earths he was discussing. Use of terre verte in English house-painting is, therefore, an open question; but lack of stocks in 1802 and 1806, and the limited quantity of a mere 47 lb. held by Lewis Berger on 1st January 1810, albeit at the fairly modest valuation of £5 per cwt. (equivalent to about 10½d. per lb.),\* besides omission of the pigment from any of the more authoritative English books such as those of John Smith and Vanherman, suggest that if employed at all this was not general practice.

#### SAP GREEN

At least from the early seventeenth century, sap green was prepared by evaporating the juice expressed from ripe buckthorn berries, or those from other species of the genus Rhamnus. Typical descriptions of the process were given by Dossie (who, in fact, specified the use of unripe berries) and Watin, the former stating that the concentrated mass thus obtained was used only in an aqueous medium.\* However, although Watin described 'verd de vessie' as used in water, he observed that it was normally employed in fan-painting, adding, 'il ne vaut rien à l'huile, & ne sert ni aux bâtimens ni aux équipages'.\* Tingry repeated unequivocally that it was used only by fan-painters and for colouring maps.\* Nor did Watin employ it in any of his suggested mixtures for green distempers;\* and inclusion of sap green for house-painting in their lists by Martin and Nicholson cannot be regarded as significant in view of their obvious

\*327 derivation from Dossie, whose book was concerned with the  
 arts in general.\* Moreover, although Lewis Berger had  
 significant stocks of sap green, totalling nearly 2½ cwt.  
 on 1st January 1802, 2½ cwt. in 1806, and nearly 3 cwt.  
 in 1810, it was not a cheap pigment, veing valued at 4s.  
 6d. per lb. in the first two instances, and 4s. 7d. in  
 the latter (with a small quantity of a cheaper variety at  
 \*328 2s. 6d. in 1806).\* Rondelet listed it at 5fr. 50 per  
 \*329 lb.\* It seems certain, therefore, that the pigment was  
 not employed for house-painting; and John Phillips,  
 indeed, specifically listed it as 'Fine sap green for  
 water-colours', quoting prices of 2s. 5d. and 10s. 6d.  
 \*330 per pound.\*

#### MALACHITE

During the seventeenth and eighteenth centuries a  
 pigment was made by crushing malachite, a naturally occur-  
 ring form of basic copper carbonate. John Smith, refer-  
 ring to it in the terminology of his day as green bice,  
 'Green bice'  
 \*331 described it in 1687 as sandy and not much used.\* It was  
 not mentioned in the first edition of his book, and no  
 further English references to its use for house-painting  
 have been encountered, although vert de montagne, as the  
 pigment was known in France, was listed by D'Aviler,  
 Bullet, Watin (who described its source as the mountains  
 of Kernhausen in Hungary), and Rondelet (who priced it at  
 3fr. 50 per pound against 6fr. for the artificial variety,  
 \*332 cendres vertes).\* Tingry too listed the green earths of  
 Saxony and Hungary, and suggested the use of mountain green  
 for 'sea green' paint, but it seems likely that since, as  
 already mentioned in connection with blue varieties of  
 copper carbonate pigments, the artificial forms were an  
 English speciality, these references may represent ana-  
 \*333 chronistic practice.\* In this country at least, the latter  
 would have provided a cheaper alternative to the natural  
 pigment from an early date, and malachite is notably absent  
 from Dossie's book. It was also omitted completely from  
 the list of pigments in Butcher's revised edition of John  
 Smith's work. For this reason it seems unlikely it ever  
 enjoyed widespread use for house-painting in Britain, at

least after the middle of the seventeenth century.

#### GREEN VERDITER

As already noted the silver refiners' process described in connection with the manufacture of blue verditer more often produced, at least during the seventeenth century, a pigment of greenish colour. In parallel with the blue form, green verditer was described by John Smith as sharing the undesirable qualities of its natural counterpart (malachite), being sandy, and lacking body in oil.

\*334 On this account it was not, he indicated, greatly used.\* Hence, although 'Best green verditer' appears amongst other green oil-paint colours in The Builder's Price-Book published by I. and J. Taylor, it seems likely that a similar hue was generally produced in this medium by the employment

\*335 of verdigris with white lead in the way suggested by Tingry.\* This recommendation was repeated by the author of the Painter's... Pocket Manual, who (again taking his cue from the latter, but without ruling out its use in oil) unequivocally indicated that green verditer was better adapted as

\*336 a pigment to employment in distemper.\* In this medium, it undoubtedly found its most general use, and 'green verditer', for example, appears in the range of proprietary 'water colours' for use in interiors retailed by Pincot during the

\*337 early years of the nineteenth century.\*

By this date, it is clear that, in common with blue verditer, the pigment was also being manufactured on an industrial scale by precipitation from a solution of copper sulphate by the addition of potassium carbonate. In 1812

'British verdigris' Jacob Zink took out a patent for the manufacture of 'British verdigris' by this means, and Tingry's later editor

'English verdigris' provided a similar formula for the manufacture of 'English Verdigris' (names which must be approached with caution since they were not invariably applied to copper carbonate pigments).\*

\*338 Papers preserved in the archives of Berger Paints show that Lewis Berger was using a similar method to prepare a pigment he called 'French green'; and although

'French green' the first formula for the production of French green does

\*339 not appear until 1816,\* the name is present in his stock-

\*340 list for 1st January 1802.\* Also, a note in the 'Lake & Carmine Book' dated 1808 details the preparation of 'Second French Green' (a name later applied by Berger to a variety of Scheele's green, q.v.), a derivative pigment containing, in addition to French green, Dutch lead and princess blue.\*

\*341 In 1831 French green was made according to the following directions:

'Dissolve 3 Tubs (abt 0 cwt. 2 [qrs] 17[1b] each) Roman Vitriol in Copper - which will make 6 strikings. Dissolve abt 4½ Pails (abt 0 [qrs]. 26 lb ea[ch]) Pearl Ash in Copper

'Let down Vitriol & strike with Ash for 3 successive times then turn precipitate over into large Tub & fill up with water

'36 Strikings make 1 days work

'The precipitate from 36 Strikings to be wash'd 4 times & fill out thro' a 68 Sieve laid on Chalks & taken off in a damp state'.\*

\*342

Experiment suggests that to make a green pigment the solutions were mixed hot. In 1831 production cost of the pigment was 9½d. per lb. suggesting it retailed at about 1s. 6d. or 1s. 9d., a price comparable with those at which Berger valued his stocks during the first decade of the nineteenth century. On 1st January 1802, for example, his stock of French green stood at nearly 1½ cwt. together with almost 11½ cwt. second quality at valuations of 1s. 9d. and 1s. 4d. per lb. respectively, and in 1806 he had nearly 12½ cwt. French green at 1s. 10d. per lb. By 1810 besides 14 cwt. French green he had close to 1½ cwt. 'Fine' French green and just over 4 cwt. of 'Soft' French green all valued at 1s. 7½d., with a further quantity of just over 2 cwt. 'Sec<sup>d</sup>' French green at 1s. 2½d. Bearing in mind the inflation caused by the wars with France, it seems that the artificial pigment prepared by precipitation was cheaper than the green verditer (prepared, presumably, by the older method) for which Berger

\*343 was quoting prices of 1s. 3d. per lb. in 1778 and 1779,  
 and 2s. in 1788.\* Certainly, the absence of the latter  
 from his early nineteenth-century stock-lists and formula  
 books suggests that, since the green produced by precipi-  
 tation was stable in colour, the earlier method of manu-  
 facture had been superseded except for the production of  
 blue verditer (q.v.). Nicholson indicated that French  
 \*344 green was used in the preparation of pea green distemper,\*  
 suggesting that by 1819 precipitated pigment was being  
 commonly employed; and it is possible too that it may have  
 formed the basis of Pincot's proprietary 'French green'  
 \*345 water-colour.\* Interestingly, such pigments seem also to  
 have been used in oil, since Vanherman described the prep-  
 aration of a 'fine green' by precipitation in the presence  
 \*346 of borax and grinding the pigment into oil;\* whilst its  
 use with Scheele's green, refiners verditer, and white  
 lead to make a bright pea green oil paint for house-  
 \*347 painting is suggested in a patent of 1812.\*

#### SCHEELE'S GREEN

In 1778, C.W. Scheele, a Swedish chemist, published  
 details of the green pigment which bears his name, and  
 which by his own account he had discovered three years  
 \*348 previously.\* It is known chemically as copper arsenite,  
 and is extremely toxic. Hurst described it as unsatis-  
 factory, with low covering power, fading on exposure to  
 \*349 light and air.\* Descriptions of its manufacture by pre-  
 cipitation from hot solutions of potassium arsenite (formed  
 by reaction between arsenious oxide and potassium carbon-  
 ate) and copper sulphate were published by Tingry's editor  
 and Ure (who gave Mittis green as an alternative name);  
 whilst in 1812 William Parker had taken out a patent for  
 a similar method of making the pigment, which he referred  
 to as mineral green.\* Although generally applied to  
 Scheele's green, this term does, however, have to be  
 approached with a little caution, since it was also applied  
 to other pigments.\* Parker's patent is of interest as pro-  
 viding the only really firm published indication for the  
 use of Scheele's green in house-painting, since in it he  
 described a 'bright mineral pea green' oil paint made by

'Mittis green'

'Mineral green'

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\*351

admixture of one pound of his mineral green with a pound of copper carbonate made from copper sulphate and pearl ash, a pound and a half of refiners blue verditer, and three pounds of white lead, using lead acetate as a drier. He also described a method by which this mixture could be used for flatting walls.

'Patent green'

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Although Dr. Harley has linked the patent green described by Butcher as 'so called from a patent being lately obtained for the making of it' with Parker's patent, there is nothing in the patent specification itself to justify the attribution.\* Butcher's description of the pigment as 'a beautiful green, and of a good body:... used in most cases where verdigris would be too expensive, and... sold at most of the colour-shops' could equally be applied to other pigments, particularly, perhaps, Zink's 'British verdigris' (also patented in 1812) which has been discussed above in connection with green verditer (q.v.). This was a copper carbonate pigment, and, as is known from other sources, was the basis of at least two hybrids known as patent green.\* It is worth noting also that, later in his book,\* Butcher referred to 'Fowler's patent green', a pigment or colour also mentioned by Phillips;\* but no patent is listed in classes 50 or 54 of the Patents for Inventions Abridgements of Specifications A.D. 1618-1866 (1871) under that name. References to 'patent green', including that by Laxton and those in the Painter's... Pocket Manual and Skyring's Builder's Prices cannot, therefore, be accepted as indicating the use of Scheele's green.\*

'Olympian green'

In considering the use of the pigment in house-painting, it is accordingly necessary to look at less direct evidence. A formula dated 1811 amongst the records of Lewis Berger's company shows that he was then producing a variety of Scheele's green under the name Olympian green, but whether this was the same pigment as the Olympian green for which he was quoting prices of 1s. 3d. per lb. in 1778, and 2s. in 1779 and 1780 is, perhaps, open to doubt, since 1778 is the generally accepted year in which Scheele published details of his discovery. It is nevertheless clear that from 1811 Berger was invariably applying the name to

\*357 pigments of copper arsenite type, and it seems likely, therefore, that Nicholson was recommending Scheele's green when he suggested the use of 'Olympian green' in the preparation of pea green distemper;\* but the coincidence of name is not, of course, conclusive.

'Petre's green'

\*358 Further evidence from the Berger archives is circumstantial, but it seems significant that Berger manufactured a large number of different varieties of the pigment. The earliest surviving formula is that dated 1810 for 'Petre's green', and formulae appear in 1811 for 'Fine Green' and 'Olympian green'; whilst in 1812 details are given for the preparation of 'Fine 2nd Mineral Green'.\* Between 1815 and 1818, no fewer than nine varieties were listed, and in 1831, seven. The range of formulations in use during the former period is shown in tabulated form.\* Throughout all of these the basic method of precipitation remained standard, and in 1831, for example, the formula for second French green (not to be confused with his French green discussed in connection with green verditer above - q.v.) was as follows:

'1 cwt.	2 [qrs].	14 [lbs.]	Roman Vitriol
— .	2.	16	Russia Ash
— .	1.	14	Flace Lime
— .	—.	7	Arsenic

'The Ash & Arsenic to be melted together in Iron Pan in small quantity Water - The Lime to be slackd [a footnote adds in 7½ gallons of boiling water] & levigated & then wash'd in upon the Ash & Arsenic, fill up Pan with water making the Temperature abt 80° F -

\*359 'The Roman to be dissolved & added to abt 2 Inches Water in the Frame then strike the Ash Arsenic & Lime upon it. fill up with water & afterwards wash twice more'.\*

The wide range of proprietary names applied to pigments of this type may also be seen from the table; and in general



Table (iv)

Tabulated formulae for pigments based on Scheele's green contained in the 'Lake & Carmine Book' in the Berger archives.<sup>1</sup>

(Quantities given as equivalents in pounds.)

	Roman vitriol	Russia ash	Potash	'Arsenic', <sup>2</sup>	Lime	'Dutch lead', <sup>3</sup>	Common salt	Cream of tartar
Fine green (1815) <sup>4</sup>	182	72		4½	42	7		
Yellow green (1816) <sup>5</sup>	182	72		26	42 <sup>8</sup>		10	
African green (1818) <sup>6</sup>	182	72		26	44 <sup>9</sup>	50	10	
Olympian green (1818)	182	72		4½ <sup>7</sup>	44 <sup>9</sup>	50	10	
Second French green (1816)	Not legible							
Deep mineral green (1815)	112		84	7	9			4
Second deep min. green (1816)	112		84	7	8	4		1½
Second mineral green (1816)	112		84	7	18	15 <sup>10</sup>		
Common mineral green (1816)	112		84	5	18	28 <sup>10</sup>		

Notes and references

- 1 pp. 346, 348, 350, 352, 354, 360, 362, 364, 366.
- 2 Presumably white arsenic, arsenious oxide.
- 3 Nature unknown, see note 91 to this chapter.
- 4 'Struck cool'.
- 5 'For yellowing the sec<sup>d</sup> French & Olympian Greens'.
- 6 'Struck at 130° [F]'.
- 7 Uncertain, original obliterated.
- 8 Chalk lime specified with 44 lb. Plymouth stone lime as an alternative.
- 9 Plymouth stone lime.
- 10 Whitening later substituted.

'African green'

these, including African green, Olympian green, and the various varieties of mineral green, also appear in the 1831 formula book, but with amended quantities in their formulations, and with other modifications. The most notable of these is the omission of the Dutch lead from the mineral greens, and the substitution of the same quantities of whiting. Barytes was added to the formula for Olympian green, and second French green was now made without the addition of the copper carbonate pigment, French green, also manufactured by Lewis Berger. Production costs per pound for the 1831 range were as follows:

Deep mineral green, 1s. 2½d.

Second deep mineral green, 1s. 1½d.

Second mineral green, 10½d.

Second French green, 5d.

African green, 3½d.

Olympian green, 3½d.

\*360

Common green, 3d.\*

Such an extensive range suggests a fairly large demand for pigments of this type, and their prices would certainly have favoured their use for house-painting. Moreover, although employment of Scheele's green in the printing of wallpaper (an industry for which Berger was also supplying pigment) must not be forgotten, the stocks held by him between 1802 and 1810 were extremely large, and certainly greater than would have been justified by a purely fine-art market. Thus, on 1st January 1802, for example, these stood at a total of over 4½ tons including qualities ranging in valuation between 2s. 9d. and 8d. per lb.; in 1806 he had only slightly less in stock at prices between 2s. 10d. and 8d.; whilst in 1810 his total stock was again in the region of 4½ tons, this time valued at rates between 2s. 10d. and 6½d. per lb. Although small by comparison, in the latter two years he held stocks of the pigment ground into oil totalling nearly 1 cwt. and ½ cwt. respectively, in both cases valued at 1s. 6d. per lb., showing that the pigment was available in a state immediately suitable for oil-painting.\*

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Nevertheless, it is difficult to draw any firm conclusions on the basis of such evidence, either as to the

extent to which Scheele's green was used for house-painting, or to the date of its introduction for the purpose. The pigment is notably without mention by Vanherman, but this is perhaps consistent with his expressed aversion to those of a poisonous nature; and in the final analysis it is possible only to observe that it was capable of employment in both oil and distemper, and that its price would not have precluded this. By the late nineteenth century, however, Hurst remarked that Scheele's green had gone out of use.\*

\*362

#### COPPER CHLORIDE BRUNSWICK GREEN AND RELATED PIGMENTS

The earliest reference to 'Brunswick green' is possibly that in the Practical Treatise on Painting in Oil-Colours (1795) where the author conjectured it was a 'cupreous tartar', and described it as 'a very valuable and newly discovered colour prepared... at Brunswick'.\* From the mid-1820s the name became applied to the pigment discussed under 'chrome yellow Brunswick green' below; but, on the evidence of Chaptal the earlier pigment consisted of basic copper chloride made by moistening copper filings with a solution of ammonium chloride in closed vessels, the product of the (slow) reaction being washed and dried for use. It was, he indicated, used in oil and for staining paper (i.e. wallpaper printing).\* James Smith also described 'Brunswick green' as the product of copper and ammonium chloride, adding that it was commonly called mineral green,\* although in this he may have been mistaken since the latter term was generally applied to Scheele's green. Tingry's editor described a similar way of making 'English verdigris',\* and amongst the records of Lewis Berger's company is a note dated 1824 giving a comparable method for the manufacture of 'Strick's Verdigrease Green';\* but this does not seem to have been a formula used for a commercial product, and such names were also applied to other copper pigments including both true verdigris and green verditer (qq.v.). Vanherman too gave details for the manufacture of a pigment by the same means, calling the product (like his copper acetate pigment discussed in connection with verdigris above) Bremen green, and

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'Mineral green' \*365

'English verdigris' \*366

'Verdigrise green' \*367

'Bremen green'

recommending the addition of lead acetate and Venice turpentine to increase its lustre, thus implying its use in oil.\*

\*368 Ure, however, described a far more complex process for the manufacture of 'Bremen green', although the end product was probably related, and mentioned also the preparation of 'Frise green' from copper sulphate and ammonium chloride. (The latter name probably came from Chaptal,\* and would have been better translated as 'Friesland green'.) Curiously, Ure described 'Bremen or Brunswick green' as 'a mixture of carbonate of copper with chalk or lime';\* and it is clear not only that considerable confusion surrounded the precise nature of any particular specimen, but also that a number of hybrids containing varying proportions of carbonate, chloride, acetate, and other copper compounds were in circulation. Lewis Berger, for example, was producing such a pigment which he called patent green during the 1820s and 1830s, although he had earlier applied the name to other varieties.\* This was based on his French green (a copper carbonate pigment discussed above in connection with green verditer) modified by the addition of lime, potassium tartrate, and ammonium chloride, the full process in 1821 being as follows:

'Frise green'

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'Patent green'

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'Take 1 cwt French Green (in a state fit for Sale)

' " 6 lb Lime, slaked one day before used, then levigate in Water using such a quantity that the whole may not exceed 3 Gall<sup>s</sup> when levigated

' " 1½ lb Salt Tartar is next to be added to the 3 Gall<sup>s</sup> levigated Lime & when properly mixed the same is to be put thro a wicker Sieve to the French green, when the ingredients are well mixed by beating, the solution of

' " 3 lb 6 oz Ammoniac in ab<sup>t</sup> 3 or 3½ Gall<sup>s</sup> Water is to be gradually added & when the whole is perfectly smooth, pass it thro a wicker Sieve & let it stand in that state for 3 whole days 2 days are not sufficient'.\*

\*372

The 1831 transcription of this formula has an added note that the cakes of pigment should be made very thin and had to be dried in a moderate heat. The pigment cost 1s. 1d. per pound to produce, suggesting it was sold by Berger at about 2s. or 2s. 6d. per pound.\*

\*373

Although it is possible that pure copper chloride greens were employed to some extent for house-painting, at least in oil, from the end of the eighteenth century (and certainly 'the insoluble muriatic combination of copper' seems to have impressed Sir Humphrey Davy, who observed that it would probably be found to be more permanent than the greens employed in classical antiquity)\* the length of the processes required for their preparation would probably have made them an expensive proposition for this purpose. In the absence of firm data on prices (itself a significant circumstance) it seems more likely, therefore, that copper chloride greens, unless in hybrid form with copper carbonate, were never of major importance; and by the end of the nineteenth century Hurst observed they were quite obsolete.\*

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#### CHROME YELLOW BRUNSWICK GREEN

Called by Vanherman Brunswick green, the term by which it is now generally recognised, it is important to distinguish this preparation from the earlier copper chloride pigment discussed above which went by the same name. In essence this later pigment is an intimate mixture of chrome yellow and Prussian blue, but its inclusion here as a pigment in its own right is occasioned by the practice described by Vanherman of adding the blue during manufacture, immediately after precipitation of the yellow and before filtration.\* Heaton describes pigment made by dry mixture of the ingredients as being duller in colour and having a tendency to separate out on standing when made up into paint, the blue coming out on top, and in twentieth-century terminology defines a pure mixture of Prussian blue and chrome yellow as 'chrome green', 'Brunswick green' being reduced with barytes.\*

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Vanherman described Brunswick green (which, he indicated, was reduced with white lead or whiting) as 'the best standing bright green we have', adding, 'it is a recent discovery, is much in requisition, and gains ground in reputation'.\* Lewis Berger had been making the pigment under the names Prussian green and chrome green (which are liable to confusion with the green version of Prussian blue discussed under that name below, and the artists' pigment oxide of chromium) from at least 1824; but from 1831 he used the name Brunswick green exclusively and its production cost in the latter year was around 3d. per pound.\* Both on account of this and its immensely superior stability to other green pigments and mixtures then available in oil, it obviously became rapidly adopted for house-painting in this medium, although it is unsuitable for use in distemper on account of the interaction between chrome yellow and whiting.\* Evidence for its use before 1828, when Vanherman's observations show it was becoming well established as a pigment, is, however, elusive; but since its availability was dependent on that of chrome yellow (q.v.) it is likely employment of the two developed in parallel.

#### EMERALD GREEN

'Paris green'  
'Schweinfurt green'

The early history of this pigment, known also as Paris green and Schweinfurt green, is obscure, but it was said by Ure to have been discovered in 1814. In 1822 the chemists Liebig and Braconnot published papers on its preparation, and a formula was given by Tingry's editor in 1830.\* Emerald green consists chemically of copper aceto-arsenite, and has an extremely distinctive colour. Hurst described its high opacity, good covering power, and ability to work well in oil and water, but drew attention to its incompatibility with pigments containing sulphur, such as French ultramarine, which cause it to discolour, and its tendency to become brown in damp conditions.\* It is also affected by alkalis, and like Scheele's green it is extremely poisonous. Use of the pigment for house-painting by the end of the period under consideration cannot be certain, but Schweinfurt green was added to the list of pigments included in The Painter's... Manual [c. 1830];\* whilst Lewis Berger

\*384

had noted Braconnot's process in 1829 and seems to have commenced production of the pigment by 1830.\* The formula used in 1831 was given as follows:

'Take 100 lb Roman Vitriol & dissolve the same in ab.<sup>t</sup> 40 Gall<sup>s</sup> boiling Water[.] Take 152 lb Sugar Lead & dissolve in ab.<sup>t</sup> 44 Gall<sup>s</sup> Cold Water, add this solution of Acetate Lead to the solution of Sulphate Copper -. When the Sulphate Lead has subsided draw off the Acetate Copper & add to the precipitated Sulphate Lead a further quantity of ab.<sup>t</sup> 20 Gall<sup>s</sup> cold Water The Acetate Copper from this to be added to the former making Sp[ecific] Gr[avity] abt 1033

'Boil 30 Gall<sup>s</sup> Water & at the boiling point put in 29 lb Sub Carbonate Soda [15 lb of pearl ash was later substituted], let this completely dissolve & keep the liquor on the strong boil when 66 lb Powder White Arsenic is to be added & when this is completely dissolved add the same to the Acetate Copper: Stir well for ½ hour when struck'.

\*385 The cost of production was 1s. 9d. per pound.\* It seems clear that by the middle of the century the pigment was in fairly common use, at least for wallpaper printing since this application is mentioned specifically by both Church and Hurst, although the latter indicated its employment had been on the decrease during its closing decades.\*

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#### PRUSSIAN GREEN

Although the term Prussian green was often applied during the 1820s to the pigment described above under the heading 'Chrome yellow Brunswick green' the name was earlier used for a green pigment prepared by omitting the hydrochloric acid from the manufacture of Prussian blue. In the absence of other references to Prussian green, in connection with house-painting, its inclusion by Martin and Nicholson in their lists of pigments should probably be disregarded in view of their obvious derivation from Dossie, who described the pigment in a much wider context,

Inorganic  
yellow  
pigments

Of all groups of pigments available for use in house-painting, the yellows undoubtedly provided the eighteenth-century designer and craftsman with their greatest problem. Although yellow ochre is one of the most stable pigments known, even today, and works with equal facility in both oil and distemper, the brightness of its colour is limited; whilst the two bright yellow inorganic pigments available during the late seventeenth century, orpiment and massicot, were both considerably more expensive. Employment of the latter was probably limited by this factor to fine art purposes, whilst orpiment was only worked with difficulty and was, moreover, an extremely unpleasant substance to handle; so that, although both were reasonably stable, these constraints seem more or less to have precluded their use. In contrast, the organic yellow pigments, which were reasonably cheap and of bright colour, were extremely fugitive; and although they worked well in both oil and water, they were transparent and of low staining power in the former medium, so that their full potential for depth of colour could only be exploited in distemper or when used as a glaze in oil. They were thus unsuited to application over large plain areas as oil colours on account of the difficulty of obtaining an even texture, and hence, for house-painting purposes, were pre-eminently distemper pigments.

It was not until well into the second half of the eighteenth century that two practicable substitutes appeared; but again, neither provided an entirely satisfactory solution. Naples yellow was gritty in nature, expensive, and still lacked brightness of colour, whilst patent yellow, although bright in tone and cheaper in price, was subject to rapid discolouration in both oil and distemper. Indeed, it was only at the very end of the period under consideration, when it became possible to manufacture chrome yellow at a moderately economical price, that the eighteenth-century problem of a suitable bright yellow pigment, needed especially for the mixing of greens, was overcome in a reasonably adequate way.



## NATIVE OCHRES AND RAW SIENNA

Yellow ochre occurs extensively in many parts of the world as a natural, coloured earth. It forms one of a group of pigments, the ochres, siennas, and umbers, which, being naturally formed substances vary slightly in composition so that it is often difficult to place any one specimen in a particular category. In general, however, ochres contain no manganese, the colouration being entirely due to the presence of various hydrated ferric oxides in the earth or clay; siennas contain a much greater proportion of colouring matter together with a small proportion of manganese oxide, rendering the pigment more transparent in oil; whilst umbers contain still more manganese oxide and are brown in colour. In all cases the hue of the pigment may be changed by roasting to produce red ochre, burnt sienna, or burnt umber.

### Sources of yellow ochres in the British Isles.

Yellow ochres have been obtained from many places in Britain. Heaton lists ochre from Oxfordshire which he describes as 'soft and transparent, with a peculiar brownish-yellow tone'; ochre from the Golden Valley near Bristol, 'brownier in tone than the French ochres, and more opaque than the Italian'; Derbyshire ochres from the Matlock district, 'dark and reddish in tone'; and a bright ochre found in the Vale of Avoca, Co. Wicklow, 'of fine texture and deep golden colour, slightly transparent'.\* Samples of the last of these in addition to specimens from the Bristol area and the vicinity of Tavistock, Devonshire, are to be found in the collections at the Institute of Geological Sciences, South Kensington, together with material deposited from mine-water in old Cornish workings, which has also, apparently, been exploited as a pigment.\*

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\*389 Hurst mentioned ochre from Cornwall, and indicated the existence of deposits in Scotland, Cumberland, Merioneth, Caernarvon, and Anglesey, describing the Welsh varieties as rather duller than Oxfordshire ochres.\*

\*390 Yellow ochre occurs too in the Forest of Dean, Gloucestershire, pigment from this source being mentioned by the seventeenth-century contributors to the Philosophical Transactions, Henry Powle

\*391 and Richard Waller.\*

\*392            Although, since Reynolds specified its use,\* it is  
clear that English ochre was being exported to America  
during the early nineteenth century, the extent to which  
British sources were individually exploited during the  
period under consideration is in most cases obscure. In  
1786, however, Lewis Berger was in correspondence with  
John Pyne Esq. at East Down, Devonshire, asking to be sent  
samples of the ochre he could supply, suggesting that  
Devon pigment may have been on the market during the late  
\*393            eighteenth century;\* whilst reference to 'common Brown or  
Bristol Oker' was made by Pincot in the early nineteenth,  
\*394            and 'Bristol Yellow Ochre' was mentioned by Vanherman.\*  
\*395            Bristol ochre was listed also by Tingry's editor,\* and it  
is clear that ochres from the vicinity of the city (perhaps  
from the Golden Valley near Wick, or from other parts of  
\*396            the Mendips, where Hill had mentioned seeing ochre),\* were in  
fairly common use, especially since Berger had a stock of  
\*397            nearly 131 cwt. of 'Bristol Oker' on 1st January 1810.\*  
Undoubtedly, however, it was the Oxfordshire pigment which  
was the most famous, probably on account of the superb  
quality of that obtained from Shotover Hill, which lies  
four or five miles east of the university city. John Smith  
observed that 'Plain-Oaker' was,

'Plain ochre'

\*398            'a certain concret, or stony substance, found among  
stiff Clays in divers parts of this Kingdom; but  
those parts that contain most of it, is the Shotover-  
Hills near Oxford, from whence most of the Yellow-  
Oaker, that is sold in England, is due out; 'tis a  
Colour, that with pains, will grind very fine, it  
bears an excellent body, and resists the weather well.'\*

A detailed account of the extraction of ochre at Shot-  
over in the second half of the seventeenth century was pub-  
lished by Robert Plot in The Natural History of Oxford-  
Shire (1677). The diggings were, he indicated, on the  
east side of the hill to the right (i.e. presumably south)  
of the road from Oxford to Wheatley, the vein, which was  
between two and seven inches in thickness, lying at a depth  
of between seven and thirty feet. The ochre was of two  
kinds, the 'stone Ochre', which was ready for use as soon

as dry, and the 'Clay Ochre', which, he continued,

'because of the natural inequality in its goodness, they wash and steep two or three days in water, and then beat it with clubs on a plank into thin broad cakes, of an equal mixture both of good and bad: they then cut it into squares like Tiles, and put it on hurdles laid on trestles to dry, which when thoroughly done 'tis fit for the Merchant.'

He also mentioned that a bed of slightly more reddish colour underlaid the yellow, and that elsewhere in the vicinity, at Garsington and Pyrton, there were deposits of less good quality; whilst ochre obtained from between Ducklington and Witney, which lie just over ten miles west of Oxford, was employed for inferior purposes.\*

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'Stone ochre'

The term stone ochre continued in use well into the nineteenth century, when it seems to have been applied to ordinary grades of Oxfordshire pigment, rather than the very finest, which was, as indicated below, considerably more expensive. These were, however, of high grade compared with other English ochres, and were used for purposes of house-painting where a good quality of pigment was required. A small quantity of stone ochre, for example, was supplied to John Soane in 1803,\* whilst Pincot suggested its purchase for house-painting ready ground in oil, and mentioned its use also in coach-painting.\* Butcher included it in oil mixtures for fawn, green, and Portland-stone colour, and also indicated its employment in tinting grounds for the imitation of oak.\* References occur, moreover, in the archives of Lewis Berger's company to 'Secc.<sup>d</sup> Oxford Stone Oker', and in Crosby's Builders' New Price Book to 'Oxford stone ochre'.\* Besides stone ochre, about 1800 James Crease indicated in his book on varnishing, Elegance, Amusement, and Utility (n.d.), that Oxford ochre was alternatively called light ochre,\* a term employed by Nicholson, who used 'light ocher' in the preparation of olive colour, elsewhere suggesting the use of Oxford ochre to make olive green oil paint.\*

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'Light  
ochre'

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Prices of  
English ochres

English ochres varied widely in price. In 1802, for example, Lewis Berger had modest stocks of 'Lump English Oker' valued at 6s. 6d. per cwt. and the same in powder form at 7s. In 1806 the price of the latter had risen to 8s., and in 1810 his total stock of lump and powder English ochre was just over 108 cwt. at prices comparable with those already mentioned.\* In this latter year, he had in addition nearly 131 cwt. of 'Bristol Oker' valued at 7s. per cwt. which compares well with the price of 6s. quoted by Vanherman some years later.\* In contrast Berger valued his stock of 'Fine Oxford Oker' at 84s. per cwt. in 1802, 'Oxford Oker' appearing at the same rate in 1806 and at 90s. in 1810, his stock in that year being less than a mere 2½ cwt. Although 'Secc.<sup>d</sup> Oxford Stone Oker' was markedly cheaper in 1802 being valued at 28s. per cwt., by 1806 its price had risen to 50s., and by 1810, when his total stock was nearly 27½ cwt., the rate stood at 57s.\*

Spruce ochre and  
varieties imported  
from Holland

In view of the considerable range of pigments furnished by British sources it is, perhaps, at first surprising to notice the large quantities of yellow ochre imported from Europe. In the first edition of his book, John Smith divided yellow ochres into two classes, English and foreign, the first (called in the second and later editions plain ochre) being, he said, light in colour, and the second (subsequently called Spruce ochre) darker in shade.\* Rosamond Harley indicates that 'spruce' is an old form of the word Prussia, or Prussian, an observation corroborated by references such as that of Tingry's editor to 'Dutch or spruce ochre' since a great deal of pigment seems to have been shipped from Dutch ports.\* Although John Houghton in association with the transcription of Plot's account of the Shotover workings given in his series of pamphlets A Collection for Improvement of Husbandry and Trade (1692-1703); stated that only one barrel of ochre was imported from Holland in 1697,\* Dr. Harley, by research amongst eighteenth-century customs ledgers, has been able to show that increasing quantities later became shipped into England.\* As might be expected, therefore, spruce ochre appears in the letter books of Lewis Berger,

who was quoting prices of 16s. per cwt. for the supply of fine spruce ochre in 1788, common spruce ochre being offered at rates from 9s. to 12s. Although in 1802 he valued his stock of just over 9½ cwt. 'Dutch Lump Oker' at 15s. per cwt. and 5½ cwt. 'Dutch Spruce oker' at 17s., these prices rose rapidly during the first decade of the century. In 1806, when his combined stock stood at nearly 61 cwt., the rates had become 18s. and 21s.; and in 1810 30s. and 32s. (the latter price here being for 'Gen[ui]n<sup>e</sup> Dutch Spruce Oker', with an additional price of 28s. being given for 'Spruce Oker Mix'd'), whilst his combined stock of all Dutch ochres had fallen to just over 43½ cwt.\* It seems clear, therefore, that these imported ochres represented a middle quality occupying the gap between the comparatively expensive but high quality Oxfordshire ochres, and the common pigment obtained from elsewhere in the British Isles.

French sources  
of yellow ochre

A similar relationship in price between the cheapest pigment and the middle grade, known in France as ocre de ru is apparent in the price list published by Rondelet, who gave a rate of 45c. per pound for the latter against only 17c. for ocre jaune commun.\* With regard to specific French sources of pigment, Watin and Tingry mentioned the jaune de Berry, which Rosamond Harley indicates had been obtained at Vierzon from Roman times until the nineteenth century; and Tingry referred also to yellow ochre from the Auvergne.\* Although 6 lb. of 'fine french Oaker' are mentioned in an account dated 1704 amongst the papers at Boughton House, French varieties either of yellow or red pigment do not seem to be mentioned by English writers on house-painting during the period under consideration;\* but, passing over their omission by John Smith, it has to be borne in mind that little treating the subject of house-painting in any completeness was published in England during the eighteenth century, and that it was not until after the disruption of trade by the Napoleonic wars that any comprehensive works appeared. Nevertheless, it is clear that French pigment of either yellow or red colouration was being imported during the eighteenth century, since Lewis Berger was giving quotations for 'French Oker in

\*417 Lumps' at prices from 18s. to 20s. per lb. and the same 'in Powder' at 12s. to 18s. in 1780.\* Significantly, however, there is no mention of French ochre in his early nineteenth-century stock-lists.

Italian and  
other sources

\*418 Yellow ochre also occurs notably in Italy, Cyprus, and India; pigment from the last of these sources being mentioned by Whittock in connection with the imitation of Siena marble in distemper.\* With the particular exception of terra di Siena, however, neither of the other two is mentioned by English writers on house-painting, although both were probably being exploited during the eighteenth century. Certainly umber (q.v.) was being imported from Cyprus, but this, of course, need not necessarily imply importation of ochre from the same source. With regard to Italian ochres, Lewis Berger had small stocks of 'Roman Oker' amounting to 2 cwt. in 1802 and just over 1 cwt. in 1806, in both cases valued at 7s. per cwt.; whilst in 1810 he again had 1 cwt., this time valued at 8d.\* These prices were, of course, very close to that of the cheapest English pigment; and, whilst English writers on fine art from the seventeenth century onward make mention of Roman ochre, which was regarded as having a reddish cast,\* it seems unlikely to have been imported extensively on that account for house-painting.

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'Raw sienna'

The yellow earth from the vicinity of Siena, which came to be known as raw sienna, on the other hand, was undoubtedly used to a certain extent in graining, and possibly too for other decorative work. Terra di Siena was described by Dossie and by Watin, and its transparency in oil compared with ordinary yellow ochre was clearly its most valuable property.\* Whittock particularly included it in his list of transparent pigments used without white lead as glazes, and, together with Butcher, Vanherman, and Nicholson, mentioned its use in graining, where this property was sought.\* However, although he suggested in addition that it had considerable value as a distemper pigment,\* and Lewis Berger had small stocks of 'Yellow Sienna' in the first decade of the nineteenth century at prices comparable with those of the Dutch ochres,

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the pigment was generally much more expensive than these; and it seems most probable that Whittock was referring to graining or marbling executed in a distemper medium rather than employment of raw sienna as a tinting pigment for ordinary purposes. In 1788 Lewis Berger was quoting 6s. per lb. for 'Terra de Sienna', but by 1802 he valued his stock of over 18 cwt. at the rather lower figure of 84s. per cwt.; and the price seems to have fallen slightly further in subsequent years, so that his stock of nearly 80 cwt. in 1806 was priced at 80s. per cwt., and his 1810 stock of just over 21½ cwt. at only 70s. In 1802 he had in addition just over 2½ cwt. of 'Small Terre de Sienna' valued at 40s. per cwt. together with 2 cwt. 'Yellow Sienna' at only 17s., a similar quantity of the latter appearing at the same rate in 1806.\* By comparison, 'Distemper Oker' was a much cheaper pigment than even the last of these, being valued by Berger at 7s. per cwt. in 1802, and 5s. 9d. in 1806 and 1810. Although his stock was fairly small in 1802 at just over 12½ cwt., by 1806 it had risen appreciably to over 177 cwt., and in 1810 stood at 181½ cwt. with, in addition, a further quantity of nearly 22 cwt. valued at the rather higher price of 10s.\* It seems most unlikely, therefore, that even the cheap varieties of raw sienna would have been destined for use in common distemper work.

The general position regarding the use made of different varieties of yellow ochre, a pigment of almost universal application in both oil and size media, thus seems clear. Local sources of varying quality would undoubtedly have been exploited from very early times and employed for vernacular purposes; and yellow ochre was, naturally, one of the six pigments the London plasterers were allowed to use under the 1603 Act of Parliament.\* During the eighteenth century cheap varieties of the pigment, often brownish or dull in colour, were used extensively in distemper and for inferior painting in oil, particularly perhaps for exterior work. For better quality interior painting both Dutch and French ochre, when available, were employed; together with the second grades of Oxford ochre. Thus, Vanherman summed up the useful character of spruce ochre as,

\*427 'a pleasant, warm, and friendly pigment in forming greens, buffs, and stone colours;... [which], combined with reds or browns, produces countless tints of pleasant drabs, sage, olive, tea greens, &c.'\*

For graining or marbling, however, the finest Oxford ochre and Italian raw sienna, with their increased transparency, were needed, but obtained at considerably greater expense.

Retail of yellow ochres

\*428 As indicated by Pincot and Tingry's editor, besides being sold in lump or powder form, yellow ochres were available ready ground in oil;\* and Stalker and Parker also  
\*429 mentioned its sale in this form.\* Lewis Berger was offering 'Spruce Oker in Oil' for sale in 1788 at 36s. per cwt., and had modest stocks of 'Gro.<sup>d</sup> Spruce Oker' during the first decade of the nineteenth century, generally valued at twice or one and a half times the price of that supplied in the lump. These amounted to 3 cwt. in 1802, nearly 4½ cwt. in 1806, and nearly 1½ cwt. in 1810 priced at rates  
\*430 of 34s., 38s., and 40s. per cwt. respectively.\* It must be observed, however, that in general retail prices for yellow ochres seem to have been considerably higher than those used by Berger for the valuation of his stock; although these, being employed for business purposes, must undoubtedly be regarded as reliable, and, as indicated above, correlate well in the case of the Bristol ochre with the price given by Vanherman, himself in the retail trade. Thus at Doncaster in 1825, even for colour-washing the  
\*431 Workhouse, yellow ochre was bought at a cost of 3d. per pound, the equivalent of 28s. per cwt.\*, a figure considerably in excess of those between 5s. and 10s. for distemper ochre appearing in the Berger archives; and spruce ochre was supplied both to Soane in 1803 (some in ground form) and at Tredegar House, Newport, Monmouthshire (now Gwent), in 1792-3 at a rate of 6d. per lb., equivalent to 56s. per  
\*432 cwt.,\* against the figures of 9s. to 17s. which appear in the Berger archives between 1788 and 1802. Moreover, the general retail price of yellow ochre for house-painting about 1800 seems to have been 4d. per lb. (i.e. 37s. 4d. per cwt.), this being the rate charged for the supply of



\*433 pigment in connection with sundry works at Doncaster between 1798 and 1803 and for pigment sold to Soane in 1803.\* Interestingly, the same rate is found in an account dated 1705 at Boughton House, Northamptonshire, for a quantity of 'English Oaker' totalling just over  $\frac{1}{4}$  cwt.,  $\frac{1}{4}$  cwt. 'Reff<sup>d</sup> English Oaker' being billed at 5d., and 6 lb. 'fine french Oaker' being costed at 8d.\* Although the reasons for the discrepancies in price are obscure, it is significant that the differentials, even if slightly telescoped, are maintained throughout; and the same is true of those given by Phillips in 1812:

	English ochre	8 $\frac{1}{2}$ d. per lb.
	Spruce ochre	10d.
	Lump ochre	1s. 2 $\frac{1}{2}$ d.
	Oxford stone ochre	1s. 2 $\frac{1}{2}$ d.
*434	Raw terra Sienna	3s.*

\*435 These are, as usual, well above those encountered elsewhere and similar to those he gave in 1821.\*

#### MANUFACTURED IRON OXIDE - MARS YELLOW

'York brown'

\*436 The recipe for York brown dated 1824 which appears in the second of Lewis Berger's experimental notebooks and was later transcribed in slightly amended form into the 1831 formula book is the only reference so far encountered to an artificial yellow iron oxide pigment in a possible house-painting context; although such pigments had been known since the seventeenth century and seem to have come into use for fine art purposes during the late eighteenth.\* The formulae among the Berger papers employ lime and ferrous sulphate, but at least by the late nineteenth century precipitates based on aluminium hydroxide formed in a way comparable with that used in the preparation of lake pigments seem also to have been produced;\*

\*437 and there is no reason why these too should not have been available at a much earlier date. Although in 1810 his stock of just over 3 cwt. of York brown had been valued at 80s. per cwt., in 1831 the production cost of pigment made by the following method was noted by Berger as 9s.

10d. per cwt.:

'O cwt. 1 [qr]. 21 [lbs.] Flace lime [the 1824 formula employed 'Common Lime'] Slack'd with cold Water, to which add ab<sup>t</sup> 17 Pails more cold water & pass same thro' a 68 Wire Sieve into Iron Pan -

'Dissolve 1 cwt. 2. O. Sulphate Iron in ab<sup>t</sup> 20 Pails boiling Water & when settled add it in that state to the Lime

'Let the whole stand together for ab<sup>t</sup> 2 Days [stirring] when draw off as much of the water as is necessary for filling [filtering] out thro' a Hair Sieve, when stiff enough lay upon racks in thick Cakes & carry into Stove - when dry expose it for some time [five or six weeks are mentioned in the 1824 recipe] to the action of the air'.\*

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No information is presently available, however, to indicate the extent to which such pigment may have been used or what advantages if any it may have possessed, since, unlike natural ochre, the artificial pigment prepared by the above method would have contained a large percentage of calcium sulphate.\*

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#### ORPIMENT, KING'S YELLOW, AND REALGAR

Two sulphides of arsenic occur in nature, orpiment (arsenic trisulphide) which is yellow, and realgar (arsenic disulphide) which is of a deep red colour and known alternatively as red orpiment. They are found in a number of places including Somerset, but British sources are not of commercial significance, and Hill writing in the mid-eighteenth century mentioned Germany as a source of material used in England. He described orpiment as 'a very beautiful Substance, composed of large Flakes... of a glorious Yellow, very weighty', noting that yellow orpiment could be burnt to produce red orpiment with the emission of a nauseous smell. He also observed that there were,

two other less beautiful Kinds; the one composed of an impurer Substance, resembling common Sulphur... the other more impure than the last, and tinged of a paler or deeper Green in many Places.'

Later he remarked of these poorer qualities, 'the yellow looking more like dirty Fragments of common Brimstone, and the red like dusty pieces of bad Bole [red ochre]', that they were,

'purchased by our Painters for Cheapness; and they say, with proper Management, makes as good Colours as the finer Pieces; though, in their Barrels, they look more like Ashes than the beautiful Substances they really are.'\*

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This last observation no doubt referred to the process of refining mentioned by his near contemporary, Dossie, who remarked that the pigment was rarely used in its natural state, and was known after purification as king's yellow. However, Dossie also described the artificial manufacture of king's yellow by roasting twenty parts of arsenious oxide with one of flowers of sulphur. The product could, he indicated, be made more orange by increasing the properties of sulphur, and following sublimation was levigated to fit it for use.\* Watin too mentioned artificial orpiment, observing that this was the more commonly encountered and should be as red as possible, although the natural variety, which should be of a golden yellow, was, he said, held in higher estimation. They produced, he noted, a marigold colour.\* This, Tingry observed, could also be achieved by slight calcination of the yellow pigment,\* an idea repeated by the author of the Painter's... Pocket Manual.\*

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Although king's yellow is a bright pigment with a good body in oil, it has a number of disadvantages in practical use. In the first place it discolours when mixed with pigments containing lead or copper, in particular white lead and verdigris, owing to the formation of the blackish sulphides of these metals; whilst Butcher

\*445 also observed that it would blacken if touched with an  
iron knife.\* Secondly, when used in oil the pigment has  
a tendency to clump together over a period of years pro-  
ducing a speckled effect unsatisfactory in appearance.  
\*446 Thirdly, although Heaton indicates that pure arsenic  
sulphide is non-toxic,\* impure varieties, such as might  
have been prepared during the eighteenth century, are  
liable to contain free arsenious oxide which is highly  
poisonous. Hence Dossie described the pigment as poison-  
\*447 ous and unpleasant, and rejected by many,\* and John Smith  
too cautioned that orpiment was,

'a good Colour for some uses, but very troublesome  
to grind, being a Mineral stony substance of a  
poysonous nature; therefore take care that the  
fumes of it don't offend the brain in the time of  
\*448 grinding.'\*

Even when applied to the wall as a paint it provided prob-  
lems, and Vanherman warned he thought it,

'necessary to caution the use of it, unless any one  
has a wish to be driven out of house and home with  
his family; in that case, he has only to order one  
small apartment to be painted with King's yellow,  
and he will be gratified; for the smell cannot be  
confined, but sends its vile effluvia into every  
corner of the house, and, instead of growing weaker,  
it gains strength every day, and the only remedy...  
is to bestow on it two coats of patent yellow, and  
then two coats of light carriage varnish. This  
pigment... should be excluded, not only on account  
of the above annoying quality, but also its anti-  
\*449 pathysing with most other colours.'\*

\*450 Although apparently used in heraldic painting\* and  
discussed in most books on house-painting the general  
impression given by the references to the pigments these  
contain is that its inclusion was more for the sake of  
completeness and, as a matter of form, to warn against its  
use, than for any practical use to which it might be put.

Watin, for example, listed l'orpin ou realgal amongst colours which were dangerous and which he advised should be used as little as possible. Thus, although he mentioned they could be employed in combination to mix jaune citron ou aurore in oil, he suggested the substitution of pink or Naples yellow;\* and Tingry later indicated that the former was an obsolete method for the preparation of lemon yellow.\* He nevertheless used realgar in a mixture for golden yellow,\* and the author of the Painter's... Pocket Manual also used them in gold colour and lemon yellow.\* Most significantly, however, John Smith did not mention either in the pigment list he gave in the first edition of his book; and their unpopularity at the beginning of the nineteenth century is underlined by the low stocks held by Lewis Berger. In 1802, 1806, and 1810 his stocks of yellow orpiment stood only at 2 lb., 5 lb., and 26 lb. respectively, his holding of king's yellow at the same dates being 87 lb., 36 lb., and 195 lb.; whilst of 'Orange Orpiment' he had similarly low amounts of 1 lb., 7 lb., and 69 lb.\* Hence, although red and yellow orpiment were not excessively expensive as pigments (Lewis Berger quoting prices for supply of the latter at between 1s. and 1s. 6d. per lb. in 1780 and valuing his stocks of yellow and orange orpiment at prices between 1s. 1½d. and 1s. 8d. per lb. during the first decade of the nineteenth century) it seems clear that the practical limitations on their uses prevented their general employment for house-painting. King's yellow, whose use was similarly limited, was rather more expensive, Berger valuing his stocks between 1802 and 1810 at prices between 3s. 6d. and 6s. per lb.;\* but it was put forward by Whittock for mixing cinnamon and a light delicate green in distemper, and also for the rather specialised purpose of a glaze in the imitation of verde antico marble in distemper.\* His suggestion that it formed a most beautiful green with blue may, however, be traced to Dossie, and is therefore unreliable as evidence for its use in house-painting.\* Whittock's comments suggest, nevertheless, that it was used in distemper (perhaps smelling less unpleasant than in oil); and realgar certainly seems to have enjoyed a very specialised use (described in the section on imitations in Chapter II below) in the production of

clouded ceilings during the first few decades of the nineteenth century.

#### MASSICOT

Although mentioned extensively in the literature on house-painting the nature of the pigment known as massicot has been the subject of considerable discussion, since no good description of its manufacture seems to survive, and, by the mid-eighteenth century, terminology had become confused. In modern times especially, the name has been used as a synonym for canary litharge, one of two forms of lead monoxide used as a drier which are discussed below. Although this is often fairly similar in appearance to the pigment originally known as massicot, canary litharge is quite unstable, blackening rapidly on exposure to the air, and it seems clear the attribution is false. It is, moreover, significant that, although the chemical natures of litharge and massicot were confused by writers from the 1750s onwards, the former term was always more or less exclusively applied to a drier and the latter to a staining pigment.

It has now been recognised that massicot was originally a lead-tin oxide, which seems to have been made during the late sixteenth century in Flanders and Germany. G.P. Lomazzo, whose Trattato dell'arte de la pittura was published in Milan in 1584 and translated for publication in English as A Tracte containing the Artes of Curious Paintinge (1598) by Richard Haydocke, referred to the 'Yellow of the Flaunders fornace' and that of 'Almany' (Germany), which, he observed, were commonly called 'masticot' and 'generall'.\* Notably, 'masticot' was described by Waller as an 'improper calx of tin',\* and has now been identified in European paintings of dates ranging from the early fourteenth to the mid-seventeenth centuries.\* 'Masticote' was described by John Smith as 'a good light-yellow for most uses' which ground very fine and had a good body in oil;\* whilst Dossie, although mistaken as to the chemical nature of the pigment, indicated that it stood well in oil or water.\* It is clear that its colour could vary quite

'generall'

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widely, since Smith referred to 'White Masticote' and  
\*464 'Yellow Masticote';\* and Stalker and Parker mentioned  
'Yellow and pale Masticott', indicating that it was sold  
\*465 at 2d. per ounce,\* a price (equivalent to 2s. 8d. per  
lb.) which may be compared with those contained in a  
manuscript of about 1600 attributed to Edmonde Barton,  
of 6s. 8d. and 3s. 4d. per pound for 'Masticotte' and  
\*466 'Generall' respectively.\* It is clear therefore that  
massicot was not one of the cheapest pigments, and was  
thus unlikely to have been used for general purposes in  
house-painting. Moreover, although John Smith indicated  
that it was especially useful for making greens of several  
types, it is significant that he did not include massicot  
in any of his suggested mixtures for house-painting, and  
\*467 illustrated its use only in colouring prints.\*

Turning to the mid-eighteenth century, Dossie observed  
that the pigment was not greatly used; and it seems to be  
from this point that confusion as to its nature occurred,  
since he described it as made by the gentle calcination  
of white lead, a seemingly unusual inaccuracy on his part,  
as lead monoxide, or litharge, rather than lead-tin oxide  
\*468 would result.\* Watin too (including it in his category  
of 'dangerous colours' to be used as little as possible)  
also indicated the manufacture of massicot in this way,  
describing three forms, which he said were obtained by  
different degrees of heat. These were blanc, jaune,  
\*469 and doré,\* which, perhaps presenting a superficial resem-  
blance to the different colours of true massicote, could  
also represent the three forms in which lead monoxide  
(litharge - q.v.) is still commercially available today.  
Tingry repeated this; but identified massicot specifically  
with canary litharge, adding significantly that it had  
been employed before being superseded by Naples and  
\*470 patent yellows;\* and Ure too continued the error, des-  
\*471 cribing massicot as the yellow oxide of lead.\* As usual,  
the descriptions of the pigment given by Martin and  
\*472 Nicholson can be traced to Dossie;\* whilst William  
Butcher's suggestion that:

'FLAKE WHITE, put in lumps into a crucible, may be

burnt,... which will produce a beautiful warm colour, like the setting sun, of great use in making a variety of tints, for paneling, &c.'

can perhaps, be related to the teinte-dure made from white lead 'qui ne soit pas trop calcinée' mentioned by Watin. Nor does Butcher's indication that the 'secret is known to very few' suggest that litharge was widely used as a staining pigment.\*

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It seems possible, nonetheless, that true lead-tin massicot was still on the market during the early nineteenth century since Lewis Berger had a small stock of just over 1½ cwt. of 'Masticott' in 1802 which was valued at 9d. per pound against rates equivalent to approximately 3½d. or 6d. for litharge (q.v.), although he had no stock in 1806 or 1810.\* Rosamond Harley notes that the London Artists' colourman, Ackermann, was supplying 'massicot' in cake form for water-colours at the beginning of the nineteenth century,\* and a sample appears in the notebooks of George Field, dated 1809.\*

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Analysis of this might confirm it was indeed lead-tin yellow that was still available, although in his book Chromatography of 1835 he described it simply as an 'oxide of lead'.\* Evidence for its use in house-painting at this date is, however, scant; and although a mixture of 'masticot' with an organic yellow pigment appears in the list published by Phillips in his builders' price book, this contains a number of pigments more or less reserved for use by artists.\* Only Nicholson and the author of The

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Painter's... Pocket Manual referred to massicot in an unambiguously house-painting context, the former suggesting its use in mixing straw coloured distemper, and the latter in making gold colour.\* Neither seems to carry much weight, and although it is not impossible that lead-tin yellow was still in use for house-painting by this date, the use of litharge for this purpose may be discounted on the grounds mentioned above. Bearing in mind the conclusion which has been reached that during the late seventeenth century the pigment was more or less reserved for the use of artists, it is probably safe to suggest that use

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of massicot in ordinary house-painting at any time during the period covered by this study would have been quite exceptional. This is not to say, of course, that it may not have enjoyed employment to some extent, especially before the mid-eighteenth century, in arabesque or other small scale decorative work.

#### NAPLES YELLOW

\*480 The nature of Naples yellow, a lead antimoniate compound, was unknown to Dossie, who indicated that it was seldom used;\* but this was the subject of research during the mid-eighteenth century, and although originally a pigment of natural origin, it was being prepared artificially by 1766, when Fougereux de Bondaroy read a paper giving  
\*481 details of its manufacture.\* The original formula (the secret of which was said to have been in the possession of an aged Neapolitan) was re-published by Tingry together with de Bondaroy's: 12 oz. white lead, 2 oz. antimony sulphide,  $\frac{1}{2}$  oz. calcined alum, and 1 oz. ammonium chloride were to be roasted together at red heat in a crucible for three hours, although by varying the proportions of the constituents the colour might be varied to become more  
\*482 golden in hue.\*

Naples yellow was put forward by Watin, who was familiar with de Bondaroy's work, as a substitute for orpiment in the preparation of jaune citron ou aurore; and he employed it also in couleur d'or and chamois, stipulating  
\*483 its plentiful addition in the last.\* It is of considerable interest, therefore, that paint of 'naples Yellow' colour was used in the early 1770s in the Dining Room of a house at Norwood, Middlesex associated with the Osterley Park estate, although it cannot be certain that this necessarily  
\*484 implies use of the pigment itself;\* whilst a decade later at Gordon Castle, Morayshire (demolished 1961), the Long Bow Room was painted 'Naples Green', suggesting, perhaps,  
\*485 use of the pigment also in combination with blue.\* Watin's suggestion that Naples yellow might be used for lemon and golden yellows was repeated by Tingry (who mentioned also its employment for yellows generally and illustrated its

\*486 use in distemper, oil, and varnish),\* and similar ideas  
\*487 duly appeared in the Painter's... Pocket Manual;\* but  
other references to the employment of Naples yellow for  
ordinary purposes of house-painting are elusive. Thus,  
\*488 although Hurst indicated that Naples yellow was equally  
\*489 useful in oil or water,\* Church noted that it was liable  
to discolouration in the latter medium;\* and the pigment  
was troublesome to grind, being gritty in texture. It  
seems most likely, therefore, that having itself super-  
seded orpiment Naples yellow was quickly replaced by  
patent yellow during the 1780s. This at least had the  
advantage of price on its side if not of durability when  
used in oil or distemper. Martin and Nicholson, of course,  
included Naples yellow in their colour lists transcribed  
more or less directly from Dossie, but mentioned its  
\*490 practical use only in connection with graining;\* and it  
is notable that Butcher, although he included it in a  
group of pigments discoloured by contact with a steel  
knife, did not list it in his main series of house-painting  
\*491 pigments, nor indicate its use for any purpose in his text.\*  
Moreover, mention of this pigment is omitted entirely from  
Whittock's authoritative work on graining, and also from  
\*492 Vanherman's eminently well informed book.\*

The evidence provided by examination of Lewis Berger's  
stock-lists tends to confirm the pigment was not one of  
the staples of the trade, since the amounts he possessed  
were subject to considerable fluctuation. In 1802 and  
1810, for example, he listed Naples yellow at 2s.9d. and  
3s. per lb. respectively, and 'Levigated Naples Yellow' at  
1s. and a price equivalent to 1s. 3d. per lb., although  
why the legivated pigment should have been cheaper is not  
clear. His combined stock in 1802 stood at a mere 10½ lb.  
but in 1806 he had nearly 9½ cwt. at a price equivalent  
to 1s. 3d. per lb.; whilst by 1810 this had fallen again  
\*493 to just over 3 cwt.\* Although clearly available, therefore,  
it was quite costly (in 1812 and 1821 Phillips quoted  
\*494 prices of 3s. 7d. and 3s. 6d. per lb.)\* and it is impos-  
sible to suggest from these figures that the pigment  
enjoyed universal or widespread use for house-painting,  
especially bearing in mind its application in ceramic

glazes. Taking this and its cost into account, it appears likely that by the early nineteenth century Naples yellow enjoyed minimal employment as a house-painting pigment.

#### PATENT YELLOW

- \*495 Patent yellow had been discovered by Scheele approximately ten years before James Turner took out a patent for its manufacture in England in 1781.\* The pigment, basic lead oxychloride, could be prepared by mixing four volumes of litharge and one of common salt in four volumes of water. The white paste which formed over a period of twenty-four hours was then washed, dried, and heated in flat vessels until it became the desired colour (that in Field's 1809 notebook is close to Munsell reference 7.5 Y 9/8).\*
- 'Turner's \*496 yellow' In England it became known as Turner's yellow; but Tingry recorded that although at one time it had been imported into France from Britain in cakes which were half an inch thick, the French chemist Chaptal had set up a manufactory in his home town, and the pigment had thus become known in France as Montpellier yellow.\*
- 'Montpellier \*497 yellow'
- \*498 Whilst the pigment worked well both in oil and water and Tingry indicated it was used for the same purposes as Naples yellow, it discoloured quite rapidly, so that, Field observed, on this account, it was little used 'except for the common purposes of house-painting'.\* Despite this unsatisfactory tendency, Butcher described patent yellow as 'a beautiful colour, of great utility', adding too that it was 'much used by coach painters'. For house-painting he suggested its employment in preparing fine yellow coloured paint, and also to make greens in combination with French verdigris and Prussian blue;\*
- \*499 whilst Nicholson too suggested its use for yellow paint and for
- \*500 mixing with Prussian blue to make a good green.\* The application of patent yellow in coach painting was mentioned also by Pincot, who used it with about four per cent
- \*501 of stone ochre;\* whilst an account dated 1787 for painting at Osterley Park included an item of 55 square yards of painting 'once in oil & twice patent yellow' at a rate of ls. per yard, together with a run of skirting 'the plinth

\*502 patent yellow'.\* A letter of 1809 notes the dispatch of  
a consignment of paint (presumably green) together with  
'a small quantity of Prussian blue - with which you make  
it Darker - and some pattend yellow with which you can  
\*503 make it Brighter';\* whilst further confirmation for its  
use in house-painting comes also from the price-books of  
Laxton and Skyring, in both of which 'patent yellow' is  
\*504 mentioned as a paint colour,\* and from Vanherman, who  
recommended it in place of yellow orpiment in order to  
avoid the unpleasant side effects of the latter. He  
believed, however, that it was unsuitable for mixing  
\*505 greens since it was, he said, 'unfriendly with the blues'.\*

Vanherman, who, as a colourman, may be regarded as a  
reliable authority, also stated that the coachmakers had  
been the chief consumers of patent yellow, but added that  
by the time he was writing its use had been superseded by  
that of chrome yellow. Nevertheless, he recommended it  
as a good ground colour for the latter, a suggestion which  
must have made good sense when the prices of around 70s.  
per cwt. for patent yellow in the 1806 and 1810 stock-  
lists of Lewis Berger are compared with the likely price  
\*506 of chrome yellow (q.v.) in 1831 of about 225s. per cwt.\*  
Tingry's editor of 1830 concurred that the pigment had  
been superseded by chrome yellow, but added that it was  
\*507 often used as an adulterant for it;\* and it is also worth  
drawing attention to Lewis Berger's practice during the  
second decade of the nineteenth century of using patent  
yellow as a base for a pigment which he called Dutch  
mineral discussed in connection with yellow lakes below.

No reference has been encountered to the use of patent  
yellow in distemper, although Turner had advertised it for  
use in water as well as oil; but its instability in this  
medium would probably be even greater than in oil (in  
which, experiment has shown, considerable discolouration  
could take place within a matter of months following expo-  
sure to the ordinary conditions of a domestic interior).  
In varnish, however, the pigment would be protected to some  
extent against damage, and this is undoubtedly the reason  
it was pre-eminently suited to coach-painting in which

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this medium was generally employed. In this connection it is most significant that when Vanherman suggested the use of patent yellow in place of orpiment, he recommended the subsequent application of two coats of 'light carriage varnish'. Nevertheless, it seems likely that the pigment was used to a moderate extent in an oil medium for house-painting between the 1780s and about 1825, both for yellows, and also on occasion for greens, although experience taught perhaps that it should be varnished; but after the introduction of chrome yellow its use in finishing coats declined rapidly, and, by the end of the nineteenth century, Hurst recorded its use had been more or less abandoned.\*

#### CHROME YELLOW, ORANGE, AND RED

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Lead chromate, or chrome yellow, must be regarded as the pigment for which the eighteenth century had been waiting, especially in its ability to provide a stable bright yellow or orange in oil without (although itself toxic) the dangerously poisonous qualities of orpiment or realgar, and in its capacity for mixture with Prussian blue to produce the range of greens discussed above under the heading 'chrome yellow Brunswick green'. The former quality in particular was lacking in all the brighter inorganic yellow pigments then economically available; whilst the organic yellows discussed below were extremely fugitive and, when ground into oil, transparent. The precise date at which chrome yellow was introduced as a pigment is uncertain, but its qualities seem certainly to have been known before Vauquelin isolated the element chromium in 1798. The pigment was mentioned by Sir Humphrey Davy in 1815, who observed that it was 'a much more beautiful yellow than any possessed by the ancients', and that there was reason to suppose that it was 'quite unalterable'; whilst Field tested samples at about the same time.\* This, and other evidence, suggests that chrome yellow was well established as an artists' pigment by the end of the second decade of the nineteenth century;\* but even in 1831 it was still fairly expensive, the cost prices of the range manufactured by Lewis Berger lying between 11½d. and 1s. 1½d. per lb.,

which suggests a retail price in the region of 225s. per cwt. By 1837, however, a cheaper variety called 'canary yellow', which was extended with barytes, was manufactured at a cost of 15s. per cwt.; and another, which he called 'imperial yellow', this time extended with gypsum, followed in 1840 at 13s. per cwt.

\*511 The pigment is produced by ionic exchange on addition of a solution of potassium bichromate to one of lead acetate. The first experimental notes on the manufacture of chrome yellow to survive amongst the Berger material are dated 1824, but reference is also made to a batch prepared in 1823. The cost price in 1824 was 2s. 5d. per lb.; and successive entries, including the production formula of 1826, show improvements and modifications to the process bringing the price down to those of the 1830s quoted above, together with an increase in the range of colours produced. By 1831 pale, mid, deep, and orange varieties were produced; extra pale, red, and extra red followed within two or three years; whilst in 1841 and 1844 the names 'Chinese red' and 'Persian red' were applied to pigments of this type.\* The range of colours possible results from variations in the proportion of basic lead chromate associated with the normal yellow chromate. As the amount of basic chromate increases the pigment becomes a deeper orange, whilst the red pigment is the most basic of all, containing up to two molecules of basic chromate to one of the yellow. The orange chromes may be used in distemper, but the yellow varieties are unstable in this medium, being attacked by its alkaline nature and converted to the orange variety.\*

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\*513 The first printed reference to chrome yellow encountered in connection with house-painting is by Vanherman, who described its preparation and praised the pigment as surpassing all others for brilliancy, beauty, and intensity of colour. He also mentioned that orange and lemon varieties were manufactured, and that the pigment had superseded patent yellow, suggesting its use in paint of stone colour and for mixing various greens.\* Tingry's editor of 1830 quoted Vanherman's formula, saying that for a time the pigment had been scarce and expensive; but by the time he was writing was being produced commercially.

although it was often adulterated with white lead or  
patent yellow. In particular, he observed that a superior  
\*514 type was being made at Chelsea by Dr. Bollmann,\* whose  
contribution to the manufacture of the pigment has been  
\*515 discussed by Dr. Harley.\* Chrome yellow also received  
mention in the more or less contemporary Painter's...  
\*516 Manual;\* and was included by Nicholson in the revised  
edition of The Builder's and Workman's New Director in  
which he described it as an excellent yellow lately much  
\*517 used.\* It seems likely, therefore, especially since the  
pigment was not mentioned by Butcher or Whittock, that it  
was only during the mid-1820s that chrome yellow became  
available at a price appropriate for house-painting, but  
that, once introduced, by the late 1820s it enjoyed exten-  
sive use in oil. Use of the darker red varieties is,  
however, unlikely to have been common before the next decade.

#### ROTTEN STONE

Rotten stone, not normally regarded as a pigment, is  
mentioned in Chapter II below in connection with its main  
purpose, the polishing of varnishes. Nathaniel Whittock,  
however, called for its use in staining yellow grounds for  
the imitation of oak and satin wood, and in the megilp  
which formed the basis of the glaze for the former, since,  
he believed, yellow ochre was too deep in colour and would  
\*518 impart an undesirable greenish tone to the work;\* but use  
of rotten stone in this way must have been exceptional.

#### Organic yellow pigments and dyestuffs

Organic yellow pigments, whose properties and relation-  
ship to the inorganic yellow compounds used for house-  
painting were briefly described in the introduction to that  
group of pigments, were prepared in the form of lakes from  
a variety of naturally occurring yellow dyes. In connection  
with eighteenth-century terminology, however, as Dr. Harley  
has pointed out, it is important to note that whereas the  
word lake is now of general application it was formerly  
\*519 applied only to reds,\* the equivalent term for yellows being  
pink.\* In general two white bases were in use as vehicles  
for the dye, chalk and aluminium hydroxide; although in  
certain circumstances white lead, satin white, and even

patent yellow were employed. In most cases the dyes would be mordanted onto the white by the use of alum (exceptionally, ferrous sulphate, often known as copperas, was used for brown pink); but in the case of aluminium hydroxide it is also possible to form the base in situ by adding an alkali to dye previously dissolved in water together with a quantity of alum. The latter base was used for the more expensive qualities of pigment; and these were considerably higher in price than those in general use for house-painting as may be seen from the table,\* which shows the cost prices per cwt. of the range of pigments being made by Lewis Berger in 1831.

\*Table (v)

#### The dyestuffs

Although the berries of various species of Rhamnus were apparently the most widely used source of dye until the extensive import of quercitron bark at the end of the eighteenth century, to at least some extent these and other dyestuffs seem to have been used interchangeably, so that the pigments produced would have varied slightly in colour and in other properties, particularly their light-fastness. Nevertheless, all should be regarded as fugitive compared with the inorganic pigments described above. In addition some dyes were used for purposes other than the preparation of pigments, such as the production of coloured lacquers and for staining timber, and notes on these varieties and their uses for such purposes are included for both interest and convenience in the brief glossary which follows.

#### Annatto

\*520 The seeds of Bixa orellana, a South American plant, contain the dye bixin which is of an orange colour. This was used by Dossie in an orange lake of his own invention.\*

\*521 John Smith described how 'ornato' might be used to provide an oil of golden colour, although this hint was omitted from the 1723 and subsequent editions of his book; whilst Stalker and Parker (who referred to 'Ornator'), and the early nineteenth-century authors Tingry and Vanherman  
\*522 described the use of annatto in coloured lacquers.



Table (v)

Cost prices of yellow lake pigments manufactured  
by Lewis Berger in 1831.

Italian pink	3s. 6d. per lb. (equivalent to 392s. 0d. per cwt.)		
Fine yellow lake	1s. 10d.	"	205s. 4d. "
Brown pink	1s. 10d.	"	205s. 4d. "
New yellow	4d.	"	37s. 4d. "
Satin yellow	3½d.	"	30s. 4d. "
Dutch pink No. 1			22s. 6d. per cwt.
Dutch pink No. 2			18s.
English pink			10s. 8d.

(Berger MSS., 1831 formula book, pp. 63, 65, 67, 69, 71, 139, 141, 143.)

Barberry

A substantive yellow dye, berberine, may be extracted from roots of the species Berberis, a shrub which grows in England. Only one author, Tingry, seems to have made reference to it in the context of house-painting pigments, giving it as a constituent in a recipe for a brownish variety of Dutch pink in which he suggested the use of a mixture of dyes extracted from one part of barberry with two of yellow berries.\* Being a substantive dye, however, barberry would not combine with alum to form a proper lake and would have remained in the form of dyestuff particles.

Fustic

Dyes extracted from two distinct species share the name fustic, that from the West Indian or South American tree Chlorophora tinctoria (formerly known as Morus tinctoria), which grows also in India, being distinguished as old fustic, whilst that from another West Indian tree, flourishing too in southern Europe and the Levant, Rhus cotinus, is referred to as young fustic. The former species contains the dyes morin and maclurin (also known as morin and morintannic acids), and the latter fustin (otherwise called fisetin). James Smith simply referred to the use of 'fustic' in the manufacture of brown pink;\* but formulae specifically employing old fustic for the preparation of Dutch pink and English pink appear in 1813 and 1815 in the Berger archives (although its use here was soon superseded by that of other dyes). Berger often referred to the dyestuff as 'Wood' or 'Old Wood', his 1813 reference to 'Old Wood (Fustic)' making the identification clear; whilst, to corroborate this, a slightly later formula in which old fustic is listed amongst the ingredients calls in the description of the method to be adopted for the 'Wood' to be boiled.\* The alternative name 'yellow Brazil wood' has been used in the present century.\*

Quercitron bark

Quercitrin and quercetin are present in varying degrees in the bark of oak trees. They are contained to an exceptional extent in the American species Quercus velutina (known formerly as Q. tinctoria), first imported by Dr. Edward Bancroft, who was responsible for the name quercitron, during the last quarter of the eighteenth century, and occur also in Q. citrinia, Q. digitata, Q. nigra, and Q.

trifida. Bancroft's activities have been discussed by Dr. Harley, but his letters patent allowing him sole rights for extraction of the dye expired in 1798,\* and it is not surprising, especially bearing in mind its economy in use, to find Lewis Berger using oak bark in many formulae for yellow lakes from 1807 onwards. There seem, however, to have been a wide range of qualities, and in 1823, for example, he distinguished carefully in one instance between 'Common Querc<sup>n</sup> Bark', which cost 5s. per cwt. and 'Fine Bark' at 18s.\* Elsewhere he simply referred to 'Quercitron Bark', 'Bark', 'Fine Bark', 'Fine Querc<sup>n</sup> Bark', 'Common Bark', or 'Oak Bark'; but noted on one occasion the use of fine bark for a bright yellow lake, directing that common bark should be used for a darker colour.\* Since no alteration in the quantities was specified, whilst in the first example mentioned it was still necessary to use 2 cwt. of the fine bark in place of 2½ cwt. common bark, it seems likely that it was the quality of the dye which could be extracted rather than the quantity that determined the grade of the bark.

#### Saffron

The stigmas of the autumn crocus, Crocus sativus, contain the substantive dyes crocin and crocetin. Use of saffron in the production of coloured lacquer is mentioned by Stalker and Parker, here as a substitute for tumeric;\* but the dye was often confused with the latter (safran des Indes) or with the red dye from safflower (safran bâtard).

#### Tumeric

The substantive dye curcumin is obtained from the root of the far eastern plant Curcuma tinctoria. It was mentioned in connection with pigment production by Dossie, who suggested the employment of one part to four parts of French berries in the preparation of Dutch pink;\* but as substantive dye it would not have combined with alum to form a lake in the usual way. Stalker and Parker, and also Vanherman, referred to its use in coloured lacquers;\* whilst Watin described the use of terra merita in staining parquet, giving the alternative names curcuma longa and safran des Indes.\* Terra merita was one of the two yellow dyestuffs listed by Rondelet, who indicated its cost as

\*534 2fr.25 per pound.\*

Weld

The yellow dye luteolin may be extracted from the leaves and stems of the European plant Reseda luteola. It seems to have been regarded as the least fugitive of the yellow dyes available,\* and Tingry (whose text was incorrectly translated into English, 'woad' being substituted for 'weld') mentioned it was used for the best pigments.\* It was employed extensively by Lewis Berger during the first three decades of the nineteenth century in the production of yellow lakes, and he certainly appears to have reserved its use for special varieties such as Dutch mineral and satin yellow, and for the expensive qualities intended for fine art purposes. It is difficult to obtain a clear idea of the size of his stocks, since these were reckoned by the 'load' and 'bundle'; but these increased steeply during the first decade of the nineteenth century, starting at only £8 worth in 1802, whilst in 1806 he valued these at over £100, and in 1810 the figure stood at £216.\*

Yellow berries

A yellow dye known as rhamnetin may be extracted from the unripe berries of many species of Rhamnus, the English variety of which, known commonly as buckthorn, is R. frangula. It is clear, however, that berries from foreign sources enjoyed considerable use, and were imported particularly from France and the eastern Mediterranean. Dossie, for example, referred to French berries as being used in the preparation of Dutch pink and light pink, and James Smith in the production of brown pink.\* In France the berries of R. alaternus and R. infectorius were known as graine d'Avignon. Watin described them as from 'un arbrisseau nommé petit noir prun' and added, 'il faut la choisir sèche, assez grasse, & bien nourrie',\* although Tingry indicated that the term was applied to the berries when they were green;\* whilst Rondelet listed graine d'Avignon at 2fr.50 per pound.\* In contrast with the absence of French ochres from his early nineteenth-century stock-lists, Lewis Berger had stocks of French berries increasing from just over ¼ cwt. in 1802 to 4 cwt. in 1806 and over 11 cwt. in 1810 valued at diminishing rates of

\*542 70s., 30s., and 28s. per cwt. respectively;\* whilst in  
 \*543 1817 he used French berries in a formula for brown pink.\*  
 Although the majority of his formulae refer simply to  
 'Berries', and occasionally to 'fine Berries' or 'fresh  
 Berries', other specific varieties called for included  
 'Turkey Berries' and 'Persian Berries'. The former,  
 possibly R. Sacatalis from Smyrna (now İzmir) and Aleppo,  
 were used in 1789 and 1816 in the manufacture of Dutch  
 \*544 pink and in formulae of about 1815 for brown pink;\* and  
 were valued at £6 6s. per cwt. in 1810 when Berger's  
 \*545 stock stood at nearly 26½ cwt.\* Turkey berries also seem  
 to have been used in 1834 in the manufacture of 'Dark  
 \*546 Com.<sup>n</sup> Italian Pink',\* but had apparently been superseded  
 by French berries in the preparation of brown pink, pre-  
 sumably since, as a note referring to the formula of 1817  
 already mentioned indicates, they were too yellow in  
 colour. Persian berries may also be identified with  
R. sacatalis, but in addition with R. amygdalinus and  
R. oleiodes, and were employed by Berger in 1820 and 1831  
 in the making of Italian pink; whilst in the latter year  
 \*547: they were used also for a variety of Dutch pink.\* The  
 extent to which imported as against native berries were  
 used in commercial pigment manufacture during the period  
 considered in this book is not, however, clear; but the  
 valuation of the 25½ cwt. of 'Berries' Berger had in stock  
 in 1802 at 100s. per cwt. and the total of just over 15½  
 cwt. 'Fine' and 'Com.<sup>n</sup>' berries he possessed in 1806 both  
 at £7 do not suggest that even if the unqualified term  
 represented non-imported dyestuff it had any advantage in  
 \*548 price.\*

#### The pigments

Having briefly listed and considered the yellow dye-  
 stuffs employed for pigment manufacture and other house-  
 painting purposes, attention may now be turned to the pig-  
 ments themselves.

#### YELLOW PINK AND DUTCH PINK

The names yellow pink and Dutch pink are linked by  
 Stalker and Parker, who indicated that 'Yellow or Dutch  
 Pink' might be purchased ready ground into oil at 3d. per

\*549 ounce.\* Such pigments were evidently in sufficiently common use at the end of the seventeenth century to warrant the inclusion of 'Pink-Yellow' amongst those listed by John Smith in the first edition of his book. It was, he indicated, 'a good light Yellow, a little inclining to a green', and he commented also that it was 'a Colour that grinds very easie, and bears a good body',

\*550 illustrating its use in mixing grass green oil paint.\* The mid-eighteenth-century writer Robert Dossie, who gave formulae for the preparation of Dutch pink from French berries and turmeric root on bases of chalk or white lead, observed, however, that the pigment did not work well in oil (also drawing attention to its fugitive nature) and indicated that its principal use was for 'common purposes'

\*551 in water.\* Watin, on the other hand, gave a similar chalk-based formula for the manufacture of stil de grain by adsorption of the dye extracted from the graine d'Avignon, and remarked that it could be ground in both distemper and oil, instancing its use in both media in mixing vert de

\*552 composition.\* Moreover, Tingry (who repeated this formula for the preparation of compound green for the decoration of rooms in oil, and in the translation of whose work the term Dutch pink is consistently used as the equivalent of Watin's stil de grain) stated that this pigment was much used in house-painting in both oil and distemper, and gave a series of similar recipes for its preparation. The first used weld as the dye, whilst the last was particularly designed for use with white lead in oil and employed a base

\*553 of two parts of white lead to one of chalk.\*

The formulae employed by Lewis Berger, who was making Dutch pink from Turkey berries by 1789, were broadly comparable, although the range of dyestuffs he later utilised was more extensive than the species of Rhamnus so far mentioned and included old fustic and quercitron bark;\*

\*554 whilst for a similar pigment which he called new yellow he employed weld, the dye from which, as already mentioned, enjoyed a reputation for greater lightfastness than those

\*555 from other sources.\* For both Dutch pink and new yellow he employed a base of 'Dutch lead'. This, however, seems

\*556 unlikely to have contained any white lead;\* and it seems

'Dutch  
mineral'

\*557

\*558

\*559

uncertain, therefore, that formulae based on the latter, such as those suggested by Dossie and Tingry, were in commercial production. In addition, in 1815 Berger was making a yellow lake from weld on a base of patent yellow, calling the pigment Dutch mineral;\* but this seems to have been discontinued by 1831, as had other varieties of Dutch pink he made between 1818 and 1826 incorporating a proportion of orange lead.\* Manufacture of new yellow, however, continued beyond that date, and its superior nature was reflected in the cost of production which in 1831 was equivalent to 37s. 4d. per cwt. against those of the two more ordinary grades of Dutch pink at 22s. 6d. and 18s.\*

The prices at which Berger's stocks of Dutch mineral, new yellow, and Dutch pink were valued during the first decade of the nineteenth century are generally remarkably consistent, the first at 84s. or 90s. per cwt., the second at the equivalent of 56s. or 65s. 4d. per cwt., and the last at 26s. or 27s. (In addition, however, he had in 1802 a small stock of 'Fine Dutch Pink' valued at 45s. per cwt., together with a rather larger quantity of 'Sec<sup>d</sup>' new yellow valued at a rate equivalent to 28s.) In 1802 his stocks of ordinary Dutch pink stood at nearly 22 cwt., rising to nearly 57 cwt. in 1806, and in 1810 were almost 29 cwt.\* Over the same period his stocks of new yellow rose from about 4½ cwt. in 1802 to nearly 7 cwt. in 1806, and to just over 14½ cwt. in 1810;\* whilst those of Dutch mineral in the same years stood respectively at just over 5 cwt., nearly 11 cwt., and nearly 22 cwt.\* Curiously, the price at which he was offering Dutch pink for sale in 1779 and 1780 was considerably higher than those so far mentioned, this being consistently 84s. per cwt., although it had fallen to 75s. in 1788.\* Perhaps the most likely explanation for this dramatic reduction in price by the 1800s is that by then, as already indicated, Berger had commenced manufacture of the pigment himself and was no longer merely supplying that produced by others.

Retail prices of Dutch pink at the beginning of the nineteenth century seem to have been about 8d. per pound,

the rate at which a quantity of 9 lb. was purchased for  
\*564 painting at a house in Doncaster in 1802;\* although  
Phillips quoted a price of 1s. 6d. per lb., which is,  
\*565 as usual, higher than those found elsewhere.\* Other  
ingredients in the Doncaster account include glue and  
items whose general nature suggests the Dutch pink was  
to be employed in distemper rather than oil, and it  
seems clear that the former was the medium in which the  
pigment enjoyed most common use. Nicholson, for example,  
illustrated its employment in the preparation of straw  
\*566 coloured distemper,\* and Pincot retailed a proprietary  
\*567 water colour under the name Dutch pink;\* whilst, perhaps  
echoing Dossie's remark, Whittock observed that Dutch pink  
\*568 was used only in distemper.\* Nevertheless, in his revised  
edition of John Smith's book, Butcher suggested the use of  
Dutch pink to make a fine yellow oil paint (albeit with  
\*569 the suggestion that patent yellow was preferable);\* and,  
bearing in mind its use in oil greens by Smith and Watin,  
it seems clear the pigment enjoyed at least some use in  
oil also, although experiment suggests that its staining  
power in this medium was limited.

#### ENGLISH PINK AND LIGHT PINK

Besides Dutch pink, Stalker and Parker also mentioned  
English pink, which, Dossie remarked, was a lighter and  
coarser variety of the same pigment containing a greater  
\*570 proportion of chalk.\* Although Dossie distinguished two  
varieties of light pink, one of which was made as a true  
aluminium hydroxide lake, the other was, he indicated,  
\*571 like Dutch pink but with much less colour;\* and, writing  
some years later, the author of the Practical Treatise  
used the two names as synonyms, observing that English pink  
\*572 was sometimes termed light pink.\* Martin and Nicholson  
also treated the two as one and the same, applying to both  
Dossie's description of English pink as a pigment inferior  
\*573 to Dutch pink;\* whilst Tingry's editor also remarked on the  
\*574 comparatively poor quality of English pink.\*

Confirmation of this already clear evidence for its  
relation to Dutch pink is provided by the formulae and



prices in the records of Lewis Berger's company. The formulations contained in the surviving documents show that English pink was invariably made on a base of whitening, dyes mentioned including old fustic and quercitron bark; although, since the first formulae do not appear before about 1815 (the date at which these dyestuffs superseded the use of yellow berries in the manufacture of Dutch pink), there is no reason why the latter should not have been employed for several years before.\* By way of comparison with the cost price of Dutch pink (which, as already mentioned, was the equivalent of 22s. 6d. and 18s.) in 1831 English pink was costed out at 10s. 8d. per cwt.;

\*575 not have been employed for several years before.\* By way of comparison with the cost price of Dutch pink (which, as already mentioned, was the equivalent of 22s. 6d. and 18s.) in 1831 English pink was costed out at 10s. 8d. per

\*576 cwt.;

\*577 and its sale price in earlier years consistently bore more or less the same relationship to that of Dutch pink. Thus, during the late eighteenth century, Berger was offering the pigment at prices ranging from 35s. to 42s. per cwt.;

\*578 and in the early nineteenth century valued his stock at prices between 14s. and 20s. per cwt. In 1802 he possessed a quantity in excess of 35 cwt., and in 1806 nearly 23½ cwt.; but although by 1810 this had fallen further to a figure just less than 7 cwt. the quantities nevertheless suggest strongly that the pigment was one in common use.\* As with Dutch pink, Pincot re-tailed a water colour taking its name from English pink, and this too reflected the price difference between the

\*579 qualities, being sold at half that of the former.\* Although Butcher mentioned the use of both English and Dutch pink in oil,

\*580 the limits on the use of the latter in this medium have been mentioned above, and it seems most likely, especially in view of its inferior staining power, that use of English pink would almost invariably have been confined to distemper.

#### SATIN YELLOW

By the end of the first decade of the nineteenth century Lewis Berger was producing a lake pigment which he called satin yellow. This was made on a base of satin white, and it seems most likely that like this it was a special formulation for use in wallpaper manufacture. The earliest formula in the Berger archives (for 'Yellow

Sattin') is dated 1809 and employed weld with either quercitron bark or yellow berries, whilst a later formula of 1815 made use of weld with old fustic. In 1831, however, weld alone was used, the cost price of the pigment being 3½d. per pound (equivalent to 30s. 4d. per cwt.).\*

\*581

#### ITALIAN PINK AND OTHER MORE EXPENSIVE YELLOW LAKES

True yellow lakes, that is those made by the direct precipitation of aluminium hydroxide from solutions of alum and an alkali in the presence of the dissolved dying agent, were known during the second half of the seventeenth century and described by Antonio Neri.\* Although Lewis Berger was manufacturing yellow drop lakes from 1793, the method of preparation at that date is slightly obscure; but by 1803 it is apparent this was to employ weld as the source of dye, a base of previously prepared aluminium hydroxide (which he called lake white),\* and an alum mordant with a small addition of sugar of lead. At this date he used Rhamnus berries in the preparation of Italian pink; but by about 1815 all the ingredients were similar to those for the earlier of his yellow lakes, although formulae of that date for 'common' yellow lake pigments employed quercitron bark. The system of precipitating the white separately from the mordanting of the dye continued beyond 1831 in the case of the Italian pink, but was replaced by its preparation in situ for the yellow lakes from 1824. From 1820 Persian berries were used for Italian pink, whilst in 1831 bark was used to provide the dye for other yellow lakes, providing an illustration of the interchangeability of the dyestuffs which were in use.\*

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Pigments on an aluminium hydroxide base were extremely transparent and also expensive, the price of the yellow lake offered by Berger in 1780, for example, being 12s. per pound, that is sixteen times the price of Dutch pink in the same lists, and over thirty times that of English pink.\* By the opening of the nineteenth century, prices of such yellow lakes had fallen in parallel with those of Dutch and English pink, although the proportional differ-

ences were maintained. Thus in 1802, 1806, and 1810 Berger valued his stocks of yellow lake and Italian pink at rates from 5s. to 7s. per pound, and the comparative rarity of the pigments is reflected in the smallness of his combined stocks of both pigments which stood at 68 lb., 11½ lb., and just over 64½ lb. in the same years respectively.\* The higher price of these pigments is seen too in the costed production formulae of 1831 in which 'Fine Yellow Lake' is shown as costing 1s. 10d. per lb. to produce, and Italian pink 3s. 6d.\*

\*586

\*587

In view of their consistently high price and the apparent absence of references to yellow lakes in connection with house-painting by writers on the subject, it seems clear that these are unlikely to have been used ordinarily for such purposes, although it is possible that they may have found occasional employment in high quality arabesque or other decorative work.

#### BROWN PINK

A variety of yellow lake of brown colour was in use by artists of the second half of the seventeenth century. Stalker and Parker referred to it as 'Brown or glasing-Pink', remarking that it was very dear and that 'the bigness of a Nutmeg grinded will stand you in 6d.';\* and Dossie observed that it was generally very fugitive and on that account much disused, although, he believed, it had been of better quality in the past.\*

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\*589

Formulae in the Berger papers reveal that it was made during the early nineteenth century in the same way as his yellow lakes of contemporary date, in that the dye, here obtained from Rhamnus berries, was adsorbed onto a base of aluminium hydroxide, this time in the presence of pearl ash. The mordant, however, was ferrous sulphate rather than alum, and this was undoubtedly the constituent responsible for the brown colouration. In 1819 Berger's practice was to use the berries after they had first been employed to make Dutch pink, but from that date quercitron bark was substituted and the aluminium hydroxide was formed in situ. The same method continued in use until after 1831 when the cost of production was 1s. 10d. per pound, the same as that of

\*590 fine yellow lake.\* During the first decade of the century, Berger valued his stocks at prices in some cases equivalent to those of yellow lake, and on other occasions roughly double these. In 1802, for example, he had an extremely small stock of only 4½ lb. valued at 10s. per lb., and by 1806 still had only 42 lb., this time priced at 5s. per lb. In 1810 he had just over 7 lb. at the same price together with 6½ lb. at

\*591 13s.\* This last was singled out as 'Brandrams', and, like Newman (to whom Berger was supplying both brown pink and a yellow lake, which he called 'Spanish yellow',

\*592 similar to Italian pink),\* Brandram was an artists' colour man. Like yellow lake, therefore, especially bearing in mind both its cost and the small stocks held by Berger, it is unlikely that brown pink would have found any use for the general purposes of house-painting; although the pigment is included in the rather dubious lists of Martin

\*593 and of Nicholson, which are copied from Dossie's book,\* and is listed also by Rondelet and Phillips, the latter quoting rates of 14s. to 19s. 2d. per lb. for its purchase in 1812 and much the same in 1821.\* However, Soane

\*594 purchased 2 oz. for 6d. in 1803 along with other house-painting pigments,\* and it seems just possible, therefore,

\*595 that the pigment may have enjoyed limited use in such decorative work as graining for which its transparency would have commended it. Nevertheless, the pigment was not mentioned by Whittock in his list of pigments for decorative painting;\* and, since 2 oz. would not have gone a long way, it is perhaps more likely that Soane purchased

\*596 it for other uses.

#### ORANGE LAKE

Both Martin and Nicholson included orange lake in their lists of pigments copied wholesale from Dossie, who put the pigment, made from annatto, forward as one of his own invention.\*

\*597 Although Lewis Berger also appears to have made a batch of orange lake in 1796, the details of its formulation are not clear, and it does not seem to have become one which

\*598 he made regularly.\* In 1802 he had a tiny stock of 6½ lb. valued at 8s. per lb.,\* and it is clear that, even if

\*599

available for artists' use, such a pigment is extremely unlikely to have been used for house-painting.

Inorganic red  
pigments

In many ways the seventeenth and eighteenth centuries were extremely fortunate in the group of three red mineral pigments which they inherited from the middle ages, especially when these are compared with the yellows considered above. Red ochres corresponded closely with yellow ochres as cheap and extremely stable (though dull) pigments, working well in oil or water; and again a range of qualities and degrees of transparency were available which could be applied to more or less specialised purposes. In contrast with the unsatisfactory nature of all the bright inorganic yellows, however, the bright reds, vermilion and red lead, gave reasonably satisfactory service; and although much more expensive than the cheaper varieties of red ochre, the latter particularly so, it was often only necessary to employ the organic reds to modify their tone rather than as alternatives sought in their own right. In many respects the colours of red lead and vermilion were very similar, but on account of its comparatively economical price red lead tended to be used in distemper and vermilion to be reserved for oil.

RED AND BROWN OCHRES, NATURAL AND ARTIFICIAL

Red ochres occur naturally in the form of haematite, or may be obtained by roasting yellow ochres. They may also be manufactured artificially. Their colour, which can vary widely from dark purple to red, orange, or brown, is owed in all cases to the presence of ferric oxide in its anhydrous form, and this may compose anything from below ten to over ninety per cent of the pigment. Red ochres from all three sources were used ubiquitously in house-painting; and terminology is confused, since the names of distinctive naturally obtained pigments such as 'Venetian red' came quite early on to be applied to others, and in the case of 'Indian red' were even used for varieties of markedly different colour. It is, therefore, often difficult to be certain as to whether a natural or artificial pigment is implied in any particular instance; and

hence necessary to consider first those of the former origin.

Sources of natural  
red oxides

Red ochres occur extensively in the British Isles, many from the iron mines in the Forest of Dean, Gloucestershire, having been particularly noted for the high quantity and purity of the ferric oxide they contained. The late seventeenth-century writer Henry Powle, for example, mentioned the ochre of the Forest;\* and, writing in the mid-eighteenth century, Hill mentioned that he had visited the pits and talked to the workmen who informed him that the ochre they dug up was sent to London to be sold as 'Indian red'. 'On comparing it with some of the true Persian kind, which I had from the East-Indies,' Hill recorded, 'I find it of a paler Colour, but of a much finer Texture'.\* Specimens at the Institute of Geological Sciences, London, show that a range of colours from dark purple to orange in hue have been obtained from the Forest, and include a sample of bright scarlet 'vermilion' ochre from the Highmeadow Mine near Coleford. Noël Heaton particularly mentions the Crawshay red from this area, indicating that it contained up to 98% of ferric oxide and a remarkable freedom from grit combined with a fine colour.\* The I.G.S. samples from the St. Annal's Mine show that this was a bright orange red similar to that of the Highmeadow specimen already mentioned.\* On the other hand, since the term 'Spanish brown', which as will be shown below was generally applied to inferior pigments, is known to have been used in connection with ochre from the Forest of Dean during the early seventeenth century, it seems likely that much of the pigment obtained from this area in earlier times may have been of less high quality than these.

Hill had also visited pits in Derbyshire and Staffordshire which were 'peculiarly worked for this Substance', but although the ochre was good, it was, he said, much inferior in all respects to that from the Forest of Dean.\* Witney, Oxfordshire, too seems to have been a source of lower grade pigment which was referred to by Waller as reddle;\* and Tingry's editor mentioned the Mendips as presenting a plentiful supply of red ochre.\* This also would

probably have been less brilliant than that from the Forest of Dean, since Heaton observed of the red ochres from Bristol and the West of England that they are generally of low grade and often brownish in tone, an observation true at least for the specimens at the I.G.S. from Wick, Gloucestershire (now Avon), and from Winford, Somerset.\* Heaton also mentions Cumberland oxide, but describes it as unsuitable for paint manufacture as having a tendency to separate on standing;\* whilst Hurst provided an analysis of a sample from Ulverton, Lancashire,\* and there are in addition samples at the I.G.S. from Westmoreland (now part of Cumbria), Rutland (now part of Leicestershire), and Co. Antrim.\*

'Indian red'

True Indian red comes from the island of Ormuz in the Persian Gulf, and was described by Dossie as having a hue inclining to purple, a quality certainly possessed by the specimen from the Gulf at the I.G.S.\* However, as already mentioned, Hill described the substitution of ochre from the Forest of Dean, a practice still current at the end of the nineteenth century;\* and Dossie observed that the true pigment was rarely to be found since it had been supplanted by an artificial oxide. Although in The New Practical Builder Nicholson merely repeated Dossie's comment that the natural pigment was scarce, a decade later in the new edition of The Builder's and Workman's New Director, which he published in 1834, he omitted the statement, indicating instead that Indian red was an extremely useful pigment imported from the East Indies.\* It is possible, therefore, that supplies were again becoming available at an economical price; but Nicholson cannot really be regarded as a reliable authority for this, and although Lewis Berger had a stock of 3 lb. in 1806 (none in 1802 or 1810) this was valued at the equivalent of over £50 per cwt. making it seem likely that the term was being applied to Indian lac dye.\*

'Venetian red'

Another natural red ochre well known, at least by name, during the eighteenth century was Venetian red, which Mrs. Merrifield in her Original Treatises... on the Art of Painting (1849) indicated came from the vicinity of Verona.\* Heaton describes pigment from this source as having a pale

\*616 and rather orange shade;\* whilst Dossie defined the pigment  
 in the first instance as a native red ochre inclining to  
 scarlet rather than crimson, and hence similar to artifi-  
 cial Indian red but 'fouler'. On the other hand, he  
 suggested, a substitute was easily prepared by mixture  
 of an ordinary red ochre with one of artificial prepara-  
 \*617 tion;\* and such mixtures were probably commonly sold since  
 John Martin, for example, noted at the beginning of the  
 eighteenth century that he had used a mixture of light red  
 and brown red in painting the ground of clock dial board  
 at Watford Church, Hertfordshire, which, he added 'M.<sup>r</sup> Jo:  
 \*618 Glover of Watford calls Venetian-Red'.\*

A third foreign source making its contribution to  
 English terminology was Spain where the Malaga district  
 \*619 provides an excellent source of fine grades of pigment.\*  
 However, although in the first edition of his book John  
 'Spanish \*620 Smith described Spanish brown as being of Spanish origin,\*  
 brown' the term had been applied to English pigment for at least  
 half a century. Letters patent granted in 1626 referred  
 to the 'Ocker digged in the fforeste of Deane called  
 \*621 Spanishe Browne';\* and it is interesting that Smith omitted  
 the suggestion from the second and subsequent editions of  
 his book. It seems fairly clear, in fact, that the term  
 was generally applied to British pigment of natural origin  
 (although John Atkinson, whose artificial pigments are  
 discussed below, named one of them 'Spanish brown' in  
 \*622 his patent of 1794);\* but Dossie, Whittock and Tingry's  
 later editor consistently referred to Spanish brown as a  
 naturally occurring pigment, the first describing it as a  
 native red earth similar to 'Venetian red' but fouler,  
 \*623 obtained from several parts of England, and the last men-  
 tioning that it was plentiful in the West of England.\* It  
 may be concluded, therefore, that, whilst the term English  
brown is also occasionally encountered, Spanish brown was  
 the name generally in use for low grade, usually natural,  
 red ochres, often from British sources. Their poorer  
 quality is reflected in the prices discussed below at which  
 they were sold, together with those of 6s. and 6s. 6d. per  
 lb. at which in 1806 Berger valued his stocks of lump and  
 powdered 'Eng.<sup>h</sup> Brown Oker' respectively (which totalled



\*624 nearly 107 cwt.)\* In connection with such pigments of  
poor colour it may also be noted that Dossie treated  
the term brown red as synonymous with Spanish brown,  
although Stalker and Parker had applied the name to a  
pigment made by calcining brown ochre, which Dossie  
\*625 indicated was a pigment of a warm brown or foul orange  
colour.\*

Completing this survey of native ochres significant  
during the period under consideration, Watin and Tingry  
naturally referred to the French sources in Berry and the  
\*626 Auvergne;\* but, as will be remembered from the section  
dealing with yellow ochres above, it is not clear that red  
pigments from these areas were necessarily imported into  
England. Farther afield, it is possible that Turkey or  
Cyprus supplied a limited amount of pigment, since Berger  
had a smallish stock of nearly 1½ cwt. 'Turkey Red' in  
\*627 1802;\* and although by the end of the nineteenth century  
Hurst mentioned the name only in connection with a variety  
of artificial red oxide, Church, writing a few years before,  
had remarked on Cappodocia as one of the sources of native  
\*628 red ochre in classical times.\* This part of the world also  
gave its name to the soft red ochre much used in gilding  
and known as Armenian bole; but the mid-eighteenth-century  
translator of Theophrastus' work on geology, John Hill,  
indicated that at that date common reddle was often sold  
\*629 under the name.\* Hill also mentioned a red ochre which  
had been obtained from New Jersey in North America and used  
both in painting and medicine. Known as 'Blood-stone' it  
was obtained, he said, from a depth of fifteen to twenty  
feet, but by the time he was writing was 'disused, and not  
\*630 known in the Shops'.\* Subsequently, Tingry's later editor  
referred to ochre from the Magdalen Islands in the Gulf of  
St. Lawrence, adding that pigment from this source had  
been sold in auction at 3d. per pound, a price putting it  
slightly above those of the better grades used in ordinary  
\*631 house-painting.\*

Red ochres from  
the calcination of  
yellow  
ochre

Waller included burnt ochre in his table of pigments,  
describing its production from yellow ochre by roasting it  
\*632 over an open fire; and Hill mentioned that this practice of

burning yellow ochre to produce red pigment was in his  
 \*633 time much employed among the people who dealt in colours.\*  
 Reynolds too seems to have regarded it as an everyday  
 'red ochre' practice, and Dossie indicated that red ochre was commonly  
 Oxford ochre calcined, a statement repeated by Martin,  
 \*634 Nicholson, and Whittock;\* whilst Watin also described  
 the ocre rouge commonly sold as being made red by calcin-  
 \*635 ation.\* Both Stalker and Parker, and Dossie also mentioned  
 'light red' light red; which the latter defined as a light red ochre  
 of a scarlet cast manufactured by the calcination of yellow  
 ochre to the desired degree, giving light ochre as a syno-  
 nym. As already noted, however, he regarded brown red as  
 being the same as the naturally occurring pigment 'Spanish  
 brown', although Stalker and Parker had described it as  
 \*636 burnt from brown ochre.\* It is not possible, of course, to  
 make the generalisation that the terms light red and red  
 ochre stood exclusively for pigments prepared by roasting  
 yellow ochres, but it seems, nevertheless, that this was  
 often the case during the seventeenth and eighteenth cen-  
 turies. Hence, it is difficult to assess the degree to  
 which such pigments were used in preference to those of  
 virgin natural origin; but it is clear that certain vari-  
 eties at least could be far more costly than the latter,  
 and the two certainly identifiable pigments of this nature  
 which Berger had in stock during the early years of the  
 nineteenth century were both extremely expensive. Further-  
 more, of these, 'Burnt Stone Oker' appears only in his  
 \*637 1802 list,\* when he had a mere two pounds in stock valued  
 at a rate equivalent to 168s. per cwt. (over fifty times  
 the price of his Spanish brown) the same as the valuation  
 given for his stocks of 'Burnt Terre de Sienna'.

'burnt sienna'

This last was clearly a very special pigment, produced  
 by roasting the yellow earth occurring naturally at Siena  
 in Italy. It was mentioned by Dossie, and listed by  
 Rondelet at a price of 7fr. per pound, that is thirty-five  
 \*638 times the price of the cheapest red oxide.\* Lewis Berger's  
 stock in 1802 was a mere 3 lb., although by 1806 this had  
 increased to just over 2 cwt. at a price equivalent to 224s.  
 per cwt.; but both stock and price had fallen back in 1810  
 \*639 to 16 lb. and the equivalent of 112s. respectively.\*

Despite its expense, however, burnt sienna had a particular use in house-painting, since on account of its transparency in oil it was valuable in the preparation of graining glazes. Butcher, Whittock, Vanherman and Nicholson all mentioned its use in this way, and it seems most likely that it was for such an application that in 1803 Soane purchased a total of five ounces, some ready ground in oil at rates equivalent to 672s. and 896s. per cwt.\* No such special character, however, would have been possessed by ordinary grades of ochre prepared by calcination, and the extent of their use accordingly remains obscure.

Artificially  
manufactured  
red ochres

The preparation of red ferric oxide by roasting ferrous sulphate was known well before the period here under consideration. This reaction was widely used during the eighteenth century for the preparation of sulphuric acid which distilled over from the heated iron compound, the iron oxide being left as a residue in the retort. Dossie described the method as that used for the manufacture of scarlet ochre, giving a related procedure for preparing 'common Indian red'. This latter pigment had, he said, by its cheapness prevented the import of the true Indian red for a long time.

'So that the true teint of the original kind, being in some measure forgotten, this has been gradually made to vary from it, till it is in fact a quite different colour.'

Accordingly, he described it as verging on a scarlet hue, whilst the true Indian red tended to be purplish in colour.\* The author of the Practical Treatise also indicated that the common 'Indian red' was the washed and dried residue left after the manufacture of sulphuric acid by the distillation of ferrous sulphate, but mentioned that the colour could be varied from red to purplish.\* By far the fullest description of the process was given by the French author 'English red brown' Watin. Rouge brun or brun rouge d'Angleterre was, he said, made at Deptford, near Greenwich, seven miles from London,

'en calcinent les feux de la couperose dans un fourneau de réverbère, & les remuant continuellement

jusqu'à rougeur parfaite: on les lave pour enlever l'acrimonie vitriolique; quand elles sont seches, on les met dans un cofre où sont enfermées deux boules de fer. Le coffre est suspendu; en l'agitant, le coffre fait rouler les boules, que réduisent, en deux heurs, trois cent livres de couleur rouge en poudre impalpable'.\*

\*643

The location of the factory at Deptford is no doubt related to the manufacture of copperas which had been carried on there at least since the second half of the seventeenth century, and was described by David Colwall in the Philosophical Transactions in 1678.\* The details of the process for pigment manufacture were repeated by Tingry and Ure, the latter indicating that the English red thus prepared was much in demand in France.\* Rondelet gave the price of rouge brun d'Angleterre as 30c. per pound against 20c. for ordinary ocre rouge; whilst rouge de Prusse, which was described by Watin (who was uncertain as to whether it was made by the calcination of copperas or yellow ochre) as a brighter and more lively pigment, was 45c.\* Tingry, however, indicated unequivocally that it belonged to the former class prepared from ferrous sulphate.\*

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By the end of the eighteenth century, artificially prepared pigments of this nature were known under many other names. John Atkinson's patent of 1794 describes the manufacture of 'Venetian red' and 'colcothar vitriol' by calcination of ferric residues, the former having been subjected to eight hours in a reverberatory furnace, and the latter sixteen. Atkinson's 'Spanish brown' was a similar pigment made by calcining the same residues with a native yellow ochre.\* The 'Venetian red' (and presumably the other two) were produced in cake form, and it is possible, therefore, that Lewis Berger's stocks of 'Cake Venetian' during the early nineteenth century represented such an artificial pigment rather than a native ochre, since pigments such as English brown and Spanish brown appear in his stock-lists in 'lump' rather than 'cake' form.\* The 'purple oxide of iron' which, Tingry's later editor remarked, was commonly called purple brown was also prepared

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\*649

'purple brown'

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artificially by Atkinson, who produced more than one shade of this name. To produce 'Chocolate purple brown' his patent specification called for 'the slime of sulphurous copper ore' (which no doubt contained a significant percentage of iron sulphide) to be calcined for eight hours in a reverberatory furnace; whilst 'Blue purple or dark purple brown' required a preliminary roasting in the same way for six hours, following which it was ground and again calcined for sixteen hours.\* There is no reason, however, why such darker shades of iron oxide should not have been produced in previous years by roasting ordinary red or yellow native ochres; and, as in the case of 'Spanish brown' and 'Venetian' red Atkinson again seems to have taken over the name of a pigment already in use. Lewis Berger, for example, was offering purple brown for sale in 1788; and the real significance of methods of manufacture such as those of Atkinson may lie in the cheapening of better grades of pigment. Thus, although Berger was quoting 36s. and 42s. for the supply of purple brown in 1788, by the early nineteenth century he was valuing his stocks at only 12s. or 12s. 6d. per cwt. These, moreover, rose from a mere 7 cwt. in 1802 to just over 33½ cwt. in 1806, and by 1810 stood at just over 224 cwt. indicating that there was considerable demand for such dark oxides once available at an economical price.\*

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The applications  
of red ochres in  
house-painting

\*652

Red ochres are one of the most reliable pigments known, and work well in both oil and water. They were, moreover, generally extremely cheap compared with many other of the pigments in use during the eighteenth century, and naturally took their place amongst the group of six basic pigments that the London plasterers were permitted to use under the 1603 Act of Parliament.\* They were sold either dry or ground into oil, Lewis Berger, as will be seen from the analysis of prices below, having stocks of both Spanish brown and Venetian red in paste or powder form; but although terminology is confusing, so that it is difficult to be certain whether these pigments were of natural origin or artificial manufacture, it is possible to draw a number of conclusions as to the place each occupied in house-painting.

As indicated above, Spanish brown is universally mentioned as the cheapest variety of the pigment, and was probably most often of native type. John Smith remarked on its universal application in priming timber on account of its cheapness and ability to dry reasonably quickly whilst allowing the oil to penetrate into the fibres, adding that it received the colours to be superimposed well, and described it as a dull, dark red of a horse-flesh colour.\*

\*653 The same application was described in more detail by Leyburn, and Dossie too mentioned Spanish brown as being much used for grounds and coarse work by

\*654 house-painters.\* At the beginning of the nineteenth century, in his Hints for the Preservation of Wood-Work exposed to the Weather (1808) James Crease remarked that although Spanish brown provided the cheapest finish, 'it is not deemed a pleasant colour', recommending that the pigment should not be used on its own and suggesting instead the use of chocolate brown paint in which it was, of course,

\*655 often a constituent.\* Vanherman gave formulae for the preparation of both red and chocolate colour paints for external use employing Spanish brown indicating that its

\*656 price was 8s. or 16s. per cwt.,\* which may be compared with the figures of between 5s. and 5s. 9d. at which Lewis Berger valued his stocks of lump and powder pigment during the first decade of the nineteenth century. These totalled

\*657 nearly 43 cwt. in 1802, just over 197 cwt. in 1806, and just over 73½ cwt. in 1810,\* together with just over 2 cwt.,

\*658 1 cwt., and just over 3½ cwt. in paste form in these three years respectively (valued at between 18s. and 20s. per

\*659 cwt.).\* Both the size of his stock and its availability in paste form show that the pigment was one in common use.\*

Although Reynolds suggested its employment in a red paint for use externally 'Venetian red' seems ordinarily to have been preferred for interior work. Vanherman suggested its use in the production of a 'dark blotting-paper colour' for a picture gallery, mixed with white and a little lamp black, and recommended its employment as a ground for crimson. It was, he observed,

'a sure standing colour, and very useful, as, with

white and black, vermilion and ochre, it produces an infinity of tints, particularly of the drab kind, which are always admired, for their solid appearance and quiet tone.'\*

\*660

Dossie mentioned Venetian red in connection with graining, and Whittock also suggested its extensive use for this purpose and for marbling.\* Again Berger possessed large stocks in both cake and powder form totalling just over 139 cwt. in 1802, over 170 cwt. in 1806, and nearly 76½ cwt. in 1810, the prices at which these were valued ranging from 13s. 6d. to 15s. 9d. per cwt.;\* whilst in addition in 1802 he had nearly 4 cwt. and in 1810 3½ cwt. in ground form valued at 36s. per cwt.\* It seems, therefore, as one would expect, to have been rather more expensive than Spanish brown; but qualities of both probably varied between quite wide limits, and Phillips listed it in 1812 at only 8½d. per lb. against the latter at 8d., whilst in 1802 Soane had been charged at a uniform rate equivalent to 56s. per cwt. for both 'Span<sup>h</sup>. Brown' and 'Gro<sup>d</sup> Venetian Red'.\* The same rate had been charged for the supply of 'fenesion red' at Tredegar House in 1793.\*

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'Indian red' ochre, on the other hand, does not seem to appear in Berger's stock-lists for 1802, 1806, or 1810, so that its relative cost is difficult to assess; but as already mentioned Dossie referred to the use of an artificial variety in connection with house-painting, and Nicholson suggested the use of 'India red' in the preparation of red, chocolate, pearl, and flesh-coloured paint.\* It is probable, however, that the ordinary varieties sold under the name would have been placed amongst the better qualities of pigment used for house-painting; and Reynolds suggested its use in graining (for painting the veins in the imitation of red cedar), whilst Whittock made very extensive use of 'Indian red' in both graining and marbling.\* The prices given by Phillips in 1812 and 1821 suggest respectively that common varieties of Indian red sold retail at 1s. 10d. or 1s. per lb. (one and a half or two and a half those he gave for 'Venetian red'), whilst the 'best sort' cost 8s. 5d.;\* but his lists are often unreliable,

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and the true position thus remains obscure. Against this, both Berger (as already mentioned) and Phillips, who priced it at 3s. 8d. per lb.,\* indicated clearly that burnt sienna was a much more costly pigment than the ordinary grades of red ochre. Thus, although Nicholson suggested its use in mixing 'Fine yellow fawn colour' in oil, and for fawn distemper,\* its expense would surely have precluded its ordinary use in this way; and it would undoubtedly have been reserved for the finer decorative operations such as graining and marbling.

#### RED AND ORANGE LEAD

Although regarded until comparatively recently as a mixture of the monoxide and dioxide of lead, it is now considered that red lead is a compound of formula  $Pb_3O_4$ .\* Its manufacture by roasting white lead was known in classical times,\* but by the second half of the seventeenth century ordinary red lead was generally prepared by roasting litharge. John Smith provided a précis of the description published by John Ray, a contemporary Fellow of the Royal Society, who gave details first of the preliminary conversion of metallic lead to litharge. This was ground through coarse and fine stones in a mill, washed, and placed in a reverberatory furnace for two or three days during which it was kept continually stirred with an iron rake until it had attained the correct colour, described by Smith as a 'fine pale Red'.\* Writing in the middle of the eighteenth century, Campbell noted that red lead was made at Whitechapel amongst other places, and Richard Watson recorded in his Chemical Essays (1781-88) that it was also produced in Derbyshire and at Holywell in Flintshire.\*

As a pigment of moderate price, red lead seems to have enjoyed a wide variety of applications throughout the period under consideration, and could be employed both in oil and in distemper. It was one of the six basic pigments that the London plasterers were permitted to use 'mingled with size' under the 1603 Act of Parliament, and its employment in an aqueous medium was mentioned by both



\*675 Dossie and Watin;\* whilst even in the late 1820s,  
Whittock remarked that it was sometimes used in this  
\*676 way.\* In oil however, there seems always to have been  
a marked reluctance to use red lead as a tinting pigment  
in finishes, possibly on account of the reputation Dossie  
and Whittock seem to suggest it had for blackening in this  
\*677 medium.\* Indeed, the former remarked quite explicitly  
that on account of its tendency to blacken the pigment was  
not much used except for very gross purposes; and although  
experiment with a modern sample has suggested that red lead  
was in fact one of the more stable amongst those in use for  
house-painting during the eighteenth century, it is perhaps  
possible that the earlier product was less satisfactory in  
this respect. Another reason for its apparent unpopularity  
may be contained in John Smith's observation that the pig-  
ment was difficult to grind since it tended to be hard and  
\*678 sandy, a second drawback absent in the modern substance;\*  
whilst Vanherman drew attention to its tendency to separate  
out from an oil medium, observing that it 'adheres so  
strong to the bottom of the paint-pot, that it proves a  
troublesome task to liberate it and bring it into a work-  
\*679 ing condition again'.

In other respects, however, red lead had many valuable  
attributes, John Smith remarking on its opacity in oil,  
\*680 and its quick drying properties.\* On account of the lat-  
ter it was undoubtedly one of the most important driers  
in use, both in the treatment of oils and as a direct  
additive in primings, undercoats, and dark colours, and  
also in formulae for knotting, all of which are discussed  
more fully below. Moreover, at least by the end of the  
period being considered, its protective qualities in the  
prevention of rust seem to have been appreciated, since  
Nicholson recommended its use with only a small admixture  
of white lead for the first coat on external ironwork, and  
Alfred Bartholomew in his Specifications for Practical  
Architecture first published in 1840 specified three coats  
\*681 of 'red lead paint' for the same purpose.\* On account of  
its opacity red lead was a natural choice in providing a  
suitable undercoat or 'ground' for vermilion, a much more  
expensive pigment, although Dossie warned against this

\*682 practice.\* Nevertheless, it seems to have been common,  
and was mentioned by Tingry in particular connection with  
buffets; but red lead was, perhaps, used most extensively  
in coach-painting both for the body and the wheels in the  
\*683 ways described by Pincot and Vanherman respectively.\*  
Red lead was also a favourite adulterant for vermilion,  
a practice discussed in connection with that pigment  
below; but perhaps found its most extensive use in house-  
painting in grounds for graining. Reynolds, for example,  
recommended the use of red lead in the undercoats for  
\*684 'red cedar color',\* whilst Vanherman observed that red  
lead was seldom used in house-painting except as a ground  
\*685 for the imitation of mahogany.\*

Nevertheless, it seems clear that red lead was used  
occasionally as a straightforward staining pigment in  
finishes; although the frequently limited extent to  
which bright orange or red paint was employed in interior  
colour schemes at any given date, especially on large  
areas such as walls or ceilings, as distinct from small  
items of furniture or in picking out decorative elements,  
must be borne in mind. Watin, for example, observed of  
red that it was not commonly used in interior decoration;  
and of red lead in particular, which he included in a list  
of dangerous pigments to be used as little as possible,  
remarked picturesquely that it would 'donne les couleurs  
\*686 d'enfer dans les décorations'.\* Hence, whilst Tingry des-  
cribed the pigment as used on coach and house-painting to  
compose beautiful reds, the only other authors noted who  
mentioned its use for this purpose are Reynolds and Nichol-  
son. Both, however, simply listed it alongside vermilion  
and the other reds available without necessarily implying  
its use on large areas; although the former mentioned it  
specifically in connection with interior decoration, whilst  
suggesting also its combination with Spanish brown to pro-  
\*687 duce a red paint for external use.\* Its use with yellow  
ochre in mixing orange paint was also mentioned by Reynolds,  
\*688 here again for exterior application;\* whilst John Smith had  
recommended a similar combination to make brick colour,  
and Nicholson also suggested its use with yellow to produce  
an orange, although neither English author indicated whether

\*689 he had an interior or exterior context in mind.\* Other-  
wise, the only other suggestion encountered for employment  
of red lead in tinting an interior finish is that provided  
by Tingry, who recommended a small addition of the pigment  
in the preparation of buff for which Watin had used  
vermilion and in mixing which William Butcher employed  
\*690 either vermilion or orange lead.\*

Orange lead

\*691 This last pigment, which was used also by Butcher in  
preparing the ground for the imitation of mahogany,\*  
seems to have been a slightly different form of red lead,  
although contemporary details are obscure. Clearly, how-  
ever, it was a more expensive product, since Rondelet  
gave the price of mine orange as 1fr.25 per pound against  
\*692 80c. for faux minium ou mine rouge;\* and a similar rela-  
tionship is found in the prices at which Berger valued his  
stocks. Thus, in 1802 red lead was priced at 26s. per cwt.  
against 48s. for orange lead, whilst in 1806 and 1810 the  
proportional differences were maintained between 38s. and  
60s. and between 36s. and 58s. respectively. It is also  
interesting to note that in the same years Berger had  
always considerably more orange lead than red lead in  
stock, the figures for 1802, for example, being just over  
7½ cwt. and nearly 60 cwt. respectively; whilst in 1806  
he had 6 cwt. of red lead against nearly 17 cwt. of orange  
lead, and in 1810 merely about 4½ cwt. of the first against  
nearly 63 cwt. of the latter. (In addition in 1802 he had  
a small stock of 11 lb. 'Washd Orange Lead' valued at a  
\*693 rate equivalent to 84s. per cwt.)\* At the end of the nine-  
teenth century, Hurst described orange lead as made by  
roasting white lead rather than litharge, an interesting  
return to the method of manufacture practised in classical  
times. The product was, he indicated, rather paler in  
colour than ordinary red lead and also lighter in weight,  
but otherwise identical in its properties and used for  
\*694 very similar purposes.\*

Altogether, therefore, it seems clear that the prin-  
cipal use for red or orange lead in house-painting was as  
a drier or in undercoats. Although it had certain uses in  
oil, mostly in mixing oranges, for red finishes and other

tinting applications in this medium it was regarded as considerably inferior to vermilion, an attitude perhaps best expressed by Vanherman who indicated that it was employed on waggon or cart wheels, whilst vermilion was used on those of coaches.\* This relationship is reflected too in the expense of the latter pigment against red lead, which seems to have retailed at prices varying from 5d. per pound at the beginning of the eighteenth century to 4½d. at the beginning of the nineteenth, although the more expensive variety, orange lead, was then available.\* Probably, however, it was more extensively used in distemper, particularly perhaps as a substitute for vermilion in the preparation of pinks by admixture with the cheaper varieties of red lake, a possibility discussed at greater length below in connection with colour mixing.

#### VERMILION

Vermilion, or mercuric sulphide, occurs naturally as the mineral cinnabar. Ure described the chief European beds as being at Almaden, near Cordova in Spain, and at Idria in upper Carinthia (now Idrija in Western Slovenia, Yugoslavia, 23 miles west of Ljubljana).\* However, although natural pigment has been used since classical times, it was being prepared artificially well before the period here being considered. Mediaeval methods of manufacture are touched on by Dr. Harley;\* and it is notable that, whilst Watin mentioned the natural cinnabre and Rondelet listed it at a price of 10fr.20 per pound against 6fr. for vermillon, no English author has so far been noted who referred specifically to the natural pigment in connection with house-painting.\* Indeed, Hill observed that:

'The purer native Cinnabar has been used to be much esteemed... but our factitious kind equalling it in Beauty, and being much cheaper, has banished it from among the Painters.'\*

Many authors, including both John Smith and Dossie, described the manufacture of vermilion by the 'dry' method in which mercury is added to molten sulphur to produce on

cooling the mass of black mercuric sulphide known as  
\*701 'Ethiops'.\* This was then crushed and sublimed to pro-  
duce the red form of the sulphide, or vermilion, which  
can vary from orange to bluish red in tone depending on its  
physical structure, notably the size and shape of the par-  
\*702 ticles.\* English vermilion was regarded with suspicion  
\*703 by Watin since he believed it contained red lead;\* and if  
on this account it had a poor reputation on the Continent,  
judging by the frequent warnings of such adulteration  
given by Dossie, Butcher, Whittock, and Vanherman, this  
\*704 seems to have been well deserved.\* Hence Tingry observed  
the pigment was chiefly produced in Holland, although  
Nicholson remarked that the best was imported from China  
\*705 and Dutch vermilion was an imitation.\* Samples of both  
Chinese and Dutch pigment are contained in the notebooks  
of the London colourman George Field dating from the early  
nineteenth century, the former of these examples having a  
\*706 purplish cast, and the latter a brighter tone.\* Lewis  
Berger had employed Chinese vermilion in the 1780s as a  
\*707 base for cochineal lakes,\* and Vanherman too expressed a  
\*708 preference for pigment 'if genuine' from this source.\*  
Nevertheless, Berger himself was experimenting with the  
manufacture of vermilion by 1825, when he made notes on  
milling requirements for dark and pale varieties, and had  
apparently commenced production by 1831 when the pigment  
\*709 cost 2s. 3½d. per pound to prepare.\* This price relates  
well to evidence from other sources, which suggest that  
the retail cost of the pigment (for this in common with  
others about twice that Berger noted for manufacture)  
remained fairly stable from the late seventeenth well into  
the nineteenth century. Stalker and Parker, for example,  
\*710 listed vermilion at the equivalent of 5s. 4d. per pound,\*  
and Berger was offering the pigment for sale during the  
\*711 1780s at prices between 5s. and 5s. 6d.\* His stocks during  
the first decade of the nineteenth century were fairly  
modest, amounting to 27 lb. in 1802, and by 1810 stood at  
only 157 lb.; whilst in 1806 he had 17 lb. of 'Deep Vermil-  
lion' in stock. These were valued at rates ranging from  
\*712 4s. 5d. to 5s. 4d. per pound.\* However, although Berger  
held stocks of Chinese vermilion it is difficult to eval-  
uate the cost and extent of these since they were recorded

\*713 by the 'packet';\* but the prices given in Crosby's  
Builders' New Price Book, whilst as usual rather higher  
than those encountered elsewhere, suggest that the  
oriental 'Chinese' product at 12s. per lb. may have been  
sold retail at about one third to one half above that  
\*714 charged for the European or 'English' at 8s. 5d.\* This  
seems to be confirmed by the prices of 7s. 6d. per pound  
for 'Chinease Vermillion' quoted in a costed lake for-  
\*715 mula of 1787 contained in the Berger archives.\*

Vermilion seems generally to have been purchased  
in powder form, since it was priced in this category by  
Stalker and Parker, and Tingry's later editor recommended  
it as best ground in oil oneself, possibly because, as  
Vanherman pointed out, it is apt to 'fatten' or settle  
\*716 on standing.\* No doubt also it was easier to detect  
sophistication in the dry pigment. Although vermilion  
can be used in an aqueous medium, its use in 'distemper'  
\*717 is mentioned only by Whittock,\* and its employment to any  
great extent in this medium other than in graining seems  
unlikely, bearing in mind its costly character. Indeed,  
Nicholson described the pigment as too expensive for com-  
\*718 mon use,\* and Pincot remarked that 'Vermillion' was an  
extravagant colour costing an extra 8d. per square yard  
\*719 above that of ordinary paint.\* Thus, although John Smith  
ranged it alongside smalt and lake as providing 'the most  
\*720 glorious Ground of all others for Gold',\* this should,  
perhaps, be seen more in the context of the comparatively  
limited areas of such items as clock dial boards than  
whole areas of walling or joinery; and its use undiluted  
with other pigments would most probably have been generally  
confined to comparable applications or for picking out  
architectural elements. Hence, although vermilion was  
included amongst other pigments which could be used for  
\*721 red paint by both Reynolds and Nicholson,\* Tingry illus-  
trated its employment thus only in the painting of buffets,  
\*722 and Pincot adverted merely to its use in carriage painting.\*

Nevertheless, the pigment was important. Both Reynolds  
and Whittock recommended the use of vermilion in preparing  
grounds for the imitation of different timbers, the latter

making extensive use of it both for this and to a more limited extent in marbling, and employing it both for grounds and for the superimposed glazes.\* However, apart from such specialist uses, it is Vanherman who provided the best indication of its general applications in house-painting. Vermilion was, he observed, a most useful and extremely beautiful colour, but powerful and to be used with caution. Hence, he summed up its character by remarking that it 'adds brilliancy to all the other reds'; and accordingly employed it with lake to make a bright scarlet, and with rose pink to make a crimson colour which he recommended for libraries.\* Such combinations of delicately transparent, but fugitive, organic pigment with the more stable, opaque, vermilion had obvious advantages, both aesthetic and technical, and were widely used. Moreover, as already mentioned, vermilion was employed by Berger as a base for red lakes. Combinations of vermilion with organic reds were particularly useful in the preparation of pinks and other tints, and such mixtures were recommended throughout the period being considered. John Smith, for example, suggested the use of vermilion with lake and white lead to mix a flesh colour,\* and Watin its combination with carmine and white lead to make couleur de rose;\* whilst a comparable mixture was proposed by Nicholson for apricot and peach colours.\* As suggested by Vanherman, vermilion could also be used with yellows to tint white to buff or orange;\* and Watin, for example, recommended its employment with Naples yellow in chamois,\* and Butcher its combination with stone ochre in fawn.\* Moreover, combinations with blue were suggested by the author of The Painter's... Pocket Manual, who mixed violet in this way,\* and by Butcher, who, amongst other alternatives, suggested the use of vermilion with Prussian blue to mix French grey.\* Used in such ways it is clear that vermilion occupied an important position in better quality interior work in oil, although, as suggested above, it was probably not used in distemper where its place was taken by red lead.

REALGAR - see under 'ORPIMENT, KING'S YELLOW, AND REALGAR' above.

Organic red  
pigments and  
dyestuffs

In many ways the position occupied by the organic red pigments corresponds to that of the organic yellows; but in this case, although their impermanence again made them unsatisfactory for many ordinary purposes, for a large number of applications in the mixing of reds and pinks better alternatives were available amongst the inorganic substances discussed immediately above. Hence, apart from their ability to modify the tone of these, the use of red lake pigments seems to have been rather specialised in the production of French greys and similar colours which needed only small quantities of the moderately expensive grades, or for graining and marbling where only again small quantities were employed in work which was itself of a rather more costly nature and transparency was needed. Very cheap qualities, on the other hand, undoubtedly enjoyed fairly widespread use in distemper work, but use of any grade for ordinary exterior paint can almost certainly be ruled out. The methods used for the preparation of organic red pigments were generally comparable with those described in the case of the yellows, and similar white bases were employed, although vermilion was sometimes also pressed into service. However, whereas the yellow dyes seem to have been regarded as interchangeable, different red pigments are in general related much more specifically to particular dyestuffs, possibly on account of the wider variations in cost between them which were reflected in the end product. As with the yellow lakes, the dyes themselves are first briefly discussed, and again for convenience an example used to stain parquet is included.

Coccus

Red dyes may be extracted from three varieties of winged insect: kermes, Coccus ilicis, which is native to southern Europe; the lac insect, Coccus lacca, native to India and neighbouring countries; and the cochineal beetle, Dactylopius coccus (formerly known as Coccus cacti), from Central and South America. Although the dye from kermes, which lives on the oak, Quercus coccifera, was widely used during the middle ages, it is the weakest of the three and seems to have become more or less obsolete by the second half of the seventeenth century.\* Lac



dye from India was, however, still in use at this date, but was rapidly supplanted by that from cochineal. The red dye, laccaic acid, produced by the lac insect is present in the sticky exudation in which its eggs are laid on the branches of a host tree, which may be one of a number of species. Cultivation today concentrates on the associated resin used to manufacture shellac, and the dye is run to waste after it has been washed out of the lac, which is broken from the branches and granulated for the purpose. Formerly, however, the dye was precipitated from the washing water with lime to form a coarse powder which contained about ten per cent of the colouring matter,\* a process possibly carried out in England on occasion, since Dr. Harley observes that considerable quantities of unrefined 'stick lac' were imported during the eighteenth century.\* In the case of cochineal the dye, carminic acid, is extracted directly from the bodies of the killed and dried insects which live on cactus plants; and cochineal, which was being imported by Spain during the sixteenth century,\* was priced at 35s. per pound in an early seventeenth-century English manuscript.\* This is remarkably similar to the rates of between 27s. and 35s. at which Lewis Berger valued his stocks during the first decade of the nineteenth century, which amounted to 225 lb. in 1802, nearly 505 lb. in 1806, and 421 lb. in 1810.\*

Brasil and  
logwood

Markedly fugitive dyes purplish red in alkaline conditions are contained in trees of the genus Caesalpinia native to South America and the West Indies, and may be extracted by boiling the timbers in water. That from the latter source is known generally as sapan wood and is inferior to that from the former which has been known by a large number of names, but most generally as brasil wood (a name derived from the Latin rosa, rather than from the country, Brazil).\* Even by the mid-nineteenth century, the different species to which the names were applied had not been completely rationalised, and in earlier years the timbers were often known by their place of origin, or by the names of places from which apparently similar material had been obtained. In the first half of the seventeenth

century Sir Theodore Turquet de Mayerne, a Genovan physician resident in London, noted the use of Pernambuco brasil in the preparation of 'Rosette';\* and during the early nineteenth century, as will be shown, Lewis Berger was using 'Nicaragua wood', to which he also referred as 'Cutt wood', for making rose pink (q.v.). Timber under the former name, used notably today in the making of violin and cello bows, is generally identified today with C. echinata, although Ure suggested C. brasiletto, which, he indicated, was little inferior to the first species of brasil he mentioned, C. crista, and had been especially abundant in the West Indies. However, on account of its slightly cheaper price than the latter, demand for it had been, he said, so great that nearly all the trees in the British possessions were cut down and the timber was consequently scarce on the English market. He was, on the other hand, uncertain even over the genus to which 'Nicaragua wood' belonged, suggesting that it might be a species of Haematoxylon, and commented that, going also under the names 'Peach wood' or 'Santa Martha wood' it yielded an inferior quantity, though better colour, of dye.\*

Trees of the genus Haematoxylon, for example H. brasiletto, may yield a dye of similar colour to that of the brasil woods already described; but that obtained from other species of this genus such as the South American H. campecheanum, otherwise known as logwood or Campeachy wood, and obtained, Ure remarked, from the bay of the latter name, is bluish purple in colour in alkaline conditions and similarly fugitive. (Both red and purple extracts are indicator dyes, and turn yellow in acids.) This species, Ure recorded, had been grown in Jamaica since 1715;\* but although its import into England, which had been prohibited in 1581\* was again permitted on repeal of the statute by a second Act of Parliament in 1662,\* no references to its use in connection with the preparation of a pigment for use in house-painting have been encountered. Its employment was, therefore, probably restricted to fabric dyeing and similar purposes. Nevertheless, Berger had a stock of 50 tons of 'Logwood' in 1806, valued

\*745 at £17 per ton;\* and at the end of the nineteenth century,  
Hurst published a number of formulae for violet lakes  
\*746 calling for its use.\*

Returning to the species yielding red dyes, Berger also held stocks of both 'Cut Wood' and 'Braziletto Wood'. Each almost certainly fall within this category, the former on account of the applications to which it is assigned in his pigment formulae (one of which for rose pink refers to it as 'Cut Nic Wood') and the latter on account of its name. Interestingly, the Nicaragua 'Cut' wood commanded a marginally higher price, since his stocks of 2 cwt. in 1806 were valued at the equivalent of £31 per ton, whilst he had 3 tons of the 'Braziletto' valued at £28 per ton. The prices of these timbers, however, seem to have been subject to considerable fluctuations, since by 1810 he was valuing his stock of 13 cwt. of the former at the equivalent of only £15 10s. per ton, and 8½ tons of the latter at £12 10s.\* Since the two rates moved together, maintaining the same proportional relationship, it seems more likely that the fluctuations in price were connected with market conditions than variations in the quality of the timber; and it is possible, therefore, that these reflect the difference noted some years later by Ure to which reference has already been made, between material from the mainland and that from the British possessions in the West Indies. Whatever the truth of this though, the price seems to have stabilised at the lower figures, and Berger recorded 14s. per cwt. for 'Nicaragua wood' in a costed formula of 1831, again for rose pink.\*

#### Madder

The roots of Rubia tinctorum and related species yield purpurin and alizarin, and the plants were cultivated extensively in Europe and the Levant for use in the dyeing industry. The major source of madder during the whole of the period under consideration seems to have been Holland. Depending on the care taken in the process and in the selection of the madder, the colour of the dye extracted may vary from purple to brown, the better qualities coming from the central fibres of the root only. This was known as crop madder; and cold water was used for extraction in

order to avoid contamination of the more brilliant fractions by browner elements which are progressively more soluble as the temperature is increased. The dyes from madder are much faster to light than any of those so far described, being much prized on that account; and the development of the madder industry has been fully discussed by Dr. Harley.\* In 1806 Berger had a stock of nearly 192 cwt. of madder valued at 65s. per cwt.; and in 1840 was using 'best crop Madder' at 1s. per lb. for lake making.\*

#### Orchill and Litmus

The indicator dye from this source, red in acid and blue in alkali, has been dealt with above in the section on blue pigments.

#### Safflower

The petals of Carthamus tinctoria yield two dyes, one yellow and the other red. Ure indicated that the latter only was of use, and was extracted by the application of sodium carbonate once the yellow dye had been washed out of the petals by simple solution in water.\* Tingry's later editor observed that the dye from Carthamus was used in the cosmetic called 'Spanish vermilion';\* and Watin mentioned that it was used for staining parquet. He referred to it as safran bâtard, observing that druggists called it safranum; and on this account especial care is necessary to avoid confusion with both true saffron and with turmeric (safran des Indes) which have been discussed above. The best dye, Watin believed, came from the Levant, although it was, he said, grown also in Alsace and Provence.\*

#### INDIAN LAKE

Turning now to the pigments prepared from the dye-stuffs listed above, the only specific reference to Indian lake is that by John Smith in the 1687 edition of his book. Although the text relating to this remained otherwise almost exactly the same, it was amended from the third edition of 1701 to refer simply to 'Lake', an indication, no doubt, that lac dye had been generally superseded by cochineal.\* He described the pigment as,

'the best of all dark Reds, being a most pure  
Crimson; 'tis a Colour that will grind very  
fine, and lies with a good Body, but there must  
be good store of pains taken with it in the grind-  
ing, for if it be not well and thoroughly ground,  
its Colour will want much of its glory; and besides  
this, 'twill work with some difficulty, so that  
'twill be apt to cling up together, after 'tis laid  
on, just as you see warm Water do upon a greazy  
Trencher, when washed in it;... of this colour  
there be divers sorts at the Colour-Shops, very  
different in their Colours, some being of a more  
dead and pale Colour;... the best sorts come from  
\*755 Venice and Florence.'\*

#### CARMINE AND CARMINATED LAKES

\*756 Lake pigments made from cochineal were apparently  
known in England at least by the early seventeenth cen-  
tury under the name 'Lake of spayne'.\* The dye precipi-  
tated from the imported insects, known as carmine, was an  
extremely expensive commodity. It was prepared by boiling  
the pulverised beetles in water and treating the decoction,  
which was filtered off, with various precipitating agents  
or mordants such as alum (potassium aluminium sulphate),  
cream of tartar (potassium hydrogen tartrate), borax, or  
tin salts (either stannous chloride or stannous nitrate);  
the resulting liquid being allowed to stand, often for a  
period of some days, in order to allow the carmine to  
settle out. The use of different salts in this way,  
either singly or in combination, allows the colour of the  
pigment to be varied; and, in addition to the substances  
\*757 listed, Dossie referred to the use of nitric acid.\* The  
formulae of Lewis Berger, which commence in 1787, show him  
using various combinations of the substances listed above;  
and reveal also that from the start in many instances he  
\*758 was forming the dye in the presence of vermilion,\* a  
practice to which reference was made by nineteenth-century  
\*759 writers.\* Varieties containing this were produced more  
cheaply, the pure grades of carmine in Berger's 1831 range,  
for example, costing 6s. 5d. and 5s. 1d. per ounce to

manufacture, against 2s. 8d. and 1s. 3d. for those containing vermilion.\* Between 1778 and 1780 Berger was offering different qualities of carmine for sale at prices from 10s. to 24s. per ounce; and during the early nineteenth century when he valued his stocks in 1802, 1806, and 1810, for example, at prices ranging from 14s. 3d. to 2s. per ounce, these were proportionately small, in none of these years rising above a total of 18 pounds.\* One would not, perhaps, expect to find such an expensive pigment used in house-painting; but nevertheless, Watin remarked: 'Nous l'employons quelquefois dans les décorations, pour, dans les couleurs vigoureuses, soutenir la laque'.\* Clearly, however, this must be regarded as hardly reflecting ordinary practice.

For more general use, cochineal was used to prepare aluminium hydroxide lakes, which were often known as carminated lakes. The late seventeenth-century writer, Richard Waller (who mentioned also the obsolete dye from kermes and the obsolescent dye from lac), described the preparation of red lakes in this way;\* and Watin distinguished between laques fines made using the same method, and laques ordinaires which were made with chalk, usually using the inferior dyewoods.\* In the former category he included both laque de Venice and laque de Florence, to which, it will be remembered, John Smith had also drawn attention as of the best quality. Dossie too referred to both aluminium hydroxide and chalk based pigments as lakes;\* and, since the unqualified term was clearly, therefore, not applied exclusively to the former, it must be approached with a degree of caution in the interpretation of recipes for the mixing of paint colours. Various grades of carminated lake were made, some from the coloured liquor left over from the production of carmine, and others from 'recycled' dye extracted from red rags; and Dossie, for example, said of lake that in former times it had no doubt been made from lac, but by his time was seldom prepared from anything other than cochineal, brasil wood, or scarlet rags.\* To extract the dye from the latter, it was only necessary to boil them in a solution of an alkali such as potassium carbonate, a procedure described by Tingry.\*

Although it is possible to prepare an aluminium hydroxide lake by the simple addition of a solution of potassium carbonate to that of the alum and dye, Ure observed that this produced a poor colour in the case of cochineal, and for this reason freshly precipitated aluminium hydroxide was added to the dye bath, a method used, he indicated, in other instances where the affinity of the dye for this base was strong.\* It is of particular note, therefore, that this was the procedure followed by Berger, who prepared such a 'Lake White' from alum and pearl ash.\* Interestingly too, Ure observed that the colour of lakes made from cochineal on a bright day was better than that of those made in dull conditions, perhaps explaining the excuse offered by Lewis Berger in a letter of 10th March 1785 that lake production had been held up by severe weather.\*

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The development of Berger's lake production followed closely that already described in the case of carmine, and he made a range of drop and other lakes, many of which contained vermilion.\* In 1831 his range contained ten varieties of drop lake, production costs lying between 26s. and 12s. 10d. per lb. for varieties (which he identified by letters such as 'L', 'LL', or 'SB') free from vermilion, and between 15s. 7d. and 4s. 6d. for those in which it was used (numbered 2 to 8). Wet lakes (presumably kept in a damp state like the varieties of Prussian blue intended for use in distemper), some of which again contained vermilion, were cheaper to produce at between 2s. 2d. and 9d. per lb.; whilst his rose lake, which, although a true aluminium hydroxide lake also contained barytes, cost 2s. per lb. to manufacture. In addition he was producing a range of three purple lakes at costs running between 6s. 8d. and 8s. 8d. per lb.\*

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Although considerably cheaper than carmine, it may be seen, therefore, that even the more modestly priced grades of wet lake were still moderately expensive pigments for house-painting purposes. Between 1779 and 1780 Berger was offering drop lakes at prices from £5 to 20s. per lb. and wet lakes from 6s. to 2s. As with carmine,

his early nineteenth-century stocks reflected their high prices, and, valued in 1802, 1806, and 1810 at rates from 73s. 6d. to 10s. per lb. these did not rise in any of these years above 218 lb. in total.\* Hence, although Butcher and Nicholson indicated that lakes were used in mixing red paint,\* and Laxton included 'lake colours' in the most expensive group for which he gave prices,\* Vanherman observed that lake was expensive and not much used in house-painting except for apartments of the first order. Nevertheless, he indicated, it harmonised with Prussian blue to provide a variety of beautiful purples and with chrome yellow to provide brilliant oranges of various gradations, the former use also being mentioned by Nicholson.\* Undoubtedly, however, its primary use in house-painting would have been in the production of pinks and such tints as lavender or French grey, where only small quantities were required to produce the desired blush; and Tingry, Nicholson, Butcher, and Vanherman all mentioned the use of lake in this or similar ways.\* Being transparent in oil it was also used to a considerable extent as a glazing pigment in graining and marbling; and Vanherman suggested its employment in connection with the finishing touches in the imitation of mahogany,\* whilst Whittock too relied on red lake, drop lake, and crimson lake in both grounds and glazes.\*

#### ROSE PINK AND CHEAPER VARIETIES OF LAKE

The cheaper varieties of organic red pigment, generally known as rose pink, were made by the same process as the cheap organic yellows, by adsorption of the dye onto chalk. In general the dye used was that from timbers such as brasil rather than cochineal, and although Whittock did suggest use of the latter as an alternative, the more authoritative authors, Dossie and Tingry, referred only to the use of dyewoods. (These could, on the other hand, as they also mentioned, be used to make true aluminium hydroxide lakes.)\* Formulae for rose pink appear in the Berger papers from 1805, made from 'Cutt Wood', 'Cut Nic Wood' or 'Nicaragua wood', the liquor extracted from which was in all cases mordanted onto chalk by the



agency of alum; and in 1831 the pigment cost 24s. per  
\*781 cwt. to manufacture.\* From 1779 to 1788 Berger had been  
offering rose pink for sale at prices between 63s. and  
84s. per cwt., but in 1802, 1806, and 1810 valued his  
stocks at prices of 42s., 50s., and 34s. per cwt. res-  
\*782 pectively.\* The contrast between these prices and those  
quoted above for carmine and carminated lakes needs no  
emphasis; and although in the latter two years his stocks  
had fallen to around 7 cwt. in 1802 he had over 35½ cwt.  
in stock indicating clearly that the cheaper product was  
one in fairly common use. Significantly 'Russet' (which,  
Dr. Harley notes, shares with brasil wood the common  
Latin root rosa, and was a term applied to the dye  
\*783 extracted from the latter, rather than to a pigment  
made from it)\* was one of the six basic tinting materials  
the London plasterers were allowed to use in distemper  
\*784 under the 1603 Act;\* but the cheaper lakes such as rose  
pink were not mentioned by John Smith, indicating that  
they were not generally used in the more expensive oil  
medium. This was undoubtedly owing in a large measure  
to the extremely poor reputation pigment prepared from  
brasil wood enjoyed; and Dossie, for example, warned that  
it could never be expected to stand when used either in  
oil or water, and was seldom employed for any purpose than  
\*785 the coarse work of house-painting.\* Tingry's later editor  
also warned that it was fugitive, adding that for this  
\*786 reason it was stored by colourmen in damp, dark cellars;\*  
but Vanherman, who noted that rose pink was a substitute  
for lake, whilst cautioning that it was to be depended  
upon even less than the latter, added more hopefully that  
he had been informed that the pigment prepared by some  
suppliers stood the test of time better. He was, he said,  
carrying out tests to check this, but the results, if  
ever published, are not known. Experiment has shown his  
caution was fully justified, but he nevertheless used  
rose pink in mixing lavender, crimson, and French grey  
\*787 for interior use.\* Whittock, however, used rose pink to  
a certain extent in graining glazes, but took pains to  
point out that this was only possible since the end pro-  
duct was varnished and would thus be protected from the  
\*788 action of the atmosphere;\* whilst Nicholson too recommended

\*789 its use in a glaze for the imitation of mahogany.\*  
Reynolds's suggestion that rose pink could be used in  
red or purple paint seems, therefore, a dubious one,  
assuming that as with his other formulae, he had oil in  
\*790 mind;\* but Field remarked that rose pink was used in  
wallpaper manufacture 'and in the commonest distemper  
painting', and in these ways it would undoubtedly have  
\*791 enjoyed everyday use.\*

#### MADDER LAKES

Although Tingry gave three recipes for the prepara-  
tion of madder lakes (to which his editor added a fourth)  
and Vanherman too included a madder formula amongst those  
towards the end of his book, no direct reference to the  
\*792 use of such pigments in house-painting seems to be made.\*  
The reason for this was clearly expressed by the author  
of The Painter's... Manual published about 1830, who  
observed:

'Madder being itself abundant and cheap, the costli-  
ness of madder lakes has been hitherto entirely  
owing to the extremely tedious and complicated  
methods pursued in the manufacturing of them.'

In this it seems clear that he was referring to the care  
necessary to extract dye of sufficiently good colour from  
the crushed roots, but although he drew attention to re-  
cent improvements in technique, he still described madder  
lakes as being nearly the same in price as cochineal  
\*793 lakes.\* It is most unlikely, therefore, that house-  
painters would have been able to take advantage of the  
relative permanence of madder compared with cochineal dur-  
ing the majority of the period under consideration, and  
even in 1832 when the first production formula appears in  
the Berger archives (he had been experimenting with it  
since 1816) its cost price was 11d. per ounce making it  
\*794 doubtful that it was ever used for this purpose.\*

#### Brown pigments

Apart from brown pink, which has been discussed above  
in connection with the organic yellows, and the bitumenous

pigment Vandyke brown, whose uses were limited to quite specialised purposes, the only brown of importance in house-painting was the earth pigment known as umber.

#### UMBER, RAW AND BURNT

The naturally occurring pigment known as umber is closely related to the yellow and red ochres discussed above, but differs from them in containing a certain proportion of manganese dioxide. It is fairly transparent and quick-drying in oil, both in its raw state and when burnt to darken and redden the colour. Sir Roger Pratt observed that in its crude form umber was of a 'muskish' colour, but that when burnt it was almost of a liver colour.\*

\*795 Its use as a drier is discussed further below. The most famous source of umber is Cyprus, pigment from this area being known as Turkey umber, and specimens may

'Turkey umber'

\*796 be seen at the I.G.S.\* It was, therefore, probably to Cyprus that John Smith referred when he described umber as being 'dug out of a certain Island in the Mediteranian

\*797 Sea'.\* His contemporary, Plot, described a number of

British \*798 varieties found in Oxfordshire;\* and deposits also occur

sources elsewhere in the British Isles, notably in Devonshire,

of umber the Mendips, Derbyshire, and Ireland. Vanherman mentioned

\*799 the use of raw Devonshire umber\* sources in this county, including Ashburton (specimens from which are to be found

\*800 at the I.G.S.)\* and Milton Abbot. Both were referred to by the late nineteenth-century author George Hurst, who

\*801 also mentioned umber from Veryan near Truro in Cornwall, besides pigment from Wales. Derbyshire umber was, he

\*802 observed, rather violet-brown in hue;\* and this source together with Flintshire and the Mendips was referred to by Nicholson, who mentioned too pigment from County Wex-

\*803 ford.\* The variety from Ireland which was to become more famous, however, was the Cappagh brown from County Cork, a sample of which is contained in Field's notebook; but the mine, which Church recorded was first opened in 1814,

\*804 has now been exhausted.\* In general, the English varieties were considered inferior to those from Cyprus, a matter expressed explicitly by Tingry's later editor, and reflected in the price differences mentioned below.\*

General use of umber to produce dark brown colours does not seem to have been advocated in the published literature on house-painting of the period here being considered, and it is likely that a mixture of red ochre and black, which would in any case have been much more opaque in oil, would have provided a cheaper way of mixing such dark tones. Nevertheless, umber colour, is a colour name occasionally encountered in late seventeenth-century painting descriptions or accounts such as that of Haunduroy for work at Dyrham Park, Gloucestershire (now Avon), in 1694; and in 1638 the Little Hall and Passage at Ham House, Surrey, were given two undercoats of 'Umbre in Oylle', suggesting that it may have been employed to some extent for this purpose.\* In general, however, it seems more likely its use was mainly in the production of warm off-white colours, and, in the early nineteenth century, for the dulling of greens. John Smith, for example, mentioned the use of burnt umber with white to mix the colour of new oak wainscot;\* Watin mentioned its combination with white and other ochres in timber colours such as bois de chêne and bois de noyer, advice repeated by Tingry;\* Reynolds referred to its combination with other pigments in light stone colour;\* Nicholson used burnt umber in fine yellow fawn colour;\* Butcher employed burnt umber in Portland stone colour;\* and Vanherman employed raw umber in several greens both for interior and exterior application, remarking also that with white it produced a number of 'pleasant quaker tints', and of burnt umber that, used in this way, it would mix warm drabs.\* Although in some cases it is not clear whether burnt or raw umber is intended, most writers mentioned the practice of burning the pigment, and it seems certain from the above that it was frequently employed in both states.

Umbre was used also in decorative work where its transparency in oil was a valuable asset, and found particular employment in graining. John Smith, Reynolds, Whittock, and Vanherman all mentioned it in the latter connection;\* whilst Smith indicated in addition that it was the natural choice for shadowing gold,\* an application of the pigment well illustrated in John Martin's account

of the method used in repainting the clock face of  
\*814 Watford Church, Hertfordshire, in 1700.\* The pigment  
works well in oil or distemper, and it seems surprising  
that it does not appear amongst those the plasterers  
were allowed to use in the latter medium under the 1603  
\*815 Act of Parliament.\* Whittock, indeed, commented that  
\*816 it was useful in distemper,\* and its employment for  
common purposes in this medium appears most likely.

It was, therefore, in almost all respects a widely-used pigment. Lewis Berger had fairly substantial stocks during the first decade of the nineteenth century, especially of Turkey umber. In 1802 these stood at just over 28½ cwt., and although they had fallen by 1806 to only just over 5½ cwt., by 1810 stood at nearly 230 cwt. Against these his stocks of English umber never rose in any of these years above 16½ cwt. The prices of these pigments too were liable to quite wide variations, but a clear relationship between the price of the two varieties may be discerned. During the 1780s, for example, Berger was offering Turkey umber for sale at 36s. per cwt. and English umber at 24s.; whilst in 1802 he valued his stocks of the former at 35s., a price still close to that a decade or so earlier. By 1806, however, this had risen to 60s. per cwt. with English pigment at 24s., but in 1810 the prices had fallen dramatically to 20s. and 12s.  
\*817 respectively.\* It is therefore interesting to note that  
in 1828 Vanherman gave the price of raw Devonshire umber  
\*818 as the equivalent of 28s. per cwt.\* In addition, Berger  
held much smaller stocks of burnt umber, which, whilst  
again fluctuating, always maintained a markedly greater  
superiority over the price of the ordinary pigment. These  
amounted to ½ cwt. in 1802 valued at 70s. per cwt., 34½  
lb. in 1806 valued at a rate equivalent to 112s. per cwt.,  
\*819 and 52 lb. in 1810 valued at 35s. per cwt.\* Retail  
prices as usual seem to have been rather higher than  
those at which Berger valued his stocks of umber: 6 lb.  
were supplied at Boughton House, Northampton, in 1704 at  
a cost of 6d. per lb.; the same price was charged in  
1793 for 2 lb. Turkey umber at Tredegar House, Newport,  
Monmouthshire (now Gwent); and Soane was charged 8d. for

\*820 1 lb. in 1803.\* In addition he purchased 3 oz. of burnt umber at a rate equivalent to 2s. 8d. per lb. These prices establish a fairly clear hierarchy of grades, even if it is difficult to suggest a reason for their wide fluctuations from year to year; and it may be suggested, therefore, that unless specifically qualified as Turkey or burnt umber, it was generally the raw pigment of lower grade which was intended.

VANDYKE BROWN (CASSEL EARTH, COLOGNE EARTH)

'Collen's' or  
Cullen's earth'

Natural varieties of soft impure brown coal or lignite containing a certain proportion of ferric matter may be ground and prepared for use as pigment. Material from Cologne, often called Collen's or Cullen's earth, was known in England during the first half of the seventeenth century; and pigment from Cassel, often referred to from the end of the eighteenth century onwards as Vandyke brown, also came to be imported.\* Lewis Berger held very small stocks of both during the early nineteenth century, having 4 lb. of the latter in 1802 valued at 1s. per lb. and 4½ lb. of Cologne earth in 1806 valued at 8d. per lb.; whilst in 1810 he had 8 lb. each of Vandyke brown and Cologne earth valued at 2s. 6d. and 2s. per lb. respectively.\*

\*821 Apart from the slight difference in price, the practical difference between the two is not clear; but both varieties fall into the more expensive range of pigments where house-painting is concerned, and (although Whittock proposed the use of Vandyke brown in warm brown and cinnamon colour distemper)\* use of pigments of this type seems generally to have been limited to certain specialised purposes in decorative work. John Martin, for example, described the employment of burnt umber with a little 'Cullens-earth' in shadowing certain details of the clock dial-board at

\*822 Watford Church, Hertfordshire, in 1700;\* and both Whittock and Nicholson mentioned the use of Vandyke brown in grain-

\*823 ing, the former making extensive use of it in this connection.\* Such applications would have exploited the transparency of the pigments, and would have justified expenditure on their additional cost over the price of other browns such as umber; so that (despite the listing

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\*825

of Cologne earth by both Martin and Nicholson, who copied uncritically from Dossie) it seems unlikely that pigments of this type would have found much use for common purposes.\*

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#### BISTRE

As with Vandyke brown, the inclusion of this pigment in the lists of Martin and Nicholson can be traced to Dossie, who described it as an artists' water colour.\* It was made, he indicated, by boiling the soot of beech wood in water, decanting the resulting liquid from the solid matter whilst still hot, and evaporating it to dryness. Phillips listed the pigment at prices of 7s. 3d. and 18s. per lb.,\* which, even allowing for the discrepancies often encountered in the case of other pigments between the rates he mentioned and those found elsewhere, show that it was a great deal more expensive than others generally used in house-painting. It is, therefore, quite unlikely to have been used for this purpose.

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#### ASPHALTUM

Another brown pigment used by artists, asphaltum, was listed by Martin and Nicholson copying uncritically from Dossie.\* References by other authors on house-painting are, however, only to its employment in japan gold sizes and varnishes, and the substance is accordingly described below in the section on materials used for this purpose.

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#### Black pigments

The black pigments in use for house-painting during the period extending from the late seventeenth century to the early nineteenth mostly owed their colour to the presence of carbon, some being practically pure forms of the element, although naturally occurring manganese dioxide was also used. Mineral sources, however, do not seem to have been important in the context of interior work, for which, especially for dark solid shades in oil, lamp black appears to have been employed; whilst animal or wood charcoal blacks were used for the more delicate tints. The latter pigment had a notably bluish cast which made it especially suitable where it was desired to avoid

any tendency to yellowing.

#### LAMP BLACK

Lamp black, as its name implies, is the soot made by burning hydrocarbons such as oil or rosin in a confined space. John Smith described it as 'Soot raised from the roseny and fat parts of Fir-Trees', adding that it came generally from 'the Northern Countrey's, as Sweden and Norway';\* whilst Stalker and Parker and Dossie described its manufacture from oil, the latter saying that the soot was collected and sold without further preparation.\* Smith and Tingry's later editor explained that the raw pigment did not dry well, and that it had to be burnt to improve its performance in this respect;\* whilst Vanherman recommended particularly in this connection that it should be raised to 'a strong red heat' in an iron box or crucible.\* By removing its natural oiliness in this way the pigment would also presumably be worked more easily in water, and suffer less from any tendency to brownish discoloration.

'Candle black'

John Smith, who also described a finer variety which he called candle black, said that lamp black was more generally used than any other black on account of its 'plenty and cheapness', and that it was suitable for most uses.\* Watin indicated, however, that it did not work well in distemper (a medium with which Smith was not concerned);\* and, for use in his 'aromatic' emulsion paint, Vanherman suggested the alternative use of blue black as equally good and less troublesome.\* D'Aviler and Bullet also included noir de fumée in their lists of basic pigments,\* and Pincot too employed it as one of the staples of the house-painter's trade, which, Tingry remarked, provided its principal application.\* As might be expected, therefore, Lewis Berger held fairly substantial stocks of lamp black during the first decade of the nineteenth century, amounting to nearly 20 cwt. in 1802, 43½ cwt. in 1806 and nearly 63½ cwt. in 1810 valued at rates varying from the equivalents of 32s. 8d. to 51s. 4d. per cwt.\* Although a small amount was supplied for painting



a house in Doncaster, in 1802 at a rate equivalent to  
\*840 37s. 4d. per cwt.,\* other retail prices encountered are  
rather higher: Soane, for example, was charged at the  
\*841 equivalent of 112s. per cwt. in 1803;\* and two quantities  
of 1 lb. each were supplied at Tredegar House, Newport,  
Monmouthshire (now Gwent), in 1792 and 1793 at rates  
\*842 equivalent to 168s. and 186s. per cwt. respectively.\*  
These are, unusually, more or less in line with those of  
1s. 7½d. or 1s. 6d. per lb. published by John Phillips  
\*843 during the second decade of the nineteenth century.\*

Lamp black was recommended by Watin, and Tingry for  
\*844 use in making black paint for ironwork;\* and, on account  
of its opacity compared with the relative transparency of  
ivory black, it seems natural that it should have been  
used in this way. Reynolds too specified its employment  
for mixing black paint, here for exterior use, and sug-  
\*845 gested also its use to dull green and stone colour in oil.\*  
He also used it with Spanish brown to mix claret colour  
\*846 and chocolate colour,\* the latter a combination suggested  
also by Butcher and Tingry's later editor, and one which  
\*847 had, no doubt, always been widely exploited.\* On the  
other hand, although John Smith and Nicholson recommended  
its employment with white to mix ash colour, Bulletin its  
use in the same way for couleur de fer, and Reynolds for  
an exterior slate colour, Watin classified such mixtures  
\*848 as producing simply gris ordinaire.\* Thus, despite its  
high staining power, which would in any case have been off-  
set by the lower cost of other black pigments, its employ-  
ment for more subtle tinting purposes in better class  
interiors may well have been less universal since finer,  
more delicate greys could be produced by means of ivory  
and charcoal blacks, or by other means. It was, however,  
used quite extensively in grey undercoats, a practice  
described in Chapter II (q.v.). Also, although Whittock  
employed lamp black for veining in the imitation of verde  
\*849 antico and veined white marble in distemper,\* on account  
of its slight greasiness it was probably less used in an  
aqueous medium. Nevertheless, D'Aviler noted its use in  
\*850 mixing grey distemper,\* and in the Doncaster account men-  
tioned above the pigment appears alongside others which

suggest its employment in this medium was intended, so that it may have been used in this way on occasion.

#### IVORY BLACK AND BONE BLACK

Ivory black is prepared by the calcination of ivory or bone (when it may be known as bone black) in a closed vessel from which air has been excluded. In contrast to other black pigments discussed, it usually contains only about ten or twenty per cent of carbon, the remainder being composed of calcium phosphate; and hence it is more transparent than the others, tending also to have a brownish cast. Tingry gave Cologne or Cassel black as alternative names for pigment genuinely prepared from ivory,\* which seems to have been the material from which most seventeenth-century varieties were made. John Smith remarked that ivory black was expensive and not used in common work, an observation repeated in the early nineteenth century by Whittock (probably quoting Butcher's edition of John Smith);\* but in the mid-eighteenth century Dossie stated it was prepared for common use in large quantities from bones and was sold at a low price. It was also, he observed, frequently sophisticated with charcoal dust, which gave it a bluish cast.\* In addition, Watin mentioned noir de composition, prepared by calcination of the animal residue left after the manufacture of yellow prussiate of potash (potassium ferrocyanide) as part of the process for making Prussian blue, a product also mentioned by Hurst.\*

'Cologne' or  
'Cassel \*851  
black'  
  
\*852  
  
\*853  
'noir de  
composition'  
  
\*854

Common use of the pigment by the mid-eighteenth century is consistent with prices quoted for it. Quantities of 'flory black' totalling 17 lb. are mentioned in an account as having been supplied to Boughton House, Northampton, in 1705 at a rate equivalent to 56s. per cwt.,\* but by the late 1770s and 1780s Berger was offering ivory black for sale at prices ranging from 16s. to 20s. per cwt., and by the first decade of the nineteenth century was valuing his stocks at even lower prices lying between 9s. and 15s. 3d. per cwt.\* By this date, therefore, the price of lamp black was several times that of

\*855  
  
\*856

commercial 'ivory' black, probably more generally prepared, as Dossie suggested, from bone. The price of the genuine article, by comparison, may be seen from a costed formula of 1826 for 'Drop Ivory Black' in the Berger archives in which ivory, itself costing 10s. per cwt. to purchase, was burnt to produce the pigment at a cost of 17s. per cwt. To this 'Deep [Wet Prussian] Blue' was added, making a final cost price of 23s. per cwt., suggesting it would have  
\*857 retailed at around 50s. per cwt.\* In 1810, Berger had, indeed, a stock of just over 3½ cwt. 'Lump Ivory Black' valued  
\*858 at this figure, and it seems likely, therefore, that this was of a similar nature.\* His stocks of the cheaper varieties were, however, considerably more substantial, and exceeded too those he held of lamp black (q.v.), amounting to just over 33 cwt. in 1802, nearly 69½ cwt. in 1806, and  
\*859 over 140 cwt. in 1810.\* Altogether, it seems clear that once available the cheap varieties were used quite extensively for house-painting, in which their main application was for tinting greys, lamp black, as mentioned above, being generally recommended for more solid shades including blacks and browns. Its particular advantage over lamp black lay in its being more easily miscible with water, and thus more suitable for use in distemper. Thus D'Aviler used ivory black in mixing grey distemper, and Nicholson too recommended  
\*860 its use for 'inferior greys' in this medium;\* whilst Watin employed it in the production of greys and for greying whites  
\*861 in general.\*

#### CHARCOAL (BLUE BLACK)

Besides that prepared from animal substances, crushed wood charcoal too was used as a pigment. Particularly fine qualities were prepared for artists from peach stones and other special vegetable matter, and Church indicated that such pigments should be washed to remove soluble alkalis  
\*862 prior to use.\* In the first edition of his book John Smith described willow charcoal as a good black for ordinary purposes, mentioning that, although coarse, it had good drying properties; but in the second edition he remarked that 'being not so easy to be gotten as the Lam[p]-black' it was  
\*863 seldom used.\* On the other hand, noir de charbon was

listed by D'Aviler for use in greys and with yellow  
ochre in couleur d'olive,\* and was described by Watin,  
\*864 who commented that it gave a beautiful grey in distemper.  
He illustrated its use in this medium to eliminate any  
tendency to yellow in whites, and used it with blue in  
both oil and distemper to mix gris argentin and gris de  
\*865 perle.\*

Dossie defined blue black as a wood charcoal pigment,  
adding that the best was said to be that made from vine  
\*866 stalks and tendrils;\* and Watin, who also referred to the  
use of noir de pêches as a water colour, described noir de  
\*867 vigne as the most beautiful of the blacks.\* Tingry too was  
conversant with both these sources of pigment, remarking  
particularly that charcoal produced from vine twigs would  
produce with white lead a silver white otherwise unobtain-  
\*868 able;\* and Vanherman mentioned that vine wood burnt to  
charcoal would confer on white a rich and beautiful satin  
\*869 tint, whilst cautioning that it had to be used sparingly.\*  
Besides these varieties of charcoal, Watin also described  
noir d'Allemagne, which, he indicated, was a powder made  
at Frankfort, Mayence, and Strasbourg from roasted wine  
\*870 lees;\* and Tingry described a similar pigment which was  
identified by his later editor as Frankfort black.\* In  
'Frankfort \*871 black'  
1802 Lewis Berger had a stock of just over ¼ cwt. of  
'For<sup>n</sup> Francfort Black' valued at £7 per cwt., but had in  
addition a further 4½ cwt. 'Francfort Black' valued at the  
much lower rate of 50s. per cwt. The same price was applied  
to his stock of 2¾ cwt. in 1806, whilst just over 1½ cwt.  
\*872 were valued at 60s. per cwt. in 1810.\* From formulae of  
1829 and 1831 it seems almost certain that these lower  
priced grades were in fact a commercially produced substi-  
tute based on charcoal with the addition of Prussian blue  
and ivory and lamp blacks which was designed to imitate the  
bluish cast of the much more expensive genuine product.  
In 1831 it was made from:

210 lb. charcoal  
84 lb. 'Burnt Ivory'  
15 lb. fine lamp black  
10 lb. deep wet blue  
10 lb. common lamp black  
7 lb. soda (sodium carbonate).\*

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It may well, therefore, have been such a preparation that Vanherman had in mind when suggesting that Frankfort black could be used to colour varnish.\*

\*874

Even so, the imitation Frankfort black, being comparable in price with lamp black, was considerably more expensive than the ordinary charcoal 'blue black', of which, as might be expected, Berger had fairly extensive stocks. These were valued at prices more or less comparable with his cheaper 'ivory' blacks, and stood at 40½ cwt. in 1802, 12 cwt. in 1806, and just over 11 cwt. in 1810, the first two being priced at a rate of 12s. per cwt. and the last at 15s.\*

\*875

The same relationship with the price of ivory black may be seen in the rates at which Berger was offering blue black for sale during the late 1770s and 1780s which varied between 16s. and 24s. per cwt.;

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whilst in the late seventeenth century, Stalker and Parker had quoted a common price for the pigments ground into oil.\*

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In 1802, besides the varieties already mentioned, Berger had also a small stock of 1 cwt. blue black ground in oil which was valued at 38s. per cwt.;

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and it is thus clear the pigment was used both in oil and water, although for house-painting was, no doubt, more often prepared from more common varieties of charcoal, such as the beechwood mentioned by Tingry,\*

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than the special materials mentioned above. In general, the uses for blue black described by early nineteenth-century authors are similar to those suggested by D'Aviler and Watin, which have already been mentioned. Vanherman, for example, used blue black in a mixture for green paint;

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whilst Nicholson described the pigment as useful in mixing inferior greys in distemper, and indicated that it could be added to white oil finishing coats, no doubt on the basis that it would reduce any tendency to yellowing.\*

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It is tempting to suggest that the two ounces supplied to the plasterer at Tredegar House in 1793 were destined for the same purpose in distemper;\*

\*882

and, apart from the fact that, as Vanherman remarked, it was less trouble to use than lamp black (which, although more expensive, has a higher staining power), it seems likely that its bluish cast was one of the main criteria for its choice in preference to either this pigment or ivory black.\*

\*883

Charcoal has, moreover, been identified in the blue paint of an early colour scheme in the Library at Kenwood House, Middlesex, used again, no doubt, with the intention of dulling the blue without any tendency to yellowing and production of a greenish tinge;\* and, probably with the same desirable property in mind, Nicholson suggested the use of blue black for veining in the imitation of veined white marble, here mixed with a little Prussian blue.\*

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No mention seems to be made, however, of its use in mixing deep blacks, and it is most likely that this role was better performed by lamp black.

#### MINERAL BLACK (COAL AND BLACK CHALK)

Vanherman employed 'mineral black' as a tinting pigment in his 'Impenetrable or Anti-Corrosive Paint' for external application, giving its cost as 14s. per cwt., but did not provide any information as to its nature.\*

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Heaton indicates that the name can be applied to various carbonaceous earths such as black chalk, extensive deposits of which occur in Spain and Italy, or to low grade coal which often contains as little as forty per cent of carbon mixed with silicate of alumina together with traces of lime, magnesia, iron, and sulphur compounds.\*

\*887

In his Natural History of Staffordshire, published in 1686, Plot referred to a black chalk which he had been told was found in the strata in Langley Close, near Stansop;\* and 'Italian black chalk' was priced by Phillips at 2s. 2d. per lb. in 1812 (a price amended to 2s. in 1821).\*

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It seems likely, however, that it was a substance of Heaton's second category that Vanherman had in mind, since Field's early nineteenth-century notebook contains a sample of 'mineral black' from the Union Mine, Bideford, Devonshire;\* and at the beginning of the present century G.A.T. Middleton in his work on building materials defined 'Bideford black' as a silicious mineral substance.\*

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Although in the first edition of his book John Smith had included 'Sea-Coal' amongst the black pigments, indicating that it dried well but had a coarse texture, he omitted any mention of it from the second edition;\* and it seems likely that the pigment was obsolete for much of the period under consideration until

\*892

revived during the late eighteenth or early nineteenth century search for new sources of cheap pigment for exterior use.

#### MANGANESE DIOXIDE (BLACK WADD)

Tingry's editor referred to the employment of black manganese oxide as a pigment, noting that the ore was known as black wad or wadd in Derbyshire, but occurred also in Devon and Somerset.\* Wadd was described by Ure as a mixture of manganese with an equal weight of iron oxide,\* and Heaton observed that pigment prepared from the crude ore had a greenish cast.\* Vanherman and Tingry's editor suggested its recent use for the protection of exterior ironwork, 'tar oil' being employed as the medium since the pigment was apt to cause the spontaneous ignition of linseed oil.\* Its colour was, Vanherman added, dull and unpleasant; and the pigment seems most unlikely to have been used for interior work.

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DRIERS, DRYING  
OILS, AND THEIR  
PREPARATION  
FOR USE

Certain oils, chiefly of vegetable origin, have the property of hardening by polymerisation of 'drying' when exposed to the atmosphere. Others, for example, olive oil, do not dry but remain fluid; and an intermediate group, which contains rapeseed oil (used for lamps during the eighteenth century), dries poorly. Of the so called drying oils only three, linseed oil, walnut oil, and poppy oil, seem to have been in normal use for house-painting, the first of these being by far the most commonly employed.

The mechanism by which oils polymerise is complex, but in essence the drying power of an oil depends on the proportion of unsaturated fatty acid present. The molecules of unsaturated organic compounds, such as the linolic and linolenic acids in linseed and other drying oils, have the ability to link up and regroup to form chains, or polymers, in this case linoxyn; and this mechanism involving the absorption of oxygen from the atmosphere produces the tough, flexible film associated with paints.

Driers

The speed of drying can be enhanced by various means, in particular by the addition of certain metal salts known as siccatives or driers, the most important substances used during the period here considered being red lead, litharge, sugar of lead, white copperas, and umber. Their accelerating effect is not proportional to the quantity in which they are used, and beyond about two per cent they are injurious to the paint since they speed up further changes in the dried film, and thus shorten its life.\*  
Driers may be used in two ways, either previously dissolved in the oil, or in paste form as a direct addition to the paint. Formulae for the first of these applications are discussed below in connection with the drying oils themselves, but first the substances used for both methods will be described and their general characteristics discussed. The choice between drying method and between different driers for immediate addition to paint will be summarised in the next chapter in the section dealing with the preparation and application of oil paint.

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## RED LEAD

Red lead has been discussed above in the section dealing with red pigments. It was also used extensively as a drier throughout the period under consideration, especially in priming coats and in making boiled oils. Although at 28s. or 38s. per cwt. it appears from Lewis Berger's early nineteenth-century stock-lists\* to have been marginally cheaper than litharge (q.v.), its colour prevented its direct use as a drier in all finishes but the very darkest; and the boiled oil produced using it tended to be deep in colour from the length of time it had to be heated to achieve adequate solution.

## LITHARGE

Litharge has been mentioned above in discussion of the yellow pigment massicot, and attention there drawn to the apparently invariable use of the former name for lead monoxide when used as a drier during the period here being considered. The substance was made as a by-product of silver refining, the process being described by the seventeenth-century author John Ray: pigs of impure silver obtained after smelting the ore, which contained a great deal of lead, were re-melted in a reverberatory furnace; when at the right temperature, air was blown in and the lead monoxide which formed on the surface was blown off, the silver gradually solidifying at the bottom.\*

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'Litharge of lead'  
'Litharge of silver'  
'Litharge of gold'  
'Grey oxide'  
'Ashes of lead'

Several authors on house-painting refer to different varieties of litharge known as litharge of lead, litharge of silver, and litharge of gold, these terms having been used in classical times by Pliny in connection with his description of various naturally occurring substances found in silver mines.\* Tingry in particular discussed litharge at some length, and described how on first heating a grey oxide is formed.\* This, a mixture of lead monoxide and metallic lead, was called ashes of lead by Martin, but is still known commercially as grey oxide.\* Tingry continued by describing how on further heating in a reverberatory furnace during the process of silver refining or

'cupelling', litharge was formed on the surface. The colour, he observed, varied, two varieties being produced. The red, called litharge of gold, had, he suggested, suffered least from the fire, whilst that called litharge of silver was more vitrified and of a greenish-yellow colour. In addition, Watin noted that the first was cooled in a mass, the second spread out.\* The distinction owes its explanation to the fact that lead monoxide exists in two different crystalline forms, tetragonal and orthorhombic. The latter, corresponding with litharge of silver, is canary yellow in colour and for that reason often known as canary litharge. If pure it is only stable above 489°C., but can also exist at normal temperatures when small impurities are present.\* The tetragonal form on the other hand is stable below this temperature, but always exists at atmospheric temperatures in association with orthorhombic litharge; and the mixture, orange red in colour, corresponds with litharge of gold.

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'Canary litharge'

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John Smith used 'Litharge of Lead' in the preparation of boiled oil, but the suggestion made by Nicholson that 'ashes of lead' or 'litharge of lead' could be used simply mixed with linseed oil as a drier seems unreliable since it would discolour the paint.\* Tingry, indeed, stated that this variety of litharge was not used in painting,\* and it is most likely therefore that it was the pure monoxides which found employment. Thus, Stalker and Parker, and Tingry recommended litharge of gold, the latter indicating that it was preferable to litharge of silver.\* His later English editor remarked, however, that although the two varieties had formerly been recognised, the distinction was by this time unknown.\* Other English authors do not seem to express any preference, generally using the term litharge without qualification, and Lewis Berger simply listed 'Litharge' in his early nineteenth-century stock-lists, mentioning 'Prepar'd', 'Fine', and 'Com<sup>n</sup>' varieties. Between 1802 and 1810 he valued his stocks of these at rates between 27s. and 54s. per cwt., these being in each year marginally above the prices for red lead, his total stocks rising from just over 12 cwt. in 1802 to just over 20½ cwt. in 1806, and nearly 96 cwt. in 1810.\* Retail prices

encountered seem consistent with Berger's rates, 2 lb., for example, being supplied at Dyrham Park in 1779 at 5d. per lb., and Soane being charged at 5d. and 6d. per lb. for small quantities at Pitzhanger Manor, Middlesex, in 1803.\*

\*910

Litharge was used, as will become apparent, to a large extent in the production of boiled oils throughout the period under consideration, and is mentioned by most writers on the subject. The earliest reference to its use as an added drier which has been noted, however, is that by Watin,\* whilst a 'Pot of... Litharge ground' was supplied at Dyrham in 1781 illustrating its use in this way at that date;\* but there is no reason to suppose that this was not common well before then. As with red lead, its colour tended to rule out its universal use in finishing coats, especially those of light or delicate tint, and hence Tingry's later editor recommended it for drying purposes specifically in dark colours.\*

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#### SUGAR OF LEAD

Lead acetate, or sugar of lead, a white crystalline substance, is especially suitable for use as an additive drier although also used in the preparation of boiled oils. Earlier writers do not seem to mention it, but Dossie described its preparation by the solution of lead in vinegar, and its use in finer work.\* In a letter of 1788 Lewis Berger quoted for its supply at 168s. per cwt., whilst in 1802, 1806, and 1810 he valued his stocks, which never amounted to more than 10 cwt. in any of these years, at rates equivalent to 219s. 4d., 168s., and 140s. per cwt. respectively, the average being roughly the equivalent of 1s. 6d. per lb.\* In 1803 Soane was charged at a rate of 3s. per lb. for a total of six pounds, the same rate as that given by Phillips in 1812 and 1821.\* Lead acetate can therefore be seen clearly as a considerably more expensive substance than almost all others used as driers, in particular red lead, litharge, or white copperas. Pincot and Nicholson both referred to it under the alchemical name saccharum saturnae, describing it respectively as used for

'Saccharum  
saturnae'

\*917 flatting coats and for fine whites;\* and it seems clear that its principal employment was as an added drier in high quality work at least from the mid-eighteenth century.

#### WHITE COPPERAS

'White vitriol'

\*918

Dossie described white vitriol (zinc sulphate) as a mineral obtained from Hungary;\* and Tingry's later editor gave an account of the process used for its preparation in Germany by roasting blende, a zinc ore (zinc sulphide), exposing the residue to the air, and extracting the sulphate by solution in water. He added that he believed it was also being prepared from zinc ore in the Mendips, and advised that the pure form of the salt made by dissolving zinc in sulphuric acid was unnecessary for painting.\*

\*919

Lewis Berger was offering white copperas for sale in 1788 at 75s. per cwt. and valued his stocks, which rose from just over 6 cwt. in 1802 to nearly 22½ cwt. in 1806 and just over 75 cwt. in 1810, at rates between 44s. and 85s. per cwt., prices more or less comparable with the cheaper varieties of litharge.\*

\*920

Dossie, Tingry, and Whittock gave formulae for boiled oils (reviewed below) in which white vitriol features amongst other ingredients, but it is fairly clear that its main application was as an added drier. It was probably being used in this way during the late seventeenth century, but the term 'copperas' was often used without qualification and it is not possible to be absolutely certain that zinc sulphate was implied, since in the late nineteenth century Hurst indicated that green copperas (ferrous sulphate, also known as green vitriol) rendered anhydrous was frequently used as a drier.\* Blue copperas (copper sulphate, also known as blue or Roman vitriol), however, would not have been used for this purpose, and, since Watin observed that only white copperas was commonly used as a drier,\* it seems most likely that the unqualified term was applied to zinc sulphate. John Smith, for example, observed,

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'Some Painters to make their Colours dry, take Copperas, and having beaten it to powder, burn it in a Fire-

shovel;... that is, they set it on the fire,... 'till all the moisture be exhaled, and the matter remain a dry white Calx; some of this powder of burnt Copperas, being added to the Colours in grinding, shall make the Colour dry very well.'\*

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The practice of dehydrating the salt was also advocated by Watin.\* Butcher seems to have used white copperas extensively, recommending its employment in black, and that of 'copperas' in white, grey, stone colour, green, and other colours;\* but although Dossie stated that white vitriol was used in fine work, other authors regarded it as less satisfactory, and Tingry's later editor, for example, remarked that it was 'not calculated for white and other delicate colours, it being apt to deteriorate the colour'.\* Nevertheless, it emerges as a very generally used substance, and was the only drier which Lewis Berger stocked in paste form during the early nineteenth century, although his stocks were small. These amounted to 14 lb. in 1802, but stood at nearly 1½ cwt. in 1810, and were valued at 9d. or 10d. per lb.\* It was also, as Vanherman and Tingry's later editor observed, especially suitable for use with zinc white, for which other driers were less satisfactory.\*

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#### UMBER

The brown pigment umber, described above, contains manganese which acts as an efficient drier. Its dark colour more or less precluded its use other than in the preparation of boiled oils; and formulae which include it for this purpose, always in association with other driers, were given by Dossie, Watin, Martin, and Nicholson. These are described below.

#### GREEN COPPERAS

Although the late nineteenth-century author George Hurst indicated that green copperas (ferrous sulphate) rendered anhydrous was frequently used as a drier,\* no explicit reference to its employment in house-painting before this date has been encountered. Whilst Lewis Berger had

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extensive stocks of green copperas during the first decade of the nineteenth century, amounting in each of the years 1802, 1806, and 1810 to several tons valued at rates between 7s. and 11s. 6d. per cwt., it must be remembered that the substance was used by him for other purposes, most notably the manufacture of Prussian blue.\* There is no reason to suppose, therefore, that it was generally used as a drier during the period being considered; and unqualified references to 'copperas' probably imply the use of white copperas (q.v.).

#### IRON OXIDE

Dossie mentioned the use of colcothar in the preparation of boiled oils, and had earlier defined the substance as a residue left in the necks of the retorts used for the distillation of sulphuric acid from ferrous sulphate.\* This was no doubt an impure form of ferric oxide, and may in Dossie's mind have possessed analogous properties to the red ochres which had always been used extensively in primings on account, it was thought, of their gentle drying properties compared with those of other substances, allowing the oil to penetrate more deeply into the pores of the ground. However, he did not mention it again in any of the detailed formulae which followed; and although it was mentioned later by Whittock in his list of driers,\* this was undoubtedly copied from Dossie, and the substance can probably be ignored.

#### VERDIGRIS

The pigment verdigris, discussed in detail above, also possesses excellent drying properties, and was recommended in later editions of John Smith's book as a drier for lamp black.\* No doubt in black paint its strong colour would have been unimportant.

#### WHITE LEAD

The pigment white lead, discussed at some length above, was also used to a limited extent for its drying qualities,

quite apart from its utility as a base pigment for oil paint. As described below, Watin and Whittock, for example, mentioned its employment in the preparation of sun-bleached oils, and Martin included it with other ingredients in a formula for the production of boiled oil. Watin and Tingry also used roasted white lead, presumably thus containing a proportion of lead monoxide, in similar formulae;\* but in general it does not seem to have been a very important substance for such purposes.

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#### TALC

Talc, whose nature has been discussed briefly in the section above dealing with white pigments, was used in combination with other substances by Watin in formulae for sun-bleached and boiled oils.\* Its drying properties in this connection are, however, unlikely to have been significant, and it was probably intended as a vehicle to aid precipitation of the mucilage.

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#### Drying oils

As the most commonly used drying oil, linseed oil is described first; and, since many methods for the treatment of drying oils are common to all those considered below, the principles which lie behind them are discussed in detail in connection with it. Variations in the case of other oils, however, are separately discussed under the appropriate headings.

#### LINSEED OIL

#### Oil milling

Linseed oil is expressed by pressure from the seed of the flax plant, Linum usitatissimum, and was known in Roman times. In his recent History of Seed Crushing in Great Britain (1960) H.W. Brace gives a certain amount of information concerning the seventeenth-century industry, prices of linseed oil, and rates of duty applied. He includes a description dated 1696 of a windmill for crushing rapeseed in the Lincolnshire area, in which the seed was broken 'between two great black Marble Stones of near a Tun weight, one standing Perpendicularly on the other'. Although earlier confined to the East Coast counties of England, he

\*Fig. 3

indicates that during the eighteenth century the industry spread to other parts of the country, and seed was increasingly imported. He draws particular attention to a French description of a wind mill dated 1765 as the earliest to be accompanied by drawings. This indicates that the seed was first bruised in mortars and reduced to a paste which was then cold-pressed by the use of wedges operated by stampers. The residue was heated in kettles with a little water to prevent it burning before being re-pressed by the same method between heated metal plates.\* The mid-nineteenth-century author Andrew Ure illustrated a 'Dutch mill' press box of this type,\* but indicated that mills of this description, formerly driven by water or horse power (the first of which was mentioned by Dossie),\* were obsolete. A dozen blows of the stamper, in this case weighing 500 to 600 pounds and falling through a height of 16 to 21 inches, were needed to drive in the wedge (o), after which the press was allowed to stand for a few minutes to permit the oil to flow out from the horse-hair bags in which the seed was confined. The pressure was then released by knocking in the key (m). He also mentioned the import of seed from Archangel, Odessa, and eastern India. By the time he was writing, however, use of steam-powered hydraulic presses (which he also described) seems to have been well established.\*

The use of heat in extraction of the oil enables a greater yield (according to Church, 27% on average as against 20% by cold pressure)\* to be obtained; but oil drawn in this way is darker in colour than cold-drawn oil, more viscous, and of a poorer quality. The practice was mentioned by the late twelfth-century writer Theophilus in his treatise De Diversis Artibus,\* and, although not referred to by Dossie, seems likely to have been ordinary commercial practice throughout the period under consideration, as implied by the 1765 description quoted above. Certainly by the early nineteenth century heating appears to have been common, and the continental authors Chaptal and Tingry both referred to the practice.\* The latter indeed described linseed oil as requiring the greatest degree of heat in its extraction, and for that reason



always being coloured and thick, thus being used for coarse work; and by 1830 his later editor observed that oil extracted without heat was reserved for medical purposes.\*

\*942

Refinement and bleaching

Raw oil obtained either way is dull or cloudy in appearance, and is not used today without further refinement. It is also desirable to increase the speed at which raw oil will dry, and techniques were devised at an early date to effect both these improvements, and also to bleach the colour. Dossie described the processes in use for such 'fattening', listing long keeping, the addition of certain pigments, and exposure to the sun and air as the main methods employed.\* The latter was particularly used to prepare the thick 'fat oil' which formed the basis of gold-sizes, and is discussed in more detail in connection with gilding in Chapter II, but the bleaching action of sunlight was sometimes used also to reduce the yellow colour of oils used for other purposes. The Dutch process as practised at the beginning of the nineteenth century was described by Chaptal and Martin, both of whom indicated that one-third part of fine white sand, one-third part of water, and one-third part of linseed oil were placed in a well-glazed earthenware pot, which was covered by a sheet of glass and exposed to the sun. The mixture was stirred daily, and exposure continued until the oil was white. It was then allowed to stand for two days to settle, and the refined oil decanted.\* At the end of the nineteenth century, Church mentioned the same practice, indicating that a temperature of 80° or even 100° F. should be maintained.\*

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Dossie described such methods as making the refined oil reluctant to dry,\* and in recommending a similar process, John Smith had included the use of a drier:

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'Put the afore-mentioned quantity of Linseed-Oyl [1 quart] to the like quantity of Litharge [2 ounces]; put the Mixture into a Glass, and set it in the hot Sun; for a Month, in the Summer time, stirring the Litharge and the Oyl well together, twice a Week,

during the whole time, and you shall not fail in that time to obtain, [not only] an Oyl, very white and clear, (for the Sun takes away all Colour, either from Linseed or Wallnut-Oyl) but also, it will become in that time very fat and thick, and attain to a very drying quality.\*

\*947

Similar processes were described by Watin, Martin, Whittock, and Vanherman,\* the first and third of these using white lead as the drier, and the others litharge; but it is difficult to judge the extent to which such methods were in commercial use. At the end of the eighteenth century, however, an advertisement was placed in a Hull newspaper by an oil-mill superintendant 'possessed of the Dutch Process of Refining Rape and Linseed Oil', suggesting such knowledge was desirable;\* and in 1825 Nicholson suggested the use of bleached linseed oil in white finishing coats.\* This seems, however, to have been exceptional, and Dossie remarked of linseed oil that it was generally used without any preparation than mixing it with the appropriate drier. It was, he noted however, improved by long keeping;\* and Vanherman remarked that if kept for two years it would lose its colour.\* Martin and Nicholson also mentioned filtration, followed by standing two or three years to precipitate and clarify, the latter describing the Dutch process as giving 'the effect of age'.\* In general, therefore, the majority of linseed oil used for house-painting was probably unbleached, and untreated by the Dutch process.

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#### Acid refining

Much of the linseed oil used commercially today has been refined by treatment with sulphuric acid. This process was described in some detail by Vanherman and Tingry's later editor in connection with linseed oil for house-painting, the latter describing Matthias Wilks's patent specification of 1822 whilst remarking that it had been practised in his presence about 1800.\* Chaptal, however, had only mentioned the process in connection with lamp-oil,\* and an English patent had been taken out by Daniel Bridges for a similar purpose as early as 1748, in which it was described as a 'New method to refine, purify, and meliorate... rape [seed] oyl'.\* Thus, since Dossie did not

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mention this method at all in connection with linseed oil, and Tingry's editor did not refer to it in such a way as to suggest it was in common commercial use, it seems unlikely that the process was important during the period presently being considered.

#### Boiled oil

The quickest way to produce a fast-drying oil is to heat raw oil with one of the metal salts discussed above which act as driers. The product is generally known as boiled oil, but has also been called drying oil or fat oil. However, although effective and efficient, the method has a serious disadvantage for interior paintwork in that the oil produced is dark in colour, and yellows whites and other delicate tints. Its use was generally advocated, therefore, only in connection with dark colours for exterior use, suggestions to this effect being made by Pincot (with particular reference to the colder months of the year), and Butcher (for black), whilst Crease remarked that it was most properly used for external purposes.\*

\*957

In the first edition of his book, John Smith described red lead as the only pigment used in the production of drying and fat oils;\* but in his 1687 recipe used litharge for the purpose, only adding red lead as an alternative in later editions, in which he directed:

\*958

'To a Quart of Linseed Oyl, add two Ounces of the litharge of Lead, which may be had at every Druggist's Shop, (some use Red Lead) powder it finely before you put it to the Oyl; when you have mix'd it, set it on the Fire in an Earthen Pan, and boyl it for near an Hour, more or less, 'till the Oyl be grown fat, or almost of the thickness of Treacle that comes from Sugar; then set it on Fire with a lighted Paper, and stir it well while burning, then put out the Flame, after it hath burnt a Minute or two, and let the Matter stand till it be thoroughly cold, and the Litharge well settled to the Bottom; then pour off the clear Oyl, and keep it for Use in a Bladder close tyed up, or for Want of that, in a Glass Bottle.\*'

\*959

The practice of setting fire to the oil on completion of the boiling seems both dangerous and unusual, and does not appear in any other formulae noted. Stalker and Parker too suggested the alternative use of red lead or litharge (of gold), the latter in a formula for a better grade of boiled oil;\* whilst in the early nineteenth century Reynolds advocated the use of red lead.\*

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Boiled oil was, however, commonly purchased during the eighteenth century ready prepared, and Dossie gave a typical commercial formula in which 1½ pounds of red lead were boiled with a gallon of linseed oil. A more complex recipe 'for coarser work' employed 1 pound of litharge of gold or silver, ½ pound of white vitriol, ½ pound of sugar of lead, and ½ pound of umber boiled with one gallon of linseed oil;\* and similar formulae requiring mixtures of the several driers already mentioned in this connection were given by Tingry, Nicholson, and Whittock.\* Tingry also recommended the addition of garlic or a small onion, but this seems to have been without much appeal to the English palate. Instructions as to the length of time for which the oil should be boiled range from 15 minutes to 3 hours, but Dossie generally advised boiling only so long as the discolouration of the oil would permit, whilst Tingry recommended boiling until a skin formed;\* and Nicholson observed:

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'The method of ascertaining whether the mixture is sufficiently heated is to put a quill in it, which will in that case be immediately consumed.'\*

\*965

A further feature of Dossie's recipes is the addition of gum arabic and sandarac resin, an additional aspect of oil preparation discussed below in Chapter II in connection with gloss paint finishes. Nicholson, probably transcribing Martin,\* included plaster in a formula for boiled oil which seems to be based on that containing talc suggested by Watin.\* In it he called for 1 pound of linseed oil to be boiled with ½ ounce each of litharge, white lead, umber and plaster, and directed that the scum which formed was to be skimmed off from time to time, the process being stopped

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when the oil began to rarefy and become red. The scum was, he indicated, called smudge and was used for external applications,\* a suggestion he later repeated, recommending that both the scum and dregs (known today as foots) provided a good drier for dark colours, and mentioning that this was often used in exterior work.\*

#### Prices

Linseed oil was undoubtedly the most widely used medium for oil painting throughout the period being discussed despite its yellowish colour. In general its price seems to have risen steadily, and reached its maximum during the opening years of the nineteenth century. Stalker and Parker indicated that it cost 8d. per quart in 1688,\* but by 1734 in his Palladio Londinensis Salmon suggested a figure of 10d., amended in another work by him, the London and Country Builder's Vade Mecum (1745) to a rate of between 10d. and 1s.\* A price equivalent to 1s. 4d., which seems to be on the high side, appears in the accounts for painting at Egremont House, London in 1761 and 1763, but in 1781 linseed oil was supplied to Tredegar House, Monmouthshire (now Gwent), at a rate of 1s. 2d. per quart;\* and in 1803 Soane was charged at between 1s. 2d. and 1s. 6d.\* The London surveyor John Phillips recorded the progress of its price as follows: between 1760 and 1790 it was sold at 1s. per quart; between 1790 and 1803 at 1s. 6d.; and in 1812 he quoted 2s. 9d., whilst by 1821 the price had fallen back slightly to 2s. 6d.\* As usual with the rates he quoted, however, these seem to be slightly exaggerated, and although Pincot referred to its price as having reached 2s. at one stage,\* in 1806 Lewis Berger still valued his stocks, which amounted to nearly 1,300 gallons, at a rate equivalent to 10½d. or 11d.\* In 1825 the London colourman John Lingard was selling it at a price equivalent to 11d. per quart.\*

Naturally, boiled oil was slightly more expensive, Salmon quoting 1s. per quart for 'Best drying Oil' in 1734, and that supplied at Egremont House in 1763 costing 1s. 6d. or 1s. 8d.\* The latter was also the price charged for 'prep<sup>d</sup> oil' at Tredegar House in 1793.\* In 1802 Berger valued his stocks of 20 gallons at a rate equivalent to 1s. 1½d., although this fell to 1s. in 1806 when his stock

was 58 gallons, but rose steeply to 1s. 9½d. in 1810  
 \*980 when he had 120 gallons.\* Phillips again recorded his  
 maximum price in 1812, quoting 4s. 6d. for 'Best drying  
 \*981 oil',\* but in 1810 and 1813 Taylor suggested only 2s.  
 \*982 6d.;\* whilst in 1825 Lingard gave a much lower figure,  
 \*983 the equivalent of 1s. 0½d.\*

Other special  
 oil preparations

\*984 In the earlier editions of his book, John Smith  
 suggested that annatto could be steeped in oil to enhance  
 its properties as a medium for vermilion, red lead, orpi-  
 ment, or massicot; but this advice was omitted from 1723.\*  
 In the 1740s, Alexander Emerton provided a special 'Green-  
 Oil' for use with his green paint. It may have contained  
 dissolved verdigris and has accordingly been discussed in  
 connection with that pigment above; whilst Vanherman's  
 linseed oil emulsion, or 'Incorporated Oil', is described  
 below in the section of Chapter II dealing with water-  
 based paints.

#### WALNUT OIL

Walnut oil, expressed from the nut kernels of the tree,  
Juglans regia, has drying properties similar to those of  
 linseed oil, but possesses the great advantage of being  
 paler in colour. It was prepared for a variety of pur-  
 poses other than painting, and Houghton mentioned its  
 employment for polishing walking sticks and as a frying-  
 oil. He described a bushel of nuts as yielding 15 pounds  
 of peeled and clear kernels, from which 7½ pounds of oil  
 could be obtained, observing, 'the sooner 'tis drawn, is  
 more in quantity, though the dryer the nut, the better in  
 \*985 quality'. The lees were, he remarked, used to fatten hogs.\*  
 Ageing of the nuts was also mentioned by Hurst, who indi-  
 cated that they were collected and placed in heaps for about  
 three months until they had begun to decompose before being  
 \*986 pressed.\* Dossie described the oil as being pressed from  
 the kernels (which he emphasised should have been peeled)  
 by means of a screw press, and noted that it was used with-  
 \*987 out any preparation other than keeping.\* In the early  
 nineteenth century, however, Tingry observed that the com-  
 mon kind which was applied to painting was extracted with

the assistance of a small degree of heat, and also provided a number of recipes for boiled walnut oils, including a method which was, he said, used by English artists. In this, 2 pounds of nut oil were boiled with 3 pounds of water and 2 ounces of white vitriol until only a little water remained. The oil was then separated from the water by means of a funnel, and allowed to stand for use. Another formula he gave, simply called for a pound of oil to be boiled with 3 ounces of litharge.\*

\*988

After describing the methods for boiling and sun-bleaching linseed oil which have been quoted above, John Smith observed:

'By the same methods may Nut-Oyl be made to dry as well as that of Linseed, it being preferred before that of Linseed, for all White Painting that is not exposed to the open Air, for 'tis observed, that in all close places, Linseed Oyl is apt to make White-Lead turn Yellow.'\*

\*989

That walnut oil was indeed in fairly common use for house-painting in the mid-seventeenth century is evident from Sir Balthazar Gerbier's defence of the wages paid to carpenters. They were, he remarked in his Counsel and Advise to all Builders (1663),

'as deserving to be well payd as the Painters, who do but spend the sweat of Wall-nuts (to wit oyle) the Carpenters that of their browes.'\*

\*990

His contemporary Pratt also adverted to walnut oil, specifically mentioning its use in preventing the yellowing of paint;\* and references to its employment in house-painting may be found in late seventeenth and early eighteenth-century painting accounts, such as those for Kensington Palace of the 1690s and Montagu House, London, of the 1700s, both of which contain items for white paint in nut oil.\* It was, however, dearer in price than linseed oil, and although Rondelet listed huile de noix at the same price of huile grasse (boiled oil),\* it seems always to have been a much

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more expensive commodity in England. Stalker and  
Parker listed it at 1s. 4d. or 1s. 6d. per quart, twice  
\*994 the price of linseed oil;\* and Lewis Berger's small stock  
in 1806 of merely six gallons was valued at the equivalent  
of 1s. 9d. per quart, whilst in 1810 he listed only one  
\*995 gallon, this time at the equivalent of 3s. 6d.\* For this  
reason walnut oil was always regarded very much as a  
luxury. The author of the Builders Price-Book and Butcher  
mentioned it in connection with superior flatted white  
\*996 finishes,\* and Nicholson remarked that walnut oil was  
sometimes used in this way, but, on account of its high  
\*997 price, not often.\* In 1830 Tingry's editor stated that  
it was not greatly used in England, although Whittock on  
the other hand had described the oil as much used in orna-  
\*998 mental painting.\* It may be concluded, therefore, that  
whilst walnut oil was fairly widely used to obtain a good  
white on large areas of house-paint during the earlier  
part of the period under consideration, this practice had  
declined during the eighteenth century (probably following  
the introduction of 'flatting' discussed in Chapter II).  
It probably continued in use, however, for the very best  
ornamental or decorative work.

#### POPPY OIL

The drying properties of the whitest of the vegetable  
oils considered here, poppy oil, were discussed during the  
\*999 first half of the seventeenth century.\* It has recently  
\*1000 been identified in a painting of 1485-90,\* and was des-  
cribed by Dossie as pressed from ripe poppy seed and as  
\*1001 having similar properties to nut oil, but drying better.\*  
The more modern authorities Church and Heaton, however,  
\*1002 contradict this, describing it as drying rather slowly.\*  
Ure, Church, and Hurst mention the species Papaver somni-  
ferum as providing the seed, whilst Watin indicated that  
\*1003 the seeds of the pavot noir were employed;\* but Tingry  
\*1004 referred to those of the white poppy.\*

Use of poppy oil by house-painters is mentioned in  
\*1005 William Cogan's patent of 1742,\* and in 1745 it was adver-  
\*1006 tised for sale by the Ripon varnish maker, Williamson.\*



In the early nineteenth century, Tingry provided a special recipe to improve its drying qualities which called for 2 pounds of poppy oil to be boiled with 3 pounds of pure water and 1 ounce of white vitriol until one-half or two-thirds of the water had evaporated. He mentioned its particular employment in white paint and illustrated its use, notably in delicate greys.\* The only price list noted to include poppy oil is that of the Continental author Rondelet, who gave its price as lfr.20 per pound against good quality linseed oil at lfr.00.\* In England on the other hand it was described by Nicholson as being 'rather expensive',\* and Whittock remarked that nut oil would answer for decorative painting.\* Since no other mention of poppy oil in connection with house-painting has been encountered in English works, however, there seems little doubt that the oil was of limited importance in this context.

#### HEMPSEED OIL

Vanherman mentioned hempseed oil in the context of other drying oils, but did not suggest that it was in use for house-painting.\* Hurst indicated that it was expressed from the seed of the plant Cannabis sativa, being greenish in colour when fresh, but that it was rarely used on account of its price although often present as an impurity in linseed oil since the Russian growers often mixed it with the linseed.\* No evidence for its deliberate use during the period being considered has been encountered, although as mentioned in the section on the pigment verdigris above it is possible that the special 'Green-Oil' applied by Alexander Emerton during the 1740s may have been hempseed oil rather than a copper resinate in linseed oil.

#### BEECH NUT OIL

Vanherman also mentioned beech nut oil in the context of drying oils;\* but it seems most unlikely that it would have enjoyed any use for house-painting, and Ure included it in his category of non-drying oils. It was, he indicated, expressed from the nuts of the beech tree, Fagus sylvatica,

and used for cooking purposes in France and as a lamp  
\*1014 oil.\*

#### FISH OILS

Thomas Martin referred to a 'method of rendering  
fish-oil applicable to painting' lately laid by Vanherman  
before the Society of Arts, commenting that the product  
\*1015 appeared to be good for exterior use but dried slowly.\*  
For cheap paints he had suggested it could be used with  
finely sifted road dirt and other ingredients, a proposal  
which attracted caustic comment from Pincot, who adverted  
to 'Various Quackerys... of cheap colours,... Fish Oil  
and Road Sand,... of so rough a nature as to encourage wet  
\*1016 and Vermin'.\* Although later, 'menhaden oil' from the  
species Alosa menhaden (described by Hurst as drying fairly  
\*1017 well)\* seems to have enjoyed a certain degree of use,  
especially in America; by 1828 Vanherman appears to have  
relinquished the idea of using fish oils in paint. He did  
not mention it in connection with his 'Impenetrable or  
Anti-corrosive Paint' for exterior application, and con-  
fined his comments on fish oils to their refinement for  
\*1018 burning.\*

TURPENTINES AND  
THEIR DERIVATIVES

The crude oleo-resins or turpentines which exude from various species belonging to the Pinaceae family of coniferous trees were used in the manufacture of varnish, but may also be separated by distillation into the liquid hydrocarbon known as oil of turpentine and a solid residue called rosin. The former was the most commonly used solvent in oil paint and one of a variety used in varnish-making, whilst the latter was used in both varnishes and oil paints. Wood pitch and tar, used as a medium for some cheap exterior paints, were also manufactured from the same trees.

The late-seventeenth-century author Houghton quoted the following description of the collection and subsequent processing of turpentine as practised at Marseilles in France:

'In the spring, when the sap runs most, they pare off the bark of the pine, to make the sap run down to the hole, which they cut at the bottom to receive it;... then they take up the juice in spoons from the bottom, and when they have a good quantity, they strain it... What runs through easily, is the common turpentine; what remains, they distil in an alembick with a sufficient quantity of water [elsewhere he mentioned four volumes]; and what comes over, is oil of turpentine, and the calx remaining is common rosin. Then they cut the stock of the tree into large chips, and pile them hollow in a cave, covering it on the top with tyles, but so as to let some air come in to feed the fire; then burning them, there runs a thick juice to the bottom,... and that... is tar. Then boiling it gently to consume more of the moisture, they set it to cool, which when cold, is pitch.'\*

\*1019

Hurst described a similar system of tapping as being practised in America during the late nineteenth century, but observed that this was leading to concern about the destruction of the forests and that the French industry was conducted on a rather more scientific principle. In France, he said:

'The trees are cut in February or March, and the sap is caused to flow into an earthenware vessel placed at the foot of the tree. The trees are tapped for five years in succession, when they are not touched again for a few years, and then tapping commences again; when the tree has got somewhat exhausted, the final tapping takes place, and a large yield of resin obtained, but the tree is killed. It is felled, and another planted in its place.'

\*1020

Developments in distillation methods are obscure, but Heaton believed that the system of steam distillation, which was described by Hurst, was introduced during the first half of the nineteenth century.\*

\*1021

#### CRUDE TURPENTINES

A variety of oleo-resins obtained virtually exclusively from several different species of Pinaceae in ways comparable with that just described was directly exploited in painting and varnish manufacture throughout the period being considered. As may be seen from the tabulated list of resins,\* each varies in its composition, and contemporary discussion of them centred around their particular properties for varnish-making, rather than in connection with their distillation to make rosin and oil of turpentine. By the late nineteenth century, however, the majority had become obsolete for the former purpose, and were dismissed summarily by Hurst.\* Most earlier English writers whose works have been noted in connection with the present study distinguished only Venice turpentine from the remainder of the group. Houghton, for example, who described 'Terpentine' in general as a clear, oily liquor, transparent and clammy, with a yellowish-white colour (noting that it was obtained from the Mediterranean, Norway, and New England), singled out Venice turpentine alone for special mention, indicating that it came from France and Germany, and was often known as Ausburg turpentine.\* John Mills and Raymond White, in their recent article 'Natural resins of Art and Archaeology' give the species from which it was obtained as the European

\*Table (vi)

\*1022

Venice turpentine

'Ausburg  
turpentine' \*1023

- \*1024 larch, Larix decidua Mill.;\* whilst Tingry had noted its  
 extraction from the larches of the Apennines, and Heaton  
 \*1025 mentioned its origin as the Tyrol.\* Watin described  
la térébenthine de Venise as the best for use in varnish,  
 mentioning also its medicinal application, but indicated  
 \*1026 that it was expensive, and inferior varieties were often  
 substituted.\*

Strasbourg  
 turpentine

- Besides Venice turpentine, Tingry also mentioned  
Strasbourg turpentine from the silver fir as being adequate  
 \*1027 for use in varnish.\* Heaton noted that it was obtained  
 \*1028 from the white fir, Abies pectinata, of the Vosges;\* but  
 John Mills and Raymond White, who note that the drying  
 properties exhibited by the resin are probably conferred  
 on it by the presence of neutral abienol in its composition,  
 \*1029 cite the species as A. alba Mill.\* In addition, Watin  
 mentioned térébenthine de Suisse and térébenthine de Pise,  
 \*1030 but their nature is obscure.\* La térébenthine de Chio,  
 Chios turpentine which he also mentioned, was obtained from Pistacia atlant-  
tica (a species, not of the Pinaceae but of the Anacardiaceae  
 family), sometimes considered to be a variety of P.  
terebinthus, growing in parts of Greece, Turkey, and the  
 \*1031 Near East besides on the island of Chios.\* Watin coupled  
 it with Venice turpentine as the best for varnish making,  
 but it was, he observed, expensive and used for medicinal  
 \*1032 purposes;\* and Tingry too described it as the most esteemed,  
 \*1033 but rarest.\*

Common turpentine

- The common variety of turpentine, which Watin described  
 as coming from Bordeaux and the Pyrenees and more often used  
 \*1034 than either Venice or Chios turpentines in particular,\* was  
 identified by Tingry as that from the wild pine of the  
 \*1035 South of France.\* The species is given by Howes as Pinus  
pinaster, the maritime or cluster pine, although Heaton  
 cited it as P. maritima, indicating that it was the most  
 widely exploited in France for the distillation of oil of  
 turpentine, calling the oleo-resin Bordeaux turpentine or  
 'Bordeaux  
 turpentine', \*1036 galipot.\* Although Tingry ruled out its use in varnish-  
 'galipot' \*1037 making,\* it is likely it had been used at an earlier date  
 for this and analogous purposes, since John Smith, for  
 example, recommended the addition of some 'good clear

\*1038 Turpentine' to oil paint to improve its gloss and perman-  
ence;\* and Dossie mentioned that it was used as an adulter-  
\*1039 ant for oil of turpentine.\* Other references to its  
employment are discussed in connection with varnishes below.

Information on prices for crude European conifer oleo-  
resins is scant. Stalker and Parker described the clearest,  
finest, and whitest Venice turpentine as sold at 18d. or  
\*1040 20d. per pound,\* whilst Lewis Berger had stocks of 'Tur-  
pentine' amounting to 25 cwt. in 1806 and nearly 14 cwt.  
\*1041 in 1810.\* These were valued at rates of 72s. and £10 10s.  
per cwt. respectively, the equivalents of about 7½d. and  
1s. 10½d. per pound, but further information has so far  
proved elusive.

#### OIL OF TURPENTINE

Oil of turpentine is now imported from several  
countries, but although different varieties have varying  
chemical characteristics, unlike the crude oleo-resins  
discussed above all behave in much the same way as far  
as their practical application in house-painting is con-  
\*1042 cerned.\* On the Continent, most is distilled from the  
turpentine yielded by Pinus pinaster (known also as P.  
maritima); but the only early author to identify the  
source used, Tingry, mentioned that produced from the tur-  
pentine of the silver fir, generally known as Strasbourg  
\*1043 turpentine.\* At the end of the nineteenth century, Hurst  
said that very little French oil of turpentine was exported  
\*1044 to England;\* but minimal information is available from  
earlier publications on house-painting to indicate the  
source most commonly used during the period considered in  
this study. However, as already noted, Houghton adverted  
to the import of crude turpentines from the Mediterranean,  
Scandinavia and New England; whilst Martin mentioned that  
\*1045 which emanated from the Canadian fir.\* Both references  
suggest the existence of an established trade with these  
areas, and the exploitation from an early date of non-  
European species.

Although properly called oil of turpentine, and referred to by Watin as l'essence, l'huile, or l'esprit de térébenthine,\* during the early nineteenth century it became known in England as turps, and was also known loosely simply as 'turpentine', a fact which can give rise to confusion. Its use as a thinner for oil paint was practised throughout the period here discussed, and it also formed the solvent for an important group of varnishes discussed below. Although in common with other painting materials its price seems to have remained more or less constant until towards the end of the eighteenth century, it seems to have suffered slightly more from inflation after this period than many others, possibly since trade with France and America, both important suppliers of the commodity, was disrupted; and Englefield refers to the quest for a substitute in 1779 on account of its high price.\* At the end of the seventeenth century, Stalker and Parker quoted 8d. per pound, a price roughly equivalent to 1s. 3d. per quart;\* whilst Salmon indicated its cost as 1s. per quart in 1734, the same price as that charged in supplying oil of turpentine at Dyrham Park in 1781.\* Both are close to the figure of 1s. 1½d. per quart suggested by Pincof as its 'normal' cost 'except under the unpleasant circumstances we now labour in respect to our relations with Holland, America, &c.'. It was not long, he indicated, since its price had been the equivalent of 10s. per quart;\* but this may have been something of an exaggeration, since the increases tabulated by John Phillips do not approach anything like this figure. Starting from 1s. between 1760 and 1790, its price had, he indicated, risen to 2s. per quart between 1790 and 1803, whilst in 1812 it stood at 3s. falling back to 2s. 9d. in 1821.\* That supplied at Tredegar House in 1793, costing 1s. 8d. per quart, partly bears this out, although Berger still valued his stock of 40 gallons in 1806 at the equivalent of 1s. 1½d., and the same figure appears in the volumes of the Builders Price-book for 1810 and 1813.\* By 1825, however, Lingard indicated the price of the commodity as 1s. 9d. per quart, showing that to whatever heights it may have risen the price had by then fallen back still further.\*

ROSIN

The residue remaining in the retort after distillation of oil of turpentine was run off and solidified to form rosin. Although quite commonly referred to in earlier literature as 'common resin', or simply 'resin' it is more properly known as rosin in order to distinguish it from other substances forming the large group of natural resins described below. Nicholson also referred to it as the 'boiled turpentine of commerce', and Watin gave the alternative names colophone and l'arançon.\*

'Common resin'

'Boiled turpentine'

'Colophony' \*1054

Houghton, it will be remembered, described the production of colophony by distillation of the crude oleo-resin with four volumes of water, but it is clear that the addition of the latter was by no means an invariable practice. Dossie, for example, described white rosin as having been distilled with water, but a brown variety as the result of distillation in its absence;\* and Stalker and Parker had described the boiling of Venice turpentine with and without water to produce white and amber coloured products.\* Tingry too mentioned the difference in technique as producing yellow and black varieties,\* but later in the nineteenth century, possibly after the introduction of steam distillation, Ure (who reserved the term colophony for black rosin) indicated that the difference between the colours was a function of the length of time for which they had been heated.\* Still later, Hurst observed that the colour differences were dependent on the quality of the original resin and the season in which it had been collected, whilst Heaton referred to the practice of bleaching the rosin in sunlight to obtain the very palest grades;\* but there is no reason to suppose that these subtleties were practised commercially at an earlier date.

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The main constituent of rosin is abietic acid ( $C_{20}H_{30}O_2$ ) which exists in a number of isomeric forms. The commodity is insoluble in water, but dissolves in most organic solvents. It is brittle, but softens at about  $80^{\circ}$  C. giving it poor properties for use in paint or varnish.\* Nevertheless, it seems to have been widely employed in linseed

\*1060



oil and turpentine varnishes during the eighteenth century, formulae for which are discussed below; and it was also used to add lustre to oil paint, suggestions to that effect being described in the next chapter, in the section of gloss oil paint finishes. Stalker and Parker described the best 'Rosine' as clear, transparent, and clarified, and sold at 3d. per pound, whilst 'White Rosine' cost 4d. to 6d.\* At Tredegar House in 1793 a small quantity of black rosin was supplied at 6d. per pound, whilst Lewis Berger had a stock of nearly 68 cwt. of black rosin in 1806 valued at 12s. per cwt., roughly the equivalent of 1½d. per pound.\*

#### WOOD TAR AND PITCH

Watin's text provides a little amplification of the description by Houghton quoted at the head of this section outlining the method by which wood pitch and tar were manufactured. When logs from the trees which yield turpentine are placed on the fire, he observed, a slightly viscous, whitish matter first exudes from their ends, which was called poix résine blanche. This is followed by a black oil, and finally a black pitch which he called 'poix de Bourgogne'.\* Tingry's engraving of the commercial process as practised in Russia is illustrated,\* and Ure quoted a description of the method practised in Scandinavia in which the billets of wood were burnt in the absence of air in a covered cavity formed in the ground, the tar being collected in a cast-iron pan as it ran out at the bottom. The varieties which were imported, he indicated, comprised Stockholm, Archangel, and American tars.\* Pitch and tar were used as vehicles for cheap exterior paints, suggestions to this effect being made, for example, by Dossie and Crease,\* but were not employed for the finer requirements of interior decoration. In 1803 Soane purchased a small quantity of pitch for an unknown purpose at a rate of 3d. per pound.\*

OTHER SOLVENTS  
AND THINNERS FOR  
PAINT AND VARNISH

Besides oil of turpentine, a number of other organic solvents were used in paint or in varnish manufacture. Apart from ethyl alcohol, the most important for the latter purpose, all were of vegetable origin.

ETHYL ALCOHOL

Spirit of wine

Ethyl alcohol is obtained by the fermentation of sugars in solution to provide a weak aqueous mixture, the alcohol generally amounting to a maximum of 12 to 13 per cent. To obtain a higher concentration it is necessary to distill the product, the resulting fluid having been known throughout the period considered in this book as spirit of wine. Although by repeated distillation, collecting only a carefully selected fraction of the condensate, it is possible to attain concentrations up to about 85 per cent of alcohol, primary commercial methods in use up to the first half of the nineteenth century would generally have resulted in a rather lower alcohol content. Ure, for example, mentioned the Dorn still in which two distillations took place providing a product of 60 per cent, an improvement, the Coffey still, being patented in 1830.\* This second distillation was known as rectification, the product further refined in this way being thus known as rectified spirit of wine; and during the course of the nineteenth century methods to free the alcohol still further from water, involving chemical absorption of the latter by a range of substances such as calcium oxide or calcium chloride, and eventually metallic sodium, followed by further distillation, were developed. These were discussed by Ure and Church.\*

\*1067

Rectified spirit  
of wine

\*1068

Pure, or absolute, alcohol has a specific gravity considerably less than that of water, and this provides a ready means of determining the relative percentages in a given sample providing the temperature of the mixture is known. The proportion of alcohol can then be expressed either by weight or by volume. Tingry gave the specific gravity of rectified spirit of wine at 55° to 60° F. as 0.830, implying an alcohol content of roughly 91 per cent by volume; and Ure gave figures fixed by the London, Edinburgh, and Dublin Colleges of Physicians of 0.838 or

\*1069 0.840, the equivalents of approximately 88 or 88.5 per cent by volume; whilst Hurst also gave 0.838.\* Whether such high concentrations would have been in common use for varnish-making during the eighteenth century is not, however, clear, although Watin observed that it was  
\*1070 necessary to use rectified spirit for this purpose.\*  
\*1071 Later, Vanherman mentioned the employment of rectified spirit of wine in the thinner for his 'Aromatic Paint'.\*  
By the mid-nineteenth century the duty-free methylated spirit then available was widely employed. Ure, for example, mentioned its extensive use in varnishes and lacquers, and gave its constitution (since modified) as spirit of wine having a specific gravity not less than 0.830 with an addition of 10 per cent of wood spirit  
\*1072 (methyl alcohol) to prevent its consumption.\*

During the seventeenth century on the other hand, it seems more likely that rather lower concentrations were employed, and Stalker and Parker provided the following advice on the purchase of the commodity:

'To make Varnish you must have Spirit of Wine, which must be strong, or it will spoyle the Varnish, and not dissolve your Gums, and consequently hinder your design; for the stronger your spirits are, the better will the Varnish be; the Spirits only being to dissolve the Gums, in order to make them spread, or lie even upon the work. After it hath performed that work, the sooner they evaporate the better, and the higher the Spirits are drawn, the less flegm or watery parts are in them; and the less of watery parts are in the Varnish, the sooner it dries, and is fit for polishing, is more permanent, and will come to the greater and better gloss. But this is of little use now Varnish is so much used; for the Distillers have learned by practice and custom to make Spirits that just dissolve the gums, only it requires the longer drying: Yet these Spirits that are commonly used will sometimes be too weak, either by neglect or dishonesty of the Distiller, who hath not sufficiently deflegm'd or drawn all the watery from

the spiritous parts. Therefore the best way to prove your Spirits, is to take some in a spoon, and put a little Gun-powder in it, and then set the Spirit on fire with a little paper or candle, as you do Brandy, and if it burn so long till it fire the Gunpowder before it go out, it is fit for use, and will dissolve your gums.'\*

\*1073

Proof spirit

The test they suggested is, of course, the old method for the determination of proof spirit, defined by 58 Geo. III, c. 28 as weighing twelve-thirteenths of an equal volume of distilled water at 51<sup>o</sup>F. Ure gave this as the equivalent of a mixture having a specific gravity of 0.919 at 60<sup>o</sup>F., or roughly 57 per cent by volume, although at the end of the century Hurst gave 0.926, approximately the equivalent of 53.5 per cent by volume.\* Proof spirit and rectified spirit were, Ure indicated, the two commonly sold concentrations of spirit of wine.\*

\*1074

\*1075

#### OIL OF CARAWAY

'Oil of carraway' was suggested by Cadet-de-Vaux as an alternative to linseed oil in his recipe for milk painting, especially in the preparation of a fine white (a suggestion copied by Butcher), and by Vanherman as a constituent of the thinner for his 'Aromatic Paint'.\*

\*1076

Ure indicated that it was extracted from the seeds of the plant Carum carui, but it seems unlikely to have been

\*1077

used to any great extent.\*

#### OIL OF LAVENDER OR SPIKE

Tingry described the manufacture of essential oil of lavender by the distillation of the flowers or tops with water, indicating that essential oil of spike was the same but produced from a different variety of the plant.\*

\*1078

Ure gave the species as Lavendula vera and L. spicata respectively, mentioning that the latter was used by porcelain painters and by artists in making varnish.\*

\*1079

Church too referred to both varieties, stating that they were used for painting without any treatment other than

re-distillation, which, he cautioned, should be carried out after contact with quicklime for twenty-four hours and not following treatment with caustic potash. Oil of spike was, he indicated, a powerful solvent for many resins.\*

\*1080

An agreement with Robert Streeter, the Sarjeant Painter, dated 1665, stipulated the inclusion of spike oil in the second coat for the painting of Clarendon House, Piccadilly;\* and the seventeenth-century French author Félibien also mentioned its use as a thinner in oil paint.\* Writing in the early nineteenth century, however, the author of The Painter's... Pocket Manual indicated that it was hardly ever free from impurity and its use was generally renounced;\* whilst Whittock remarked that although oil of spike or lavender had formerly been employed by house-painters instead of oil of turpentine the latter was by his time preferred and the former was only used for enamelling.\* It seems doubtful, however, that Lavendula oils would have been used for house-painting, other than in exceptional cases, at any date.

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#### OIL OF RHODIUM.

It was laid down that oil of rhodium (which, Ure indicated, was extracted from the wood of Convolvulus scoparius)\* was to be used in the finishing coat for the painting of Clarendon House, Piccadilly, in 1665.\* This seems, however, to have been an exceptional specification.

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\*1086

#### OIL OF TURPENTINE

Oil of turpentine, the thinner most generally employed in oil paint and widely used as a solvent in varnish making, has been described fully above.

RESINS AND OTHER  
SUBSTANCES USED  
IN VARNISH

The solvents and thinners used in varnish-making have already been described together with the group of products prepared from the natural turpentine yielded by several species of the Pinaceae family of conifers. During the period from the late seventeenth to the early nineteenth centuries a large number of other organic substances were employed in the manufacture of varnish and all paints, and are now discussed under three main headings: the resins variously soluble in linseed oil, oil of turpentine, or alcohol forming the basic constituent of varnishes; a substance, camphor, used to improve flexibility; and colouring agents, some of which were resins and others dyes capable of solution in organic solvents, a number of which also found use in pigment manufacture and have already been described above.

Basic varnish  
resins

\*1087

The subject of natural varnish resins is extremely complex, and even today some groups of the species from which the substances have been obtained have not been completely identified (notably those yielding the copals, damars, and elemis), although others are better defined. Nor have all the organic constituents been determined. Early writers were often obscure in their nomenclature, and, writing as late as the beginning of the present century, A.H. Sabin remarked in his book, The Industrial and Artistic Technology of Paint and Varnish, that one of the most serious difficulties in approaching the subject was posed by the fact that in different countries different names were given to the same resin, and the same name to different resins.\* Moreover, many of the materials formerly exploited are now virtually obsolete commercially, and interest in the subject is more or less confined to botanists or to historians, especially those concerned with techniques used in the fine arts or in the making of ethnographic objects. On this account, therefore, the amount of directly relevant modern research carried out is extremely limited; but, following the development of more subtle analytical methods allowing more detailed identification of the organic constituents, increasing attention is being given to the subject within these fields, and a careful summary of published papers has recently been prepared by

Table (vi) Notable components of resins yielded by different species as given by Mills and White, 'Natural Resins' (1977)

**DITERPENOIDS**

Class	Order	Family	Genus	Species	Product	Components	
Gymnospermae	Coniferales	Pinaceae	<u>Pinus</u>	various	Common turpentine	( - )	
			Do.	extinct	Amber	abietadiene ) and lesser ) amounts of ) pimaradiene ) acids	
			<u>Picea</u>	<u>abies</u>	Burgundy pitch	( abietane, pimarane, and labdane compounds	
			<u>Abies</u>	<u>alba</u>	Strasbourg turpentine	( neutral abienol (or its oxidation products)	
			<u>Larix</u>	<u>decidua</u>	Venice turpentine	( manool, larixol, and larixyl acetate	
Angiospermae (sub-class Dicotyledoneae)	Do.	Cupressaceae	<u>Tetraclinis</u>	<u>articulata</u>	Sandarac resin	phenols, commun acid (or its polymers), and pimaradiene acids (especially sandaracopimaric acid)	
		Do.	Araucariaceae	<u>Agathis</u>	<u>dammara</u>	Manila copal	) polymerised commun, ( - ) sandaracopimaric, ) and agathic acids ( communol, abietic & co-polymerised commun acids
			Do.		<u>australis</u>	Kauri resin	
Angiospermae (sub-class Dicotyledoneae)	Rosales	Leguminosae (sub-family Caesalpinioideae)	<u>Hymenea</u>	various	Brazil and East African copals	labdanes of the enantiomeric series and derived compounds, polymers probably from ozic acid or a related compound	

**TRITERPENOIDS**

Angiospermae (sub-class Dicotyledoneae)	Do.	Guttiferales	<u>Hopea</u>	various	Damar	dammarane compounds, and sometimes oleanane and ursane compounds
		Sapindales	<u>Pistacia</u>	<u>lentiscus</u>	Mastic resin	keto-acids of euphane skeleton, oleanonic acid, and compounds of the euphane and oleanane series
Angiospermae (sub-class Dicotyledoneae)	Do.	Rutales	<u>Canarium</u>	<u>luzonicum</u>	Manila elemi	) ('elemi acids' (euphanes) ) $\alpha$ - and $\beta$ - amyrrin (
		Do.	<u>Bursera</u>	various	) S. American elemis	)
			<u>Protium</u>	various	)	)

**OTHER**

Angiospermae (sub-class Dicotyledoneae)	Ebenales	Styracaceae	<u>Styrax</u>	various	Benzoin	coniferyl benzoate
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Dr. John Mills and Raymond White designed as an aid to analysis of museum specimens by gas chromatography.\* However, even though such modern analytical techniques provide a development having considerable potential for further work, the two authors draw attention to the fact that many of the substances originally present in varnish formulae undergo changes with time, volatiles evaporate, and complex polymers are formed, and progress is hampered by the lack of a complete corpus of knowledge of the species of plant exploited in the first instance. Besides this, many harder resins were subjected to heat treatment before incorporation with the solvents, a factor which will again have altered their character, placing a further limitation on the results immediately obtainable by analysis unsupported by a great deal of experimental work with samples of fresh material, much of which is virtually unobtainable. Whether this work can ever be extended to the varnishes used for house-painting seems doubtful in the foreseeable future, but the knowledge which will undoubtedly be gained from the study of samples from portable museum or gallery artifacts may well prove to be of considerable value in this connection, and the field is one in which major developments may be anticipated.

Clearly, therefore, the literature on house-painting which has formed the basis of the present study is insufficient taken on its own to provide a proper knowledge of varnish materials as imported and used during the period being considered. For this reason, the notes which follow are designed to examine briefly modern definitions and to compare with these the references encountered in earlier literature so that, coupled with the development of scientific analysis in the field mentioned above, a more definitive study may become possible. In the descriptions of individual groups of resins which follow, it has not been thought necessary to include a complete description of the organic compounds forming their constitution, even where these have been adequately identified, but a summary based on the paper by John Mills and Raymond White is provided.\* The general basis for their classification is based on the division of the vast majority of resins into two distinct

\*Table (vi)



classes, those containing diterpenoids, which come from certain species of the order Coniferales and the Leguminosae family of the Rosales, and those containing triterpenoids from several families of broad-leaved trees. For more detailed information on individual constituents, however, attention is directed to their paper.

With the exception of lac, which is produced by insect activity, resins are the product of trees and occur in the form of sticky exudations on the trunk or branches; but, before describing these in more detail, a number of definitions have to be made. In the first place, although the term gum has often been applied to resins, a clear distinction is now made between the two groups: resins are insoluble in water and dissolve only in organic solvents; whereas gums are more or less soluble in water, or may swell to form a jelly-like mass when placed in it, but are insoluble in organic solvents. Oleo-resins are a mixture of a resin with an essential oil, the crude turpentine discussed above being one example. In their fresh state resins from vegetable sources are known as recent resins, but many may be found in a fossilised or semi-fossilised state, and have been imported as fossil resins. The latter group has been widely used for the manufacture of oil varnishes, whilst the recent resins are generally softer and used in spirit varnish. Fossil resins do not dissolve easily in linseed oil, and in order to achieve solution must first be run, that is, heated to melting point. This alters the structure of the complex substances of which they are composed, and the technique was certainly in use by the beginning of the nineteenth century when Tingry described a special furnace for the purpose.\*

\*1089

#### AMBER.

The fossil resin, amber, known mineralogically as succinite, occurs in the greensand beds of the Cretaceous period in a belt extending from England to the Baltic coast and beyond. English sources, principally comprising pieces washed up on the shores of East Anglia, seem to have been of strictly limited importance, and those of the Baltic,

where extensive deposits have been mined or quarried as well as collected from the coast, were the most extensively exploited.\* Recently, by analysis of its organic chemical constituents, it has been possible to confirm the long-standing theory of its natural origin as the oleo-resin of one or more extinct species of Pinus.\*

\*1090

\*1091

Amber was the hardest of the varnish resins in use, and it had to be run to become sufficiently soluble in linseed oil or oil of turpentine, although it is more or less insoluble in alcohol, and varies in colour from off-white to brown or red. It was in use, at least for fine art purposes, by the second half of the seventeenth century (when it was included in at least one formula for a picture varnish)\* but had been known since classical times when it was called electron on account of its electrostatic properties. Watin, who described amber (karabé) as commonly found in the sea at Danzig (now Gdansk) stated that together with copal it was the principal constituent of oil varnishes, but also drew attention to an apparently similar substance obtained at the beginning of the eighteenth century from Marseilles and warned particularly that the Dutch passed off an American material called 'gomme de look' in its place.\* The so-called Travancore ambers occur in the East Indies, and several other similar substances are found in other parts of the world.\*

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The extent to which varnishes containing amber were in use for house-painting purposes during the eighteenth century is not clear, although Vanherman indicated that these were prepared in a similar way to copal varnishes,\* but the author of The Painter's... Pocket Manual (1825) remarked that, whilst amber varnish had been in very general use, 'of late, copal, on account of its being less coloured, has obtained a preference', and Vanherman too had drawn attention to the 'high coloured' nature of the former.\*

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Ure recorded the imports of rough amber in 1855 and 1856 as 7 cwt. and 1 cwt. respectively, suggesting that by that date it was hardly ever employed;\* and Hurst, whilst mentioning that it yielded the finest and most durable varnish, giving a firm and elastic coat which resisted the action of the atmosphere exceedingly well, observed that on account

\*1098 of its dark colour and expense it was rarely used.\*

ANIMI

See under COPAL below.

BENZOIN

Hurst gave the origin of benzoin as the species Styrax benzoin growing in Sumatra, Java, Borneo, Siam, Laos, and other parts of the Malay Archipelago, although other species of the same genus may also have been exploited. He indicated that Sumatra and Siam were the principal commercial sources, and described the cultivation of trees from seed in the former country. These were tapped by means of incisions made in the bark when seven years old, and yielded resin over a period of nine years, although in the interior regions resin was collected from wild trees. The Siamese and Sumatran products, he indicated, differed slightly in their appearance; that from Siam was imported in the form of milk-white tears, or an agglomerate of these in a yellowish matrix, whilst the Sumatran product was rather greyer in colour, having white tears in a darker translucent matrix.\* The resin is soluble in alcohol and has a distinctive, fragrant odour which seems to have provided the main reason for its use in varnishes. Watin, for example, drew attention to this characteristic,\* and Ure remarked that it was principally used in perfumery and in the composition of certain varnishes for snuff-boxes and walking-sticks to provide an agreeable smell when these were warmed by the hand.\* Hurst too indicated that it was principally on this account that it was used.\*

The descriptions of both Watin and Tingry tally well with Hurst's account of the two varieties of benzoin, Watin in particular drawing attention to the two forms in which it was found, en larmes and en masse, adding that the former was preferable, but more expensive and not in common use.\* Stalker and Parker too provided advice on selection of the resin, recommending that in choosing

'Benjamin'

'Benjamin, or Benzoine' the best was that of a bright reddish colour 'very like to clarified Rosine, but never so fine, freest from dross or filth'. Its price, they indicated, ranged from 4d. to 6d. or 8d. per ounce, depending on its quality.\*

\*1104

#### COPAL, ANIMI, AND KAURI RESINS

'Copal'

The term 'copal' has been used for a large group of resins, most generally those characterised by their hardness and relatively high melting point. They are the product of trees of the Leguminosae and Araucariaceae families and can be found both as recent resins and in a fossilised or semi-fossilised state. The latter 'hard' and 'half-hard' copals have to run to make them soluble in drying oils, but the 'soft' copals are used in spirit varnishes. Most, however, freely exported in the past, are no longer exploited, and the principal though still limited imports today are generally of soft copal from the East Indies.\*

\*1105

Modern writers define five basic groups of copal resins, those from East Africa, West Africa, and South America produced by various Leguminosae species belonging to the sub-family of Caesalpinioideae, and those from Eastern Asia and New Zealand from species of the family Araucariaceae. From the indications given by earlier authors it seems likely that all of these, with the exception of New Zealand were being exploited by European varnish-makers by the mid-eighteenth century, the evidence available perhaps tending to suggest that the Caribbean was the main source of supply at least until the beginning of the nineteenth. Although the term copal appears to have been used by some authorities to cover any hard resin suitable for use in oil varnishes, and Watin, for example, described it and amber as the principal constituent of these, Tingry included a recent resin under the same collective noun which was at least partly soluble in alcohol and oil of turpentine;\* and, as already mentioned, modern 'copal' resin is of the spirit-soluble type. Stalker and Parker too suggested that 'copal' should be dissolved in

\*1106

alcohol, and by way of general advice directed that the best 'Gum Capall' was:

'the whitest, freest from dross, and thick dark stuff that is incorporated with the Gum. It is of it self a thick whitish heavy Gum, and rarely without that dark and drossy mixture; but that which is clearest and freest from the said stuff is the best.'

\*1107 The price was, they added, 1s., 1s. 4d., or 1s. 6d. per pound according to the quality.\*

#### East African copal

\*1108 Howes describes the East African resin trade as of long standing, Arab traders having exchanged the commodity for Indian cotton, and states that the Portuguese developed this during the eighteenth century, the Americans continuing to do so during the nineteenth. He gives the species from which the fossilised or semi-fossilised resin originated at Trachylobium verrucosum, but more recently this has been reconsidered, and the tree responsible is now thought to belong to the genus Hymenea, and hence is known as H. verrucosum.\*

\*1109 Hurst described the method of collection in Zanzibar and on the neighbouring mainland, in which the ground was prodded by collectors during the rainy season using iron rods in order to locate the pieces of buried resin, which occurred generally at a depth between eighteen inches and three feet. The pieces were cleaned to reveal their pale yellow or amber-coloured interior, which was second only to amber in hardness. He described the resin as soluble in linseed oil and in oil of turpentine after running, but not in alcohol.\* Heaton adds that it was scarce, expensive, and only used in the highest quality varnishes. It was, he notes, formerly obtained primarily from Zanzibar; but he mentions that digging there had declined and the trade transferred to Tanganyika, resin from this source being exported from Lindi. He also refers to a similar resin called Mozambique or Inhambane copal, and mentions another copal imported during the first half of

\*1110 the present century from Madagascar.\*

'Animi'

\*1111 Although Hurst restricted the term animi to East  
African or Zanzibar copal,\* a terminology followed by  
\*1112 Heaton,\* its use by earlier writers cannot be taken as  
necessarily referring to resins from this area. Tingry,  
for example, described an 'animi' from Ethiopia (which,  
he observed, was the more common in commerce), but also  
\*1113 applied the name to a resin from Brazil discussed below; \*  
\*1114 whilst Ure too mentioned 'animé' of South American origin.\*  
It is clear also that the use made of 'Gum animæ' by  
Stalker and Parker in a formula for an oil gold-size  
\*1115 without running\* rules out its identification with Zanzibar  
copal; and A.H. Sabin warned: 'Animi is a name the value  
\*1116 of which can never be known except from the context'.\*  
Both Tingry and Whittock too used 'animi' in spirit var-  
nishes, clearly ruling out any possibility that the term  
was earlier reserved for East African copals, and suggest-  
ing widespread use of it for softer copals from different  
\*1117 sources.\*

#### West African copals

A large number of both fossil and recent resins has  
been obtained, particularly during the last hundred years  
from West Africa, although the species yielding these have  
still not been completely identified. Hurst described the  
fossil resins as resembling those from East Africa, and  
second only to them, although not quite so hard. They were  
known generally by the names of the countries from which  
they were shipped, and he listed Sierra Leone copal;  
'Angola copal' from Angola, Benguela, and the Congo; and  
Gaboon and Loango varieties. Each had slightly different  
properties, but no living tree was known yielding such  
resins, although, he observed, it was possible that one  
or more species might be found once the inland areas became  
better known. Both he and Church described Sierra Leone  
copal, in particular the variety known as pebble copal, as  
the best, and only soluble in linseed oil after running;  
but the latter indicated that it was partially soluble in  
oil of turpentine and that the species from which it was  
\*1118 obtained had been identified as Copaifera guibourtiana.\*

Later, Heaton observed that the supply of fossil resin from Sierra Leone was practically exhausted, and it was the recent resin from this species which was imported; \*1119 whilst more recently still Howes notes that resin from the Congo, which Hurst had described as only available in small quantities, had been the most important in the period between the two world wars.\* No specific reference \*1120 to West African copals has been encountered in the earlier literature on house-painting which has formed the basis of the present study, although Dossie referred to Africa as a source without qualification.\* \*1121

#### Asiatic copals

Howes lists various sources of copal resin in the East Indies, indicating that although these were originally exploited in fossil form, recent resins are widely obtained; and most copal available today is of this latter type.\* Heaton described the East Indian resins as forming a group ranging in hardness from varieties about as hard as Congo copal to those almost as soft and soluble as damar, discussed below. They were, he observed, often referred to in general as Manila copals, although similar material was obtained from other islands.\* Hurst noted that Manila copal was partly soluble in oil of turpentine, but completely soluble in alcohol and employed in spirit varnishes.\* The trees yielding the resin belong to the genus Agathis, modern writers mentioning A. alba or A. dammara;\* although during the nineteenth century Ure regarded one source as Elaeocarpus copalifer and noted that the resin was soft and transparent and dissolved completely in oil of turpentine.\* Earlier authors who mentioned the East Indies as a source of copal include Dossie and Tingry, the latter remarking, however, that it was rarer than copal from the West Indies.\* \*1122 \*1123 \*1124 \*1125 \*1126 \*1127

#### Kauri resin

Another species of Agathis, the Kauri pine, A. australis, growing in New Zealand produces a resin which has been obtained in both fossil and recent states, although

in this case the fossil variety is thought to be of comparatively recent age, perhaps only hundreds of years old.\* It was considered by Hurst as far from equalling the African copals, and he noted that in the form in which it was obtained it was partially soluble in oil of turpentine and alcohol, and completely so after running, although its properties in this respect could vary.\* In the mid-nineteenth century, Ure described the resin as a 'new and peculiar substance' imported under the name cowdie resin;\* and it seems unlikely to have been of any importance during the period under consideration, although it is possible that Vanherman's reference to 'Capavi' may represent this substance since, despite its phonetic closeness to karabé, he listed amber separately in the same schedule.\*

South American copal

Like the African copals, South American resins are produced by trees of the sub-family Caesalpinioideae of the Leguminosae, the species in this case belonging to the genus Hymenea. They may be procured either in a fossilised or recent state, in the latter case often being in the form of a soft 'elemi'. The two sources particularly noted in late nineteenth and in twentieth-century literature are Brazil and British Guiana, the latter having provided the fossil Demerara copal which Hurst (giving the alternative name 'Demerara animi') described as an excellent oil varnish resin not soluble in alcohol.\* Heaton, however, remarked that resin from Brazil was not used in Europe.\* The species most generally mentioned is H. courbaril, but earlier nineteenth-century writers such as Ure and the author of the article in the 1810 edition of the Encyclopaedia Britannica mentioned recent American resins as the product of Rhus copallinum.\*

Amongst still earlier authors, Dossie mentioned the West Indies as a source of 'copal' or 'animi';\* and Watin too described resin from trees in the West Indies and Cayenne, advising that good pieces, golden yellow in colour, transparent, light, and friable should be chosen, indicating that copal was, with amber, the principal



- \*1136 constituent of oil varnishes.\* Ure too described 'animé' as emanating from the 'courbaril' of Cayenne and South
- \*1137 America.\* Besides the West Indies, Watin mentioned New Spain, a source to which the author of the Practical
- \*1138 Treatise also referred.\* Tingry described this resin as distilling naturally from a tree abundant there and being procured in the form of a hard solid which was transparent with a shining surface of faint lemon colour sometimes inclining to orange. It was, he added, partially soluble in pure alcohol, or, after treatment, in oil
- \*1139 of turpentine.\* He too applied the term 'animi' to resin of South American origin, this time to the variety from Brazil, which, he observed, came in pieces of large size, opaque yellow in colour with a white marbled appearance.\*
- \*1140

#### DAMAR

- Resin is yielded by trees belonging to the sub-family Dipterocarpoideae of the Dipterocarpaceae family found over a wide area of the Far East, including the Seychelles, Philippines, New Guinea, Malaya, and Indonesia, the total number of species numbering over five hundred. The harder of these have been exploited as damar resin, and modern examples are thought to emanate from a species of Hopea so far unidentified;\* although late nineteenth-century writers such as Church and Hurst mentioned H. Odorata and H. micrantha as providing 'rock damar', together with species of the genus Dammara (D. orientalis, producing 'Singapore' or 'white damar'), Vateria (V. indica, and V. acuminata, the former providing 'piney resin', also known as 'white damar', and the latter a similar product from Ceylon), and Shorea (S. robusta, from which 'sal damar' was obtained). The resins occur generally in the form of hard, white nodules or in stalactitic form, and are insoluble in alcohol but soluble in oil of turpentine, this having been regarded as distinguishing them from the 'copals', although Hurst indicated that they were sometimes
- \*1141 classed within this general group.\* Although Howes relates that the word damar first came into English usage when the earliest British traders visited Malaya, observing that a writer of 1673 spoke of it as being 'taken out of the sea',
- \*1142

no explicit reference to damar has been encountered in any of the early nineteenth-century literature or earlier works on the subject of house-painting which has formed the basis of the present study. He remarks, moreover, that to natives of the producing areas 'copal' and 'damar' were the same, pointing out that the latter was the native term, the word copal being of Mexican origin.\* Hence it seems quite likely that damars of varying type were in use for oil or turpentine varnishes during the period presently being considered.

#### ELEMI OLEO-RESIN

Soft oleo-resins may be obtained from a number of species belonging to the family of Burseraceae which are distributed from the East Indies to Mauritius, West Africa, South America, and the West Indies. The Manila elemi imported today is the product of Canarium luzonicum, but although John Mills and Raymond White note that the Philippines have been known as a source since about 1700 the only references encountered in eighteenth and early nineteenth-century literature on house-painting is to African or South American supplies, Tingry in fact regarding that from Ethiopia as the 'genuine' kind.\*

The products of the West Indian, and South and Central American genera Protium and Bursera, which John Mills and Raymond White note have sometimes gone under the name 'elemi', were, they mention, imported to Europe from the sixteenth century onwards.\* Watin described elemi as a yellowish or slightly greenish-white substance obtained from the wild olive of Mexico, and imported in pieces weighing two or three pounds wrapped in leaves of the Indian cane. He advised that those should be chosen, which, being dry on the outside, were like molasses within, and noted its use to give flexibility and body to spirit varnishes and enable them to take a polish, adding, however, that turpentine were often substituted.\* Tingry too provided a similar description.\* The author of the 1810 edition of the Encyclopaedia Britannica and Ure gave the species yielding the substance as Amyris elemifera, the former mentioning the

\*1148 West Indies and the latter South America, in particular  
Brazil.\*

\*1149 In the 1860 edition of Ure's Dictionary, however, the  
editor noted that the description in the former edition  
was incorrect, and that most elemi was imported via Hol-  
land from the Dutch settlements.\* Since the East Indies  
were also mentioned as a source in the 1810 Encyclopaedia  
\*1150 Britannica,\* it therefore seems likely that during the  
first half of the nineteenth century this area took over  
as the main source of supply, especially because, although  
Hurst mentioned both Mexico and Brazil resin, he indicated  
that Mexican material was not very common and confined his  
main account to Manila elemi which, he said, was white or  
greyish in colour with a granular appearance, noting its  
\*1151 solubility in alcohol.\* It seems most likely therefore  
that the majority of seventeenth and eighteenth-century  
material was from South America; and Stalker and Parker,  
who described the best 'Gum Elemni' as the hardest, whitest,  
and clearest, most free from dross or dirt, and imported  
wrapped in the bark or husk of a tree, indicated that it  
\*1152 cost 4d. or 5d. per ounce.\*

#### KAURI RESIN

See under COPAL above.

#### LAC

The sticky exudation formed by the Indian lac insect,  
Coccus lacca, on the branches and twigs of the host trees  
and in which the eggs are laid has already been mentioned  
in connection with the red dye also present which was used  
'Stick lac' to prepare a lake pigment. The crude lac, known as stick  
lac, is removed from the twigs, beaten, sifted and washed  
'Seed lac' to remove the dye. In this form it is known as seed lac,  
which, as its name implies, is in the form of granules  
having a dark reddish brown colour. The seed lac may then  
be melted, strained, and either drawn out or cast into  
transparent sheets which are broken into smaller pieces  
and marketed as shellac. Tingry, for example, described  
'Shellac'

\*1153 the method of casting the lac on a marble table,\* whilst  
Ure noted use of the smooth stems of the banyan tree for  
\*1154 the same purpose.\* Modern specimens of seed lac resemble  
earlier descriptions closely, but much of the shellac  
imported today has received further treatment to bleach its  
natural colour. The resin, the only one exploited in con-  
nection with house-painting to be of animal origin, is  
soluble in alcohol to give a brownish solution, making  
what is often called French polish.

Stalker and Parker described the best 'Gum Lac, called  
Seed-Lac' as large-grained, bright, and clear, free from  
dust, sticks, and dross, pricing it from 1s. 2d. to 1s. 6d.  
per pound; and the best 'Shell-Lacc' as the most transparent  
and thin, which when melted down drew out the longest and  
\*1155 finest thread, and costing 1s. 6d. to 2s. per pound.\*  
Interestingly, Dossie argued that seed lac and shellac  
\*1156 were quite different substances,\* but Watin described  
accurately the relation between the three forms in which it  
\*1157 was imported.\*

#### MASTIC

Mastic resin, which, Howes notes, was mentioned by  
Theophrastus, is obtained from incisions in the bark of  
\*1158 the small Mediterranean tree, Pistacia lentiscus.\* The  
main source of supply is Chios, which was mentioned by the  
\*1159 late-seventeenth-century author Houghton,\* although Church  
\*1160 noted other sources of similar material in India.\* The  
resin is soluble in alcohol and turpentine, and Heaton  
described its uses as comparable with damar, adding that  
since it was considerably more expensive than this it was  
\*1161 mainly used for high quality picture varnishes.\* It was  
in this connection also that Vanherman referred to its  
\*1162 employment.\* Stalker and Parker mentioned mastic,+ and  
Watin described the resin as being procured in the form of  
seeds or tears nearly as big as barley, and inclining to  
\*1164 lemon in colour.\* This is matched by modern samples. It  
could, he observed, be distinguished from the similar-looking  
resin sandarac in that the latter does not soften when placed  
on the tongue, whilst mastic becomes sticky; and it was, he

indicated, the principal constituent of turpentine varnishes. In 1810 Lewis Berger had a small stock of 1 lb. of mastic valued at 5s.\*

\*1165

#### ROSIN

This has been discussed above in connection with turpentine products.

#### SANDARAC

'Gum juniper'

Sandarac resin, also known as gum juniper, exudes naturally from trees native to the mountains of North Africa, although production is increased by making incisions in the bark. The species is now known as Tetraclinus articulata, but Heaton and the late-nineteenth-century writers Church and Hurst cited this as Callitris quadri-  
\*1166 valvis, whilst Ure regarded it as Thuya articulata.\* The resin, which was known to the ancients and in the middle ages, is completely soluble in alcohol and partially soluble in oil of turpentine. Watin described sandarac as the principal ingredient of spirit varnishes, and obtained in clear tears which were shiny and transparent, whitish in colour but inclining to lemon, a description  
\*1167 matched by modern samples;\* whilst Tingry added that it had  
'vernix' \*1168 been known as 'vernix'.\* Stalker and Parker, who indicated that the best 'Gum Sandrick' was the largest and whitest with the least tendency to yellow, gave prices of 1s. or  
\*1169 1s. 2d. per pound;\* whilst in 1806 and 1810 Lewis Berger had stocks of 28 lb. and 2 lb. respectively, valued at 4s.  
\*1170 and 1s. 8d. per lb.\*

#### TURPENTINES

Crude turpentines have been discussed above in the section dealing with the whole group of turpentine derivatives.

Non-resin  
plasticisers

CAMPHOR

- Only one plasticiser, camphor, has been noted in the literature examined. This aromatic ketone occurs naturally in the wood of the camphor tree native to Japan and Borneo. Tingry described the source as a kind of laurel found in the East Indies and Japan;\* and Ure, who indicated that camphor was found in a great number of plants, noted that the only species from which it was extracted for manufacturing purposes were Laurus camphora and L. sumatrensis. He described its preparation by distillation of the wood with water, adding that it could also be prepared chemically.\*
- \*1171 The hard translucent solid obtained was described by Watin;\* and Tingry, who suggested its employment in formulae for both spirit and turpentine varnishes, indicated that its main use was in facilitating the solution of certain resins whilst adding toughness to the product and preventing cracking. A quantity of 5/8 ounce per pound of spirit of wine should not, he added, be exceeded.\*
- \*1172
- \*1173
- \*1174
- \*1175 Vanherman employed camphor in a white copal varnish.\*

Colouring agents

Although several colouring agents used in both varnish and pigment manufacture have already been described in connection with the latter, certain substances, generally soluble only in organic liquids, remain to be discussed.

ALKANET

- Tingry's later editor mentioned the use of the red dye extracted from alkanet root in coloured lacquers, or 'changing varnishes'.\* Ure gave the species as Anchusa tinctoria, a variety of borage grown at Montpellier and in the Levant, indicating that the roots imparted a fine red colour to alcohol and oils, but only a dirty red to water. It seems unlikely to have been in extensive use for lacquers, however, since he only mentioned its employment in ointments and pomades, although he described also a method for its use in staining marble a flesh colour.\*
- \*1176
- \*1177

## ANNATTO

Annatto has been described in the section on yellow lake pigments above.

## ASPHALTUM

A number of naturally occurring bitumens containing varying proportions of asphalt have been used in the manufacture of black and brown varnishes and were employed for fine art purposes as glazes, especially during the eighteenth century.\* They consist essentially of hydrocarbons of high molecular weight associated with complex organic derivatives often containing sulphur and nitrogen, mixed with mineral matter. That from Val de Travers in Switzerland, for example, contains only about ten per cent of asphalt, whilst that from the great asphalt lake in Trinidad is mixed with about thirty to forty per cent of a fine clay in suspension.\* Although Dr. Harley indicates that American sources have been known since the seventeenth century,\* and by the late nineteenth Church and Hurst were familiar with material from Switzerland, Albania, Trinidad, Barbados, and Peru,\* references in the earlier literature connected with house-painting examined are only to material from the Near East. Dossie remarked that asphaltum was obtained from Asia,\* whilst Watin described l'asphalte ou bitume de Judée.\* This was also known as Jew's pitch, and came, Tingry indicated, from 'Lake Asphaltis' (the Dead Sea). It was, he observed, an almost black, brittle solid having a brilliant surface as if polished.\* It is soluble in oil of turpentine.

Stalker and Parker employed 'Gum Efpaltum' in oil-based gold size,\* and Dossie also mentioned the use of asphaltum for this purpose;\* whilst the author of the Painter's... Pocket Manual reserved it for bronzing or very pale gilding.\* Vanherman suggested its employment in making a black turpentine varnish,\* and Watin used it for the same purpose in oil.\*

DRAGONS BLOOD

Three basic varieties of dragons blood have been recognised: that from Dracaena cinnabari growing on Socotra, which, Howes observes, was described by Dioscorides and Pliny; that from D. draco of the Canary Islands, which was in use by the fifteenth century; and that from certain Daemonorhops species of palm growing in the East Indies and Malaya.\* (The species from the latter area cited by Hurst was, however, Calamus draco.)\*

\*1190 The substance is soluble in alcohol, but not to any extent in oil of turpentine, and was used to impart a red colour to lacquers, instances being given in Chapter II below. Stalker and Parker described the best as that which was the brightest red and most free from dross. It was, they indicated, bought in drops made up in a kind of leaf or husk, and cost 8d. or 1s. per ounce.\*

\*1191 This description matches that given by Hurst of the Socotran product, which was obtained by tapping the tree, but it differed in appearance from the Far Eastern variety, which he also described. This, which formed on the fruit of the tree as it approached maturity, was collected by shaking the fruit into baskets, and sifting the resin to separate it from the stems and particles of woody fibre. It was then heated and cast into rolls by wrapping it in a palm leaf. It was, he observed, the type most generally imported by the late nineteenth century, very little then being obtained from the Canaries.\*

\*1192 It is, however, difficult to suggest that this was necessarily the case during the eighteenth century since descriptions are not specific. Watin, for example, stated only that the best was that imported in the mass as when taken from the trees;\*

\*1193 whilst Tingry mentioned the Canaries, Jamaica, and the East Indies as sources of resin, which he described as dry, friable, and inflammable, of a dark red or brown colour, and readily soluble in water, adding that two varieties were sold, the first in globules, the second of softer consistence.\*

\*1194

\*1195



## GAMBOGE

- The yellow gum-resin gamboge, obtained from South-east Asian trees belonging to several species of Garcinia, has been imported since the early seventeenth century.\*
- \*1196 It contains both a gum soluble in water and a resin soluble in alcohol, and is produced from incisions made in the bark of the tree. The gum-resin is melted and poured into hollow pieces of bamboo to form rolls, and is sold in this form.\*
- \*1197 Tingry noted its production from trees growing in Siam and China, describing it as a dry, solid, compact, hard, opaque, inflammable substance, and gave it the alternative name gum guttae;\* whilst Watin referred to it as la resine gutte.\*
- 'Gum guttae' \*1198 Stalker and Parker, Watin, and Vanherman \*1199 illustrated its use in making coloured lacquers, the first \*1200 quoting a price of 6d. per ounce for the best quality;\* but otherwise it was used only as an artists' water colour, \*1201 and was mentioned by Dossie only in this connection.\* In 1802 Lewis Berger had a stock of 18 lb. 'Powder Gambouge' valued at 2s. per pound, his stock rising to over 150 lb. in 1806 when he priced it at roughly 5s. 4d. per pound; but by 1810 had only about half this quantity in stock, half of which was valued at a rate of 4s., the 'Fine Gambouge' forming the balance being costed at 6s. 6d.\*
- \*1202 These prices are not far removed from those given by John Phillips, who indicated the cost of the substance as 8s. 8d. and 8s. \*1203 in 1812 and 1821 respectively.\*

## RED SANDAL WOOD

- Tingry's later editor described the use of the red dye which may be extracted from red sandal wood (otherwise known as red saunders wood) in lacquers. He gave the species from which it was obtained as Pterocarpus santalinus growing in India and Ceylon, indicating that the bright red timber darkened on exposure to air, yielding a dye soluble only in alcohol.\*
- \*1204 Ure noted that the timber (discussed in Chapter II below in connection with graining), which was imported from Calcutta in logs, was much used for dyeing and occasionally for turning, but evidence for its common use in lacquers is elusive.\*
- \*1205

## SAFFRON

The yellow dye obtained from saffron has already been described in connection with yellow lake pigments above.

## TURMERIC

This too has been described above in connection with yellow lake pigments.

SIZES, CASEIN,  
AND WATER-SOLUBLE  
GUMS

The distinction made between gums, which are water soluble, and resins, which are not, has already been mentioned in connection with the latter class of substances. In general, however, although used for various fine-art purposes, gums found little or no application in house-painting, animal glue sizes of varying quality being used in their place. Nevertheless, they are briefly described below, since a limited number of references to their employment may be found.

Gums

GUM ARABIC

Gum arabic occurs as an exudation on various species of Acacia growing in Senegal, the Sudan, and northern Sahara, and appears to have been an article of commerce since classical times.\* Of the several varieties available, that known as gum Senegal was regarded at least during the late nineteenth century as the best for use in the preparation of artists' water-colours.\* Gum arabic is generally encountered in the form of roundish globules, ranging from an almost colourless to brownish in tint, which may be transparent or nearly opaque;\* and, being almost completely soluble in water, is thus a true gum.

\*1206

'Gum Senegal'

\*1207

\*1208

\*1209

\*1210

\*1211

\*1212

Stalker and Parker described the best as clear, transparent, and white in colour, observing that it would cost ls. per pound;\* and Tingry noted its yellowish-white colour, its brilliance, and brittle nature.\* In 1802 Lewis Berger had 6½ lb. of 'Pick'd Gum Arabic' in stock, valued at 2s. 6d. per pound, whilst in 1806 he had 12½ lb. of gum arabic valued at a rate of 1s. 6d. By 1810, however, he had a total stock of just over 3½ cwt. of fine and second qualities, valued at rates roughly equivalent to 1s. 11½d. and 1s. 6½d. respectively; and listed in addition nearly 4 cwt. gum Senegal, valuing it at a rate equivalent to 11½d. per pound.\* Gum arabic was used, rather surprisingly, by Dossie as a constituent of a drying oil for coarse work;\* but this seems exceptional, and no other references to its possible use in house-painting have been noted.

## GUM TRAGACANTH

- Another true gum, gum tragacanth, exudes from several species of Astragalus growing in the mountainous regions of Asia Minor, Syria, Iraq, and Iran, and is obtained in the form of horny strips or long roundish pieces.\* Tingry described it accurately, observing that it is more or less white and inodorous, and swells to a mucilage in water.\* Its main use appears to have been in the printing of fabric.\* Although D'Aviler suggested the use of gomme adracanthe in alcoholic solution for application to joinery, it seems likely since gum tragacanth is insoluble in this medium that his intention was rather to recommend the use of dragons blood (sang-dragon) as a spirit stain.\*
- \*1213  
\*1214  
\*1215  
\*1216

## Sizes

- Size is an impure form of gelatin, containing also a similar substance known as chondrin.\* It is manufactured by boiling bone, horn, or other animal matter in water, and evaporating the product to dryness, a full description of the entire process as practised during the mid-nineteenth century being given by Ure.\* Throughout the period considered, different qualities of size were in use, Watin, for example, distinguishing colle de gants, colle de parchemin, colle de brochette, and colle de Flandres, the last, he observed, being the variety used especially for decorating.\* For present purposes, however, the sizes employed may be divided into three categories: isinglass; parchment size; and common size.
- \*1217  
\*1218  
\*1219

## ISINGLASS

- First quality size, said by Church to consist of nearly pure gelatine, was made from the air bladder and other selected parts of the sturgeon inhabiting the Black Sea and coasts of Denmark,\* although Dossie simply described it as made from the cartilages of some large fish.\* Stalker and Parker noted that 'the best was that 'which is the clearest and whitest, freest from yellowness', adding that it was 'if good, worth 3 or 4d. the ounce' although it was more cheaply available, they suggested, by the pound.\* Dossie described the preparation of isinglass size by boiling  $\frac{1}{4}$
- \*1220  
\*1221  
\*1222

ounce of beaten isinglass in 1½ pints of water until it had dissolved. The solution was to be strained whilst hot, and in that state formed a strong size. For a weak size an equal part of water was to be added.\* Tingry, on the other hand, who described the product as fish glue, or ichthyocola, directed that the 'membranous matter that furnishes it' should be boiled in water until a cooled sample set to a trembling jelly.\*

\*1223

'Fish glue', or  
'ichthyocola'

\*1224

Although Nicholson remarked that isinglass was too expensive for use in distemper,\* Dossie mentioned its employment in the finer parts of good quality work;\* and Sir William Chambers recommended that the cove in the Saloon of the Casino at Marino House near Dublin should be 'done with Izing glass & flake white' in order that they should be of a more brilliant white than the entablature and other white elements.\* It seems likely, therefore, that isinglass may have been used on occasion in very high quality interiors.

\*1225

\*1226

\*1227

#### PARCHMENT SIZE

Tingry described size of the second quality as made from glovers' clippings or parchment. Waste pieces of these high grade leathers were, he indicated, soaked in warm water for twelve to fifteen hours and then boiled for five or six.\* Dossie too described size made from glovers' leather, mentioning that it was used for finer purposes;\* whilst Watin directed that clippings of white sheepskin should be boiled in water for three or four hours to make la colle de gants. La colle de parchemen, on the other hand, was to be prepared by boiling one pound of parchment in six pints of water for four hours until the liquor was reduced by half. The solution was then strained and allowed to cool to a strong jelly. A further pint of water could be added to make a less strong size, or four pints to make a weak size. He also described la colle de brochette made from common parchment, observing that it was less expensive and only used for gross work.\*

\*1228

\*1229

\*1230

Nicholson specified the use of parchment size for

\*1231 distemper,\* and Watin indicated that it was used when one  
\*1232 wished to varnish or gild on top.\*

COMMON SIZE

Although on occasion the finer qualities of size may have been employed for house-painting purposes, it is clear that far cruder products were in everyday use. Dossie described common size as made by boiling leather  
\*1233 in water,\* and Tingry observed that it was simply common glue made by boiling skins for three or four hours in eight parts of water making a strong jelly. A further two parts of water could be added, he remarked, to make a size of moderate consistence. La colle de Flandre (described by Watin as the variety especially used in decorating)\* was, he indicated, made by boiling animal skins.+  
\*1234 +1235

Emerton gave directions for the preparation of 'Size the Plaisterers use in White-washing', indicating that 'A  
\*1236 Pound of Glue boyl'd, will make two Gallons of Size';\* although Reynolds used the same quantity of glue in a single  
\*1237 gallon of water.\* An item for 'spetches' in an account of about 1800 for painting the Mansion House in Doncaster suggests that size was often prepared on site from off-cuts of leather,\* but it is also apparent that common size was often purchased in liquid form, two strengths being commonly available. Salmon, for example, referred to  
\*1238 single size at 1d. per quart, and double size at 2d.;\* although the Builders Price-Book merely listed 'Size' at a rate of 4d. per gallon, a price equivalent to that of Salmon's single size.\* This probably equates, therefore, with Emerton's formula, which is in any case the proportion generally used today, but the precise relationship of this with double size is not made explicit by any of the eighteenth-century sources noted. In Rivington's Series of Notes on Building Construction published in the late nineteenth century, however, it was indicated that double  
\*1240 size 'is boiled for a greater time so as to be stronger'.\* A clue to its specific use in house-painting is given by Phillips, who referred to 'Double size, used for painting new work first'; and he also gave details of the movement  
\*1241

of prices during the late eighteenth and early nineteenth centuries. From 1760 to 1790 he gave the same rates as those already mentioned for single and double size (giving also rates per firkin of 1s. 6d. and 5s. respectively), whilst between 1790 and 1803 he quoted 2s. 6d. and 6s. 6d.\*

\*1242 The latter price receives corroboration from the rates equivalent to 6s. 6d. and 7s. at which Soane was charged

\*1243 for double size in 1803.\* Later prices recorded by Phillips were 3s. 8d. and 7s. 8d. in 1812, falling back

\*1244 slightly to 3s. 6d. and 7s. 6d. in 1821.\*

#### CASEIN

#### Casein

The complex acid substance casein is present to the extent of about half an ounce per pint of milk. It is soluble only in alkaline conditions, and this property may be utilised in the preparation of a washable paint by mixing skimmed milk or prepared casein with lime and water. On exposure to atmospheric carbon dioxide the alkaline lime is gradually converted to neutral calcium carbonate, thus setting the casein free in its original form as an insoluble binder. This property has been known since early times, and instances of its exploitation during the period being considered are described in Chapter II below.

## CHAPTER II

### PAINT MANUFACTURE AND APPLICATION, VARNISH, GILDING, AND IMITATIONS

Having surveyed the materials which were economically available to the house-painter during the period extending from the late seventeenth century to the early nineteenth, it is possible to examine the way in which these were made up into paints and varnishes and how these products were applied as decorative finishes. The two most common painting mediums in use over the whole of this time were oil and water, and formulae for each of these are accordingly described first. The choice between them in any given instance depended on several factors, including their relative cost, the situation to which they were to be applied, and the finish colour required, since, as will be apparent from the descriptions given above of the tinting pigments employed, their properties varied widely. This imposed major constraints on the painter and decorator, their effect with respect to the use of colour in particular being discussed at greater length in Chapter III. As a general rule, however, ceilings and stucco walls in common interiors would have been decorated using water-based paint, whilst joinery would be painted in oil. In finer rooms the latter might also be used on walls and ceilings, except where the use of water-based distemper was desired for a particular purpose, and could be made having varying degrees of sheen, more glossy formulae finding favour during the earlier part of the period, and a fashion for matt paintwork prevailing from the mid-eighteenth century.

Besides oil and water, varnish, generally employed simply as a transparent finish, was also used to a limited extent as a paint medium, especially on the Continent and for furniture. Formulae and its application are therefore next discussed, after which gilding is considered and the techniques available described in detail. Finally, comprehensive treatment is accorded to the imitation of various natural materials in paint, a branch of the decorator's trade in which oil and water paints, varnish, and gilding



all played an important part, and which, perhaps, sums up the height of technique in the manipulation of all these. It was practised most popularly during the first and last parts of the period covered in this study; and, since the names applied to many of the timbers and marbles imitated are now obscure to the non-specialist in these matters, a glossary covering a large number is appended. The subject of paint colour itself, however, is reserved for Chapter III.

\*1

To many it may be a matter for some surprise that oil paint was used in house-painting during the seventeenth century. However, its employment was firmly established before the Civil War, and the accounts of 1638 for painting at Ham House, Surrey, for example, contain a number of items for oil paint;\* whilst other references made below will serve to show conclusively that by the closing years of the century it had come to be the norm on wainscot and other joinery elements. In general, the basic concept of oil painting was very similar to that still prevailing today, priming being succeeded by one or more undercoats and a finishing coat, although often, especially during the early part of the period under review, there was less specialised differentiation between coats, and the finish itself was very different from the high gloss paints of the present. The formulae in use, and the methods by which oil paint was prepared are discussed first, after which attention will be turned to its application, including the preparatory work necessary in the way of knotting, stopping, and rubbing down, and the types of brush and other utensils employed. Finally, the paint systems in use will be summarised, and their relative costs described.

Paint manufacture  
and formulae  
Preparation  
of the paste

The first stage in the preparation of oil paint was to incorporate the pigments required separately with the oil, making a stiff paste similar in character to the form in which artists' oil colours are still supplied today. Apart from the burning of lamp black to reduce its greasiness mentioned in the description of it in Chapter I above, no preliminary treatment of pigments was generally considered necessary for house-painting; and although John Smith devoted a chapter to the removal of coarse particles by washing or levigation, he concluded by remarking,

\*2

'unless you intend to bestow some cost on a piece, you need not be at the trouble to wash [i.e. levigate] your Colours, but use them for coarse ordinary work, as you buy them at the Shops.'

Although at present it is more or less impossible to provide detailed figures for the particle sizes of the pigments

employed, it may be observed that some of these, for example indigo and Prussian blue, were naturally much finer than others. However, quite apart from the use of levigation in the preparation of the finer grades of whitening (which have already received attention), it is clear that at least by the early nineteenth century, pigment manufacturers were given attention to this matter. In 1831, for example, Lewis Berger was screening his finest carmine and drop lake No. 2 through a '100 sieve', whilst for other pigments including rose pink, French green, azure blue, and York brown a '68 sieve' was used.\* Vanherman, moreover, employed a '45 hole wire sieve' in the manufacture of his 'Impenetrable or Anti-corrosive Paint' (an emulsion intended for external use) and a '60 hole wire sieve' for his interior 'Aromatic Paint', which suggests this was regarded as a reasonable standard for inside work.\* All these are, of course, much coarser than the screens used for many modern pigments.

The main function of paint grinding is to ensure thorough 'wetting' of the pigment by breaking down clumps of particles and achieve their even dispersion in the oil medium. This was commonly effected by means of a slab and muller, a third tool known as a voider being used to remove the ground paste from the slab. This process is illustrated on several trade cards, including that of the Bethnal Green oil and colourman, J. Sholl junior, a detail from which is illustrated.\* John Smith described the tools and procedure fully:

\*Fig. 5.

'the Stone must be a hard... [Rance,] Marble, [or some other] of a close grain [in the early nineteenth century, slate was said to be unsuitable]\*, ... about a foot and half square, and so thick, that its weight may be sufficient to keep it fast and steady, and not apt to be moved when Colours are grinding on it.'

'The Muller is a pebble Stone, of the form of an Egg, the bigger end of which is to be broken off, and with sharp Sand or Emery, it must be ground smooth and flat [on some other hard, flat Stone; and the Edges of it must be well rounded off, that the Colours may the better

slide under it when it is moved round]: this Stone ought to be about two Inches Diameter, or [three] at most, on the flat end, and about five Inches high, that so you may command it the more easily in the time of grinding.'

'To these belong a Voider, being no other than a Lanthorn Horn, about three Inches one way, and four the other; this Voider is to clear off the Colours from the Stone when ground, and also to keep them together in the time of grinding when it spreads too much.'\*

\*6

'When you come to grind Colours, let your Grinding-stone be placed about the height of your middle; let it stand firm and fast, so that it joggle not up and down; then take a small quantity of the Colour you intend to grind (two spoonfuls is enough) for the less you grind at a time, the easier and finer will your Colour be ground: lay this two Spoonfuls of Colour on the midst of your stone, and put a little of your Linseed Oyl to it, (but be sure you put not too much at first) then with your Mulier mix it together a little, and turn your Mulier three or four [five or six] times about, and if you find there be not Oyl enough, put a little more to it, [and grind it] till it come to the Consistence of an Oyntment; [or appears free from any sort of lumps, and smooth as the most curious sort of Butter;] for then [when stifish,] it grinds much better and sooner than when it's so thin as to run about the Stone: You must oftentimes, in the grinding, bring your Colour together with a Piece of Lanthorn Horn, and with the same keep it together in the middle of your Stone; when you find you have ground it fine enough, by the continual Motion of your Mulier about the Stone, holding it down as hard as your Strength will permit (which you must also move with such a sleight, as to gather the Colour under it) and that no knots nor grittiness remains; but be as fine even as the Oyl itself, then with your Horn cleanse it off the Stone into a Galley-Pot, Pan, or whatever else

\*7 you design to put it into, and then lay more Colour  
on your Stone, and proceed to grinding as before'.\*

Tingry added a further hint, noting, 'the absorption of  
the oily fluid, which becomes greater as the division of  
the parts is completed requires the addition of more  
\*8 colour to bring the mixture to a proper consistence'.\*

\*Fig. 6

This may be seen clearly on the trade card of the Gloucester  
painter and gilder, William Hardwick, a detail from which  
is reproduced.\* The process was undoubtedly responsible  
for a great deal of the lead poisoning with which the  
eighteenth-century painting trade was beset, on account  
of the inhalation of dry white lead powder by those engaged  
in grinding it into oil, a fact recognised at least by 1796  
when details of a French arrangement to protect the opera-  
tive by means of a hood and heat convected air extraction  
\*9 system were published by the Society of Arts.\*

The hand process was clearly laborious when large  
quantities of paint were required, and in 1718 Marshall  
\*10 Smith took out a patent\* for a 'Machine or Engine for the  
Grinding of Colours, to be used in all kinds of Paintings...  
usually Ground with a Muller on a Flatt Stone, by Motion in  
the Mechanicks, exactly Imitating those of the Handes', but  
no details of his invention are given in the specification,  
and it is by no means certain that it was successful.  
Within a few years, however, considerable developments had  
taken place, and improved processes were in commercial use.  
Thus, seemingly in 1741, Elizabeth Emerton advertised that  
she was continuing the business of her late husband Alexan-  
der Emerton (to whom reference has already been made above  
in connection with Prussian blue) claiming that as her  
colours were,

'ground in Horse-Mills, of which there is not the like  
in England, they are prepared in much greater Perfection,  
and sold considerably Cheaper than by any of the Trade,  
that have not such Conveniencies, but grind their Col-  
ours in Hand-Mills, or upon a Stone, with great  
Expence and Labour.'

\*11 'One Pound of Colour ground in a Horse-Mill, will paint twelve Yards of Work, whereas Colour ground any other Way, will not do half that Quantity.'\*

\*Fig. 7 The mill is illustrated on the trade card and 'DIRECTIONS for PAINTING' issued by her successor, Alexander Emerton's brother Joseph, the British Museum copy of which\* is dated to 1744 by a bill made out on its reverse; whilst another illustration of it heads a late eighteenth-century card issued by the same firm when it had become Emerton and Manby.\*

\*Fig. 8 Although it has been suggested that this was a machine used for crushing dry pigment,\* it seems clear from Elizabeth Emerton's advertisement that the mill was used in the production of paste, and indeed Dossie writing only a few years later observed:

\*12

\*13 'For coarser work, the colours demanded in great quantity are ground by hand or horsemills with the oil, and the others on a stone with a muller'.\*

Later still, other developments took place. It is worth noting, for example, that in 1804 the Society of Arts illustrated a rotary hand mill in their Transactions,\* although this technique was not taken up in George Pollard's patent grinding mill of 1824, which employed a flat slab and batteries of mullers which could be operated by 'any suitable power',\* and still later Ure illustrated a paint mill employing a millstone type mechanism.\*

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\*15

\*16

Throughout the period examined in this study, commonly used pigments could be bought at the colour shops either in powder or in paste form. John Smith suggested:

\*17 'Those that list not to be at the trouble of grinding Colours themselves, may have of any sort,... ready ground, at the Colour-Shops, at reasonable rates [either in smaller or larger Quantities as they have Occasion, from an Ounce to any weight they desire]';\*

and Alexander Emerton's colour list, published by Salmon in 1734, shows that he was supplying ready-mixed tints by the

\*18 pound weight.\* That these were in paste form and had to  
be diluted with oil for use is made explicit in his  
\*19 'Directions for painting'.\* Stalker and Parker, however,  
indicated that distilled verdigris, brown pink, and lakes  
were preferably purchased in powder; whilst, they observed,  
\*20 vermilion, carmine, smalt, blue bice, massicot, and red  
orpiment were generally sold in that way.\* Pincot recom-  
\*21 mended that red lead and lamp black should be purchased  
dry,\* and Tingry's later editor suggested that the finer  
\*22 pigments were better ground in oil oneself, instancing  
vermilion and verdigris.\* Of these pigments, it will be  
remembered that at least one, blue bice, was best used as  
a distemper pigment; some, such as vermilion, were liable  
to adulteration which could be better detected in the dry  
state; and others did not keep well once ground, having a  
tendency to settle out of suspension. Each circumstance  
would provide a sound reason why procurement in paste form  
was to be avoided. Otherwise, ground pigments could be kept  
for many years, a convenient practice pointed out by John  
Smith to prevent a man 'Daubing of himself too often by  
grinding of Colours'. To effect their storage he recom-  
mended they,

'be put up and tyed close in Ox Bladders, or in the  
Bladders of Hogs or Sheep, according as your quantities  
are; this will preserve them from drying or spoiling  
a long time together.

'I remember I had a parcel of Colours given me in the  
year 1661. by a Neighbouring Yeoman, that were as he  
said, left at his House by a Trooper, that quartered  
there in the time of the Wars, about the year 1644.  
This Man was by profession a Picture-Drawer, and his  
Colours were all tyed up in Bladders, according to  
the Method before prescribed, and when I had opened  
them; I found them in a very good condition, and to my  
thinking as fit for use, when mixt with a little fresh  
Oyl, as if they had been but very lately ground,  
though they had remained in this condition about  
seventeen years.\*'

\*23

\*24 The practice was also advocated by Dossie,\* and bladders of colour still survive in the effects removed from the studio of J.M.W. Turner which are now at the Tate Gallery; whilst bladders are illustrated in the trade card of William Jordan, thought to date from 1792.\* Larger quantities of paste were preserved under water, Emerton, for example, recommending in his 'Directions',

\*Fig. 9

\*25 'if you have any Paint left, put Oyl or Water over it, and it will keep several Years.\*'

\*26 Tingry's later editor also referred to this method, describing how to remove the head from the wooden casks in which London white lead was supplied, and the preservation of any unused paste by covering it with an inch of water.\* An illustration of such a cask is perhaps provided by the trade card of the London colourman, James Stone,\* whose premises in Bishopsgate could be recognised by the sign of 'the Olive Tree & Colour Barrel'.

\*Fig. 10

Tinting

\*27 When desired, the paste, usually white lead (possibly containing extenders), which formed the basis of the paint, was tinted with other pigments in paste form, often before dilution to a suitable consistency for application. Both John Smith and Pincot, for example, suggested this order of procedure;\* but, no doubt, the colour would also be adjusted subsequently in many instances.

Dilution of the paste

\*28 John Smith recommended the addition of oil until the colours 'be so thin as not to let the ground on which they are laid be seen through them', but at the same time cautioned against applying the paint in too thick a state. On the other hand, he warned, painters commonly over-thinned paint to save the cost of paste.\* Tingry, following Watin, provided a slightly different criterion, advising that when diluted 'the colour on being taken from the pot ought not to drop from the brush when turned round two or three times in the hand, raising it obliquely to check the thread which is formed'.\* Both pieces of advice are of practical use in illustrating the nature of the paint prepared for application, and possibly of more immediate help than the few precise

\*29



details of quantities which are available.

In considering these, it must be borne in mind that paste prepared by different painters or suppliers might have varied somewhat in its consistency; and also, as D'Aviler instanced with yellow ochre, some pigments required more oil to make them workable than others.\* In fact only Watin seems to have given a complete specification for dilution, although this was in connection with a priming mix rather than an undercoat or finish. 14 ounces of ceruse required, he said, 2 ounces of oil for grinding, and 4 ounces for dilution;\* but his formula cannot, of course, be used directly in the reproduction of eighteenth-century paint, since the characteristics of the particular ceruse employed would be important. Nevertheless, the quantities are a most useful indication of the general consistency aimed at.

For thinning his proprietary tints, ground presumably in a horse-mill, Alexander Emerton specified a quantity equivalent to  $\frac{1}{3}$  of a pint of oil per pound of paste;\* and Parker in his patent of 1812,  $\frac{1}{4}$  of a pint per pound (for his green colour), a figure matching Watin's formula exactly.\* In contrast, Tingry's later editor gave a figure which seems very high, stating that in general the equivalent of  $\frac{3}{5}$  to  $\frac{4}{5}$  pint were generally added to each pound of ground white lead.\* These figures may be compared with the figure close to  $\frac{1}{7}$  of a pint per pound for finishes in the model Specification for Repainting Work issued by the Lead Industries Development Council in 1939, bearing in mind that for these a mixture containing a small proportion of oil of turpentine, which would improve the workability of the paint, was used.\*

The addition of oil of turpentine in this way was also practised from an early date. John Smith, for example, referred to it as being added by some to paint in the process of dilution to assist in drying, but added that for exterior use it would not then resist the weather so well, a point echoed by Crease.\* D'Aviler too, in describing the dilution of white lead paste, gave pure oil or a mixture of

\*37 oil with an equal part of oil of turpentine as alternatives.\*  
By the mid-eighteenth century, however, Dossie referred to  
the practice as if it was a matter of course, saying that  
after grinding the colours were put in pots, 'and there  
mixed with oil of turpentine and drying oil, according to  
\*38 the particular purposes to which they are employed';\* and  
it must be certain from the later literature discussed  
below that in succeeding years the addition of oil of  
turpentine was the norm. Earlier, however, the position  
is less clear cut. In Emerton's 'Directions', which were  
clearly envisaged as applying to interior work, no mention  
\*39 of it appears at all;\* and although this in itself may not  
be regarded as significant, John Smith's rather negative  
suggestion for its employment, albeit possibly in an exter-  
nal context, will not be forgotten. It is also worth  
remark that since the degree of gloss with which the paint  
film dries falls off with increasing proportions of oil of  
turpentine (a fact specifically noted by Tingry's later  
\*40 editor),\* thinning with mixtures containing it might have  
been less widely practised during the late seventeenth and  
early eighteenth centuries when glossiness seems to have  
been a desirable attribute. On this basis, the change from  
wainscot to stucco in interiors, which is discussed in  
Chapter V, may have been of considerable significance,  
glossy paint probably being considered less appropriate  
for the latter at the same time that Emerton (whose method  
will receive more detailed consideration below) was cer-  
tainly attempting to maximise the glossiness of his paint  
on wainscot. A similar desire for a good sheen could of  
course explain Dossie's remark that oil of turpentine was  
\*41 sometimes adulterated with rosin;\* but from the purely  
technical literature there is little to suggest directly  
where paints containing oil of turpentine would, or would  
not, have been used in interiors during the first half of  
the eighteenth century, although later the position is much  
more explicit.

The addition of oil of turpentine has obvious advant-  
ages in making oil paint less viscous and more easily  
applied. Moreover, during the late seventeenth century  
John Smith, as mentioned in the last paragraph, had

suggested its addition made for quicker drying. This view  
\*42 was shared by Dossie,\* although the early nineteenth-century  
\*43 writer, Crease, dismissed the idea as erroneous.\* Clearly  
though, the oil of turpentine would evaporate fairly rap-  
idly, increasing the apparent speed of drying in the early  
stages and leaving a paint film less thickly bound with oil.  
A related reason for the use of oil of turpentine was sug-  
gested by Butcher, who indicated that a mixture of it with  
linseed oil was used where nut oil, preferable for a pure  
\*44 white, was too expensive,\* his idea no doubt being that the  
elimination of half the oil would reduce its yellowing  
effect. Hence, although as late as 1812 the American author  
Hezekiah Reynolds was still recommending the addition of a  
mere one part of oil of turpentine to forty parts of linseed  
oil for interior work, European practice for many years  
\*45 seems to have been to use it in much greater proportions.\*  
Watin, for example, stated:

'Les couleurs broyées à l'huile, s'employent quelque-  
fois à l'huile pure, plus souvent à l'huile coupée  
d'essence, & très-souvent avec l'essence de térébenthine  
\*46 pure.'\*

The last formulation referred to the special finish known  
as flatting to be discussed in a moment, but for the lower  
coats Watin generally specified one part of oil of turpentine  
\*47 to three of oil.\* The proportions usually recommended by  
later English authors in which the two should be combined  
for ordinary finishes are either one part oil of turpentine  
to two parts of oil, or in equal quantities, although in one  
particular case Nicholson suggested a formula containing 2/3  
\*48 oil of turpentine.\*

Although no reasons for the choice of proportion of tur-  
pentine to oil seem to be put forward in any given instance,  
and at first glance they seem to have been employed inter-  
changeably in both undercoats and finishes, it is neverthe-  
less possible to detect a noticeable pattern in their use,  
since general practice seems to have been to dilute succes-  
sive coats with oil and oil of turpentine mixed in uniform  
proportions, or to increase the quantity of the latter layer

by layer. Thus, for new inside work Butcher primed using  
1/3 oil of turpentine, undercoated with the same, and  
\*49 finished using 1/2 oil of turpentine;\* Pincot, again for  
new interior work primed in size (see below), used pure  
oil for thinning the undercoat, and used 1/3 oil of tur-  
\*50 pentine for the finish;\* whilst Nicholson primed using  
pure oil, added a very little oil of turpentine to the  
undercoat, and employed 1/2 oil of turpentine in his ordin-  
ary finish, succeeding this where desired with the finish  
\*51 already mentioned containing 2/3 oil of turpentine.\* The  
only exceptions so far encountered to this seemingly general  
rule are provided by a pure oil of turpentine primer pro-  
posed by Tingry, which will receive further consideration  
below, and the use made by Pincot in a repainting specifi-  
\*52 cation of pure oil of turpentine to thin his undercoat.\*

Selection and  
use of driers

John Smith and Watin made it clear that it was only  
some pigments which needed the addition of a drier, the lat-  
\*53 ter particularly noting stil de grain and the blacks.\*  
Nevertheless, the addition of driers or use of boiled oil  
seems to have been common throughout the period being con-  
sidered (though as with oil of turpentine, no reference to  
their use appeared in Emerton's 'Directions'). Tingry's  
later editor, for example, cited yellow ochre as requiring  
more drier than chocolate, olive, yellow, blue, or brown  
\*54 colours, suggesting its addition to all these was the norm;\*  
John Smith recommended the use of one part of boiled oil  
with three parts of raw oil even for colours such as umber,  
verdigris, and red lead when it was not strictly necessary,  
\*55 although here in order to increase their lustre when dry;\*  
and Dossie described the practice of adding lead acetate  
or zinc sulphate as of dubious efficacy, but generally  
\*56 practised.\*

Reasons for the choice between boiled oil and solid  
driers in any particular instance are not explicitly stated  
in the published literature examined in connection with the  
present study, although Watin suggested the use of litharge  
for dark colours, zinc sulphate for light colours, and  
\*57 boiled oil for yellows and greens.\* John Smith on the other  
hand, treated the use of boiled oil as the most obvious

choice, describing zinc sulphate in terms suggesting its more occasional use, but it seems quite likely he may have been referring here primarily to practice for exterior work.\* Crease indeed described boiled oil as the most proper for outside purposes, although this statement does not of course necessarily rule out its use internally in addition;\* but otherwise Nicholson is the only author to mention boiled oil in a formula, this time specifically for external application.\* From this rather negative evidence, especially taking into account the fact that, except for greens and fairly dark browns, boiled oil would soon discolour interior paint, a matter of particular significance during the second half of the eighteenth century when extreme delicacy of tint was sought, it seems plausible to suggest that boiled oil was not generally used for interiors during this period. The slightly greater lustre it would impart, however, could well have encouraged its employment on wainscot and joinery of dark colour at an earlier date, and this may have persisted on such elements as brown-painted doors and skirtings.

Apparently confirming the obsolescence of boiled oil for interior work during the latter part of the eighteenth century, the use of driers in solid (no doubt, paste)\* form is exclusively and consistently mentioned by later English writers. It is, moreover, possible to see fairly clearly the way in which a choice was made between these. Red lead was used in priming coats and sometimes to a small extent in undercoats, as may be seen, for example, in formulae given by Pincot, Butcher, and Nicholson; although in addition Butcher used it in black paint, and it seems quite likely therefore that it may also have been employed in the darker browns.\* For finishes, however, zinc sulphate seems to have been the most generally employed drier, being mentioned by writers from John Smith onward, although Watin and subsequent authors reserved it for lighter tints, using the more or less comparably priced litharge for the darker shades.\* Mixtures too enjoyed application, and amongst other authors Nicholson seems to have favoured these, recommending in one case two parts of zinc sulphate with one of litharge, a suggestion he later amended to equal parts of each. For

fine whites, on the other hand, he advocated the use of lead acetate, which, as already suggested in the article dealing with that substance above, seems to have been reserved for high class purposes since it was considerably more expensive than either litharge or zinc sulphate.\*

\*64 Whichever drier was used, however, Watin stipulated it should be added immediately prior to use of the paint.\*

\*65

With regard to the quantities in which these substances were employed, earlier writers do not seem to mention amounts; but half an ounce per pound of paste was generally recommended by authors from Watin onwards, and Tingry's later editor indicated that the amount used should not normally exceed this figure, which is almost precisely comparable with those given in the Lead Industries Development Council model Specification.\* On the other hand, less was often used. Nicholson recommended use of a walnut-sized amount of sugar of lead (which is in any case more energetic than the other commonly employed substances) for twenty pounds of paint (roughly equivalent to 1/10 ounce per pound);\* and general practice seems to have been to reduce the amount of drier in successive coats. Thus, for example, Butcher recommended the addition of 1 ounce of zinc sulphate, 1 ounce of litharge, and 1 ounce of red lead to each 6 pounds of white lead paste for priming; 1 ounce of zinc sulphate, 1/2 ounce of litharge, and 1/4 ounce of red lead to the same quantity of paste for the second coat; and zinc sulphate alone to the third.\*

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Indeed, only in this formula and in one of Pincot's\* is drier in the last coat specified; and, bearing in mind Watin's precept that drier should be used sparingly in whites,\* it seems quite likely it was sometimes omitted altogether from finishes, which could no doubt in any case often be allowed longer to dry.

#### Oil primers

The first coat of paint on a virgin surface, known throughout the period under consideration and today as priming, was of a rather special nature, and generally thinned with a rather greater quantity of oil than subsequent coats. This was, no doubt, in recognition of the fact that, as Thomas Wilsford remarked in his Architectonice 'the priming spends most colour (if the wood be dry) but is

\*71 usually the worst'.\* John Smith too remarked,

'if the Colour to be mixt be your priming Colour,  
(that is the first Colour you lay on) it ought to  
be made very thin, that it may have Oyl enough to  
pierce into the Wood, which is much for its pre-  
\*72 servation';\*

and William Leybourn observed in A Platform for Purchasers,  
A Guide for Builders, a Mate for Measurers that the first  
\*73 coat would spend as much oil as the two succeeding coats.\*  
Although it will be remembered Watin suggested a fairly  
normal rate of dilution, common practice seems to have been  
to increase the proportion of oil, and the early nineteenth-  
century author James Crease observed that the priming should  
\*74 be made 'tolerably thin' with oil;\* whilst a marginal note  
on the British Museum copy of Joseph Emerton's 'DIRECTIONS  
for PAINTING'\* seems to suggest that a pint of oil should  
be added to each pound of paste.

\*Fig. 7

Pincot and Nicholson suggested the use of neat oil for  
the dilution of priming coats; although Watin proposed a  
mixture containing one-quarter part of oil of turpentine,  
\*75 and Butcher one-third.\* Exceptionally, Tingry advocated  
the use of pure oil of turpentine for internal work in  
diluting the paste for the 'first stratum', since, he  
believed, in the first place it would carry off the odour  
of the oil, secondly it would tend to make the later colours  
more brilliant, and thirdly it possessed hardening properties.  
It was also beneficial, he suggested, when added to the first  
coat on ironwork, since it aided adhesion of the paint to  
\*76 the bare metal.\*

On plaster one or more coats of pure oil might first  
be applied, Smith recommending this for plaster clock faces,  
\*77 and Nicholson a coat of drying oil on stucco.\* In the for-  
mer case at least the context is external, and only the  
Continental authors Félibien and Watin referred specifically  
\*78 to the practice internally.\* No operation of this nature  
seems, however, to be itemised in any of the English trade  
price-books, although as may be seen from the summary of

\*Table (vii)

prices given below\* painting on stucco was priced separately at a higher rate than on timber in some of these, and it is not entirely clear therefore that this procedure was usual for day to day work.

\*79 Priming formulae given by authors writing up to the mid-eighteenth century differ from those later recommended, and were generally based on red ochre. John Smith, for example, recommended the use of Spanish brown on its own, and Dossie observed that this pigment was much used by house-painters for grounds and primings in coarse work.\* Leyburn on the other hand suggested its mixture with whiting, advising that:

\*80 'Painting of Outside-works; as Doors, Shop-Windows, Window-Cases, Pediments, Architraves, Friezes and Cornices, and all other Timber-works which are exposed to the Weather, ought at first setting up to be primed with Spanish Brown, Spanish White, and Red Lead (about a 5th part) to make the other two Colours to dry, well grown'd with Lintseed Oyl, will make excellent Primer'.\*

\*81 In addition, Dossie also proposed a mixture containing ochre and white lead.\* Combinations such as these are commonly encountered in seventeenth- and early eighteenth-century work, and examples have been found on the wainscots in the Marble Hall at Petworth, Sussex, (1692) and in the Saloon at Beningbrough Hall, Yorkshire, (c. 1715).\*

\*82 The photomicrograph of paint layers in a sample from the Banqueting House at Studley Royal, Yorkshire, (1728-38) shows their typical appearance.\* Besides priming, such formulae were also used for painting the backs of wainscots to prevent damp affecting the glue used in their assembly; and Neve, for example, suggested that the most effectual way to prevent failure of the joints from this cause was

\*83 'by priming over the Back-sides of the Joynts well with White-lead, Spanish-brown, and Linseed-oyl'.\* Watin too recommended two or three coats of coarse red in linseed oil

\*84 for this purpose,\* and an item appears in the Kensington Palace accounts of 1691 for 'Colo<sup>r</sup> on y<sup>e</sup> back of y<sup>e</sup> Wainscott',

\*Fig. 11



\*85 charged at 3d. per yard.\*

\*86 Watin's ordinary priming formula which contained white lead, plus presumably small quantities of paste drier\* has already been mentioned in connection with the dilution of the basic paste, and stands in considerable contrast with these earlier types. Later oil formulae are similar, invariably being based on white lead and resembling the pink lead primer of recent times. Thus, although as late as the early nineteenth century Pincot advertised that he made a 'light chocolate colour' for priming externally, he had at first recommended two coats of 'flesh colour' for new exterior work. This was made from 14 pounds of white lead and 1 pound of red lead in linseed oil, and Nicholson too gave a  
\*87 similar mixture.\* The absence of dark red primings from any of the late eighteenth- and early nineteenth-century paint samples examined in connection with the present study and described in Part Three below strongly suggests that these had been more or less superseded at least for interior purposes; and a typical example of the new type is shown in a second photomicrograph\* showing paint layers from the false ceiling at the House of Lords (1847).\* Later, for use on external ironwork, Nicholson recommended the employment of red lead with a small admixture of white lead; and for the same purpose Bartholomew referred to the application of  
\*88 'red lead paint' for the first three coats.\*  
\*89

\*Fig. 12

Size-based primers and undercoats

\*90

For internal work, however, an oil primer was not always used. Emerton, for example, observed: 'Outside Work must be primed with Oyl Primer; but Inside Work may be primed with Size';\* and Pincot too suggested:

\*91

'In new houses the inside work may be Primed with strong double Size, just stained with a little Spanish Brown, merely to see where the brush has been'.\*

\*92

Prices for 'Inside painting, twice in oil and primed in size' appear in various editions of The Builders Price-Book published by I. and J. Taylor, the first of which appeared in 1776.\* Moreover, in the later version of Emerton's 'Directions' it is suggested that plaster walls should

\*93 receive two coats of strong size before painting.\*

This practice of using size for priming was condemned by Dossie, who warned:

\*94 'Even in the case of house or coach painting, the clear-coating with size and whiting ought to be omitted; and, in its place, a coat of drying oil with some white lead and ochre... should be used as the first priming... This method would both preserve the work much better, and prevent the blistering and peeling, and in some degree, the sinking in of the colours that attend the common method.'\*

\*95 Pincot himself acknowledged that surveyors would object to the use of size in the way he had suggested, although, he protested, he had never found one who could give him a sufficient reason for this;\* and its use continued to be advocated. Reynolds, for example, directed that following other preparation work one should,

\*96 'dissolve one pound of Glue in one gallon of boiling water; add two pounds of Spanish White; and when cold, and well mixed; lay it on carefully; and even with the grain of the wood, with a clean brush.'\*

'Clearcole'

\*97 It will be observed that both Dossie and Reynolds mentioned the addition of whiting to the size, making a form of distemper. Such preparations were also used, especially in the redecoration of interiors, as a cheap undercoat which was known as clearcole, a corruption of the French term 'claire colle'. (Stalker and Parker had, however, noted use of the term 'Cold-clear' for size alone.)\*  
\*98 Prices for 'clearcole and finish' appear in Salmon's London and Country Builder's Vade Mecum (1745) and the Builders Price-Book at rates of 4d. and 3d. per yard respectively  
\*99 against 5d. for two coats of oil;\* and Martin described it as the cheapest method.\* Although whiting seems to have been the pigment most commonly employed, Nicholson, for example, referring to the preparation of clearcole from  
\*100 whiting and size, he also specified the use of white lead.\*

Pincot too provided a recipe for a white-lead-based clear-  
cole, to make which 1 pound of white lead ground in water  
was to be added to 1 quart of size 'which when chilled is  
rather thicker than cream';\* and items such as 'Clear cold  
whitelead & 2ce in Oil' appear in the accounts for the  
decoration of Norfolk House, London in 1753 and 1755.\* In  
addition, these accounts contain items showing that lead-  
based clearcole was used between undercoats and finishes,  
for example '4 times in Oil Dead white & between the Second  
& third colour a Clear cole with Whitelead';\* whilst Pincot  
advocated the application of 'a coat of single Size with a  
little White Lead ground in water, just white enough to  
see where the brush goes', between the undercoat and finish  
in new houses.\*

Although this technique resembles that deliberately  
used by Emerton to increase the lustre of the finishing  
coat (see section on gloss finishes below), it seems more  
likely that at Norfolk House at least, where the finish  
was to be flat, it was intended to prevent the uneven  
'sinking in' of the paint, a problem which, as Sir Roger  
Pratt noted, had often to be overcome.\* Like Dossie, how-  
ever, Vanherman strongly deprecated the use of clearcole as  
an undercoat in redecoration, remarking that it was,

'often detrimental; for if the sun or damp interfere,  
the first will surely blister, and the second detach  
the paint from the wood'.\*

Nicholson warned specifically that it was of no use exter-  
nally, but although he believed it was not greatly used at  
the time he was writing, it seems clear that its employment  
had been widespread, especially for cheap work.\* Pincot,  
for example, mentioned it particularly in connection with  
rooms for servants;\* and in the accounts for painting work  
at Osterley House, Middlesex, between 1772 and 1774 an item  
is to be found for, 'Clearcoal and finish in maids room'  
at a rate of 3d. per yard.\* The same price was charged for  
clearcole and finish in certain rooms at Somerset House in  
1787.\*

The colouring  
of undercoats

\*111

Watin, who stressed the need for delicacy of colour, stated as a precept that everything should be laid on a ground of white;\* but although most earlier writers, in particular John Smith, gave little or no direct advice on this matter it seems clear that practice had often been different. Samples taken from the Servants Hall at Boughton House, Northamptonshire, for example, which is known from surviving accounts to have been painted about 1700, suggest that in this instance the undercoat and

\*112

finish were both of the same brown colour;\* and, although in this particular case there was no oil primer, in an age when dark primings were the norm there would have been little point in succeeding these with a white undercoat if the finish colour was to be dark. At Beningbrough Hall, Yorkshire, too it appears probable that about 1715 at least the stiles of the wainscot in the Saloon were undercoated and finished using the same colour (here a pale grey)

\*113

above the dark red priming\* and it seems likely that both these examples represent common practice. White grounds on the other hand are also encountered, as for example in the two coats of white which form the ground for the marbling and imitation porphyry beneath the present grained finish in the Balcony Room at Dyrham Park, Gloucestershire

\*114

(now Avon), executed in 1694.\* It is extremely difficult, therefore, to suggest a general rule for practice during the late seventeenth and early eighteenth centuries, especially since Leyburn suggested succeeding his dark red priming first 'with the same Colour (but much more whiter)

\*115

for second Primer; and lastly, with fair white'.\*

Early nineteenth-century practice too seems to have been different from that suggested by Watin. Nicholson, for example, observed:

\*116

'If the stucco be intended to be finished of any given tint, a grey, light green, apricot, &c. it will be proper, about the third coat of painting, to prepare the ground for such a tint, by a slight advance towards it';\*

and Reynolds suggested the use of white 'slightly tinged

\*117 with yellow' in this way as an undercoat for straw colour.\*  
Vanherman went even further, recommending that the shade of  
the ground colour should be a little darker than the fin-  
ishing tint in order to prevent the work looking 'sheery'  
\*118 and badly covered.\* Undoubtedly this problem was more  
serious with some staining pigments than others, experiment  
suggesting that yellow ochres, patent yellow, Naples yellow,  
verdigris, and Scheele's green were particularly liable to  
produce a streaky finish. The difficulty was therefore  
most acute when using yellow or green, whilst other colours,  
including dark browns, could be made easily to cover a white  
ground in one coat without difficulty.

In general, where a specially tinted ground was neces-  
sary, practice naturally enough was to use cheaper colours  
as grounds for expensive finishes wherever possible, al-  
though D'Aviler did suggest an undercoat containing céruse  
and vert de montagne beneath a finish on garden furniture  
\*119 made from the latter alone.\* Nevertheless, Emerton, Pincot,  
Bentley, and Vanherman all recommended lead colour, a grey  
generally made using lamp black (see glossary of colour  
names in Chapter III), for a large number of greens; and  
Reynolds too used a grey made from lamp black for exterior  
\*120 green paints.\* An example of this, probably dating from  
1807-11, may be seen in cross-sections from the Drawing  
\*121 Room at Tamworth Castle, Staffordshire,\* a photomicrograph  
of a typical example being illustrated.\* On the other  
hand, Pincot also suggested the use of a light blue as a  
ground for verdigris greens, and Butcher specified Prussian  
blue and white as an alternative to grey for a similar pur-  
\*122 pose;\* but, advocating and endorsing Watin's proposal that  
white should be used as a ground for two coats of a verdigris  
\*123 green externally,\* Tingry observed that the general practice  
\*124 of painters was to make the undercoat in such a case yellow.\*  
Exceptionally, for fine greens Vanherman recommended the  
\*125 usually rather expensive French grey as the best ground;\*  
but Crease suggested the use of the dark invisible green in  
four coat work, the first two being of this colour, and the  
\*126 last two fine green.\*

\*Fig. 13

Grey has also been found beneath a blue finish of c.  
 \*127 1830 at Somerset House, London;\* and Pincot recommended  
 \*128 lead colour as a base for chocolate paint.\* Reynolds used  
 a mixture of Spanish brown and red lead as a ground for a  
 \*129 red exterior finish made using Venetian red,\* and in con-  
 nection with the finer qualities of red paint Dossie  
 referred to the common use (which he deprecated) of red  
 \*130 lead as a ground for vermilion.\* The same practice was  
 \*131 followed by Pincot in coach-painting;\* whilst Vanherman  
 recommended a ground of rose pink and Indian red for  
 \*132 crimson.\* In addition to these examples, it is worth  
 noting that Pincot used a ground of white lead beneath  
 patent yellow on coach bodies, and Tingry recommended the  
 \*133 use of yellow ochre in grounds for patent and Naples yellows.\*  
 Later, of course, patent yellow itself came to be used as a  
 \*134 ground for chrome yellow, a practice mentioned by Vanherman.\*

#### Gloss finishes

During the early part of the period under review it is  
 clear that a good gloss finish was considered desirable.  
 The advocacy by Stalker and Parker of varnish-paints on  
 wainscot will be dealt with in greater detail below, but  
 even in the context of more day-to-day practice John Smith  
 observed:

\*135 'Take notice also, That all simple Colours used in  
 House Painting, appear much more beautiful and lus-  
 trous, when they appear as if glazed over with a  
 Varnish, to which both the drying Oyl before-mentioned  
 contributes very much, and also the Oyl of Turpentine,  
 that the Painters use to make their Colours dry soon!.\*

Elsewhere, with even greater enthusiasm, he remarked that  
 the use of boiled linseed oil would add such a beauty and  
 lustre to the colours that they would 'dry with a gloss, as  
 if they had been varnished over', adding:

\*136 'Some Colours indeed don't need to have their drying  
 hastned by a fat Oyl... but yet fat Oyl [i.e. boiled  
 linseed oil] added to these also, [doth] add a great  
 beauty and lustre to the Colour.'\*

\*137 Moreover, the Hull painter John Fletcher advertised that his  
colours dried 'quick & hard with a fine Gloss';\* and in his  
'Directions' of the 1730s Alexander Emerton advocated a  
coat of hot, weak size on top of the oil undercoat, indi-  
cating specifically that its purpose was to make the paint  
\*138 look glossy.\* In these contexts, however, the term must  
be seen as a relative one within the confines of eighteenth-  
century paint technology, and clearly cannot be related  
directly to modern standards.

Besides the simple techniques already mentioned, it  
will be remembered that Dossie remarked on the frequent  
adulteration of oil of turpentine with rosin. John Smith,  
moreover, deliberately suggested its advantages in the  
production of a glossy finish, observing:

'experience teaches, that some good clear Turpentine,  
dissolved in the aforesaid Oyl of Turpentine, before  
it be mixt with the Oyl-Colours, shall make those  
Colours shine [much] when dry, and preserve their  
beauty beyond all other things, drying with an  
extream glasey surface, and much more smooth than  
Oyl alone, and shall also better resist the injuries  
\*139 of air and weather[, provided too much be not put in].'\*

Tingry too recommended the use of a similar preparation for  
interior house-painting, noting that it 'exhibits all the  
qualities of a varnish'. His formula called for 3 pounds  
of rosin to be dissolved in 10 pounds of oil by the appli-  
cation of gentle heat, after which 6 ounces of turpentine  
were to be added. This prepared resinous drying oil was to  
be allowed to stand, but was to be used fresh, being diluted  
\*140 with oil of turpentine in the normal way;\* and Reynolds  
specified the addition of a teaspoonful of rosin to each  
pound of white lead in the preparation of ice colour paint  
\*141 for interior use.\* In comparison with this, Dossie had pro-  
vided a series of formulae for resinous drying oils, observ-  
ing too that the normal boiled oil manufactured for sale  
could be much improved by the addition of sandarac resin.  
For common purposes 2 pounds of sandarac and 1 pound of gum  
arabic were to be added to every gallon of linseed oil whilst

\*142 it was being 'boiled'; and in thinning it for use it was, he indicated, necessary to use a rather larger proportion of oil of turpentine than normal.\*

\*143 Such formulae approach very closely the preparation of varnish, and indeed Félibien, probably in more of a history-painting context, had suggested the addition of varnish to paint in order to avoid the necessity of having to varnish the painting later.\* In the same way, Reynolds advocated the addition of 1 gill of Copal varnish as an alternative to the use of oil of turpentine in each gallon of oil for interior painting.\* Tingry's later editor too suggested a similar practice, indicating that an oil of turpentine based varnish (Tingry's No. 13 of which details are given in the varnish section below) could be added to finishing coats to give a greater gloss, but advised that it was better to varnish the work as a separate operation once dry.\* This last procedure had been discussed by Watin,\* and will receive further consideration below in connection with the application of varnish.

\*145 +146 Flatting

'dead white'

By the early 1740s at least, a fashion for completely matt oil paint in interiors had arisen. This was achieved by a process known as flatting in which the white lead paste was diluted with a large proportion of oil of turpentine, generally without the addition of any oil, the resultant finish being called dead white. An estimate of 1743 for the interior of 44 Berkeley Square includes an item for 'clean white done in turpentine', and a large number of items for dead white appear in the accounts for Henry Pelham's house (the part remaining now lying behind No. 22 Arlington Street) of 1745-50, and Norfolk House of 1753-6 (all of these being in London).\* By the second part of the century it had become the standard finish in high quality work, even on joinery, being ubiquitous in many accounts of the period. With only a single exception, Watin specified dilution in pure oil of turpentine for all his normal interior oil finishes;\* and prices for 'Fine flat white' appear in editions of Taylor's Builders Price-Book from the date of its first issue in 1776.\*



Flattening was generally executed as an additional coat laid on top of the ordinary oil finish, although Watin used two coats on wainscot, and Nicholson observed that large surfaces would need two coats, noting that this was an almost general rule on stucco.\* Expensive ingredients such as Nottingham white lead were often used, and it also required some skill in application, Butcher warning that it should be made up and used 'off hand; for if it stands to set, it will leave a mark' on account of the volatile nature of the oil of turpentine.\* Vanherman too indicated that speed in application was essential requiring two men on large wall surfaces,\* and, as acknowledged by Tingry's later editor,\* flattening was thus highly priced and regarded as a superior process. Skyring, for example, stipulated an additional 6d. per yard above the cost of ordinary white paint,\* and the implications of this together with other comparative prices will be seen from the list set out below.\*

\*Table (vii)

Butcher described the preparation of a flattening coat by mixing the best Nottingham white lead (paste) with pure oil of turpentine, although he suggested a small quantity of nut oil could also be added, directing that it was to be laid on 'above third colour, or second colour, as you think proper' (that is on an undercoat and ordinary finish, or on a single undercoat - see discussion of these terms below).\* Both Pincot and Nicholson also recommended the use of Nottingham white lead, the former specifying the use of sugar of lead as a drier.\* Although Butcher mentioned the use of nut oil, and the fourth and eleventh editions of the Builder's Price-Book contain an item for work 'flated with nut-oil', Nicholson remarked that, whilst sometimes employed, this was not often the case since it was rather expensive, adding that the same was true of paste ground in poppy oil.\* Use of these oils, even in a limited way, does of course serve to point what was undoubtedly one of the basic reasons for the favour accorded to dead white, quite apart from its flat finish. The low linseed oil content would clearly have minimised the yellowing effect of the medium, and hence, for example, Nicholson observed that it was,

'to be preferred for all superior work, not only for

\*158 appearance, but preserving the colours and purity  
of tint'.\*

Finally, it should be noted that although often referred to as dead white, the process was also used for finishes of various colours, no doubt for the same reasons which led to the adoption of flatted whites in the first place. French grey, blue, and greens, including 'verdi-grease green', are priced flatted in later editions of the Builder's Price-Book;\* whilst 'Dead French Gray' had been supplied at Dyrham Park in 1781,\* and flatted French grey and green had been used at Somerset House, London, in 1790.\* To these colours Nicholson provided the addition of fawn.\*

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\*160  
\*161  
\*162

Application and  
the preparation  
needed for this

The formulation of oil paint having been examined, attention may now be turned to its application and the preparatory work first necessary.

Knotting

John Smith did not mention the process of knotting, or prevention of the resin present in the knots of the timber from bleeding through the paint film and producing an unsightly stain on the finished work. The reason for this omission is not clear, since the problem would no doubt have been appreciated at the time, but is most likely to have been since his description of the painting process was conceived more in terms of exterior work.\* Alexander Emerton, however, directed that the knots in wainscot should be covered with 'Oyl Primer',\* and a similar method was recommended by Watin and Tingry, although they indicated that extra litharge should be ground into the priming, the latter author directing that it should then be applied locally to the knots.\* Red lead too was a favoured drier for the purpose, mixtures of red and white lead in linseed oil being given by Nicholson;\* whilst Butcher specified that to kill knots red lead and litharge should be applied with a small quantity of oil and a greater proportion of oil of turpentine.\*

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\*164  
\*165  
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\*167

In contrast with the oil-based formulae, aqueous preparations containing a drier bound with size were in

use. In Joseph Emerton's edition of the 'Directions', for example, a mixture of size and red lead appeared in place of the 'Oyl Primer' in Alexander Emerton's text, a possible indication, perhaps, that this had not always proved effective.\* An early nineteenth-century paint manufacturer, Thomas Bentley, too gave a similar formula, recommending that knots in new timber should be killed by the application of three parts of white lead and one of red lead in weak glue or strong size;\* and Tingry's later editor suggested employment of a strong solution of glue with red lead.\* Even Vanherman, who was extremely critical of size priming and clearcole, specified the use of red lead finely ground in water and diluted with double size for knotting, directing that two coats of this preparation were to be applied hot;\* and it is clear that such formulae represent common practice.

Other treatments were, however, advocated. Nicholson suggested a preliminary application of freshly slaked lime, which was allowed to remain on the knots for twenty-four hours before being scraped off; and also gave a pair of two-coat knotting formulae combining coats of size and oil. The first of these called for a primary layer of red lead in strong size, followed by a 'second knotting' of white and red lead in oil; whilst the second, presumably intended for better quality work where light colours were being used, required the application of ceruse in parchment size followed by white lead in oil with the addition of one-fourth part of red lead. In a later work, however, he only suggested the use of such an oil knotting on top of two coats of size as a third line of defence where there was doubt as to the efficacy of the first two.\*

In general it seems reasonable to suggest that simple knotting with red lead in size remained general practice throughout the period considered in this study, although oil-based formulae were also in use. Two coats (on occasion one of oil succeeding a layer of knotting in size) might also be employed, as is evident from the Norfolk House accounts in which items for 'twice knoted' appear.\* Besides these, however, for work of exceptionally

high quality silver leaf might be used to seal the knots, applied on a coat of gold-size. Although Nicholson is the only writer to mention this practice, suggesting its use in one instance in principal rooms, and in another reserving it for application above the undercoat if the knots persisted in bleeding through,\* an example of its employment has been found in the Saloon at Uppark, Sussex;\* and knotting with silver leaf appears also in one of the clauses of Bartholomew's Specifications.\*

Putty and  
stopping

Even the most carefully executed joinery will contain joints which require filling before the application of paint, whilst externally cracks and shakes which appear in timber which has been exposed to the weather also need stopping up to prevent the entry of rainwater. In 1668 Leybourn mentioned the practice of 'stoping',\* and John Smith directed;

'let the first business therefore be, to stop up these places smooth and even, with a [substance by the Painters called] Putty, made of Whiting and Linseed Oyl, well beaten together on the grinding-stone, with a Wooden Mallet, to the consistence of a very stiff Dow [Dough]'.\*

Pincot, no doubt speaking from experience, described putty as made by mixing whiting and linseed oil, 'as the women make a pudding, but so stiff as not to hang about your fingers, which is very unpleasant';\* and Vanherman provided a more detailed description of its manufacture. Whiting was first dried in an oven, rolled, and sifted through a 45 hole wire sieve. It was then formed into a stiff paste with raw linseed oil on a painters' stone and left until the next day, when pieces weighing three or four pounds each were beaten again. The finished product was stored in glazed pans covered with a wet cloth, but in the event of its becoming hard it could be warmed over a fire or by immersion in boiling water, and again beaten to regain its former consistency.\*

The only author noted who mentioned the use of 'white lead cement' (presumably made in a similar way to the hard

\*181 stopping of more recent times using a proportion of white  
 lead paste with ordinary putty) was Tingry;\* but there  
 seems no reason why this should not have been in fairly  
 common use. Otherwise, the only other alternative seems  
 to be the 'badigeon' mentioned by Nicholson. This was,  
 he indicated, a mixture of plaster and freestone, or of  
 \*182 sawdust with glue which was used for stopping;\* but the  
 first of these alternatives seems to stem from Watin's  
badigeon which, he noted, was used for the walls of churches  
 and the outsides of old houses to lighten them and  
 \*183 afford them the colour of new stone,\* and references to  
putty appear invariably to indicate the ordinary mixture  
 of whiting and size. Prices seem to have ranged between  
 3½d. and 4d. per pound up to about 1790, and to have risen  
 to 6d. thereafter. Salmon, for example, quoted 4d. in  
 1734, whilst Leadbeater indicated prices of between 3½d.  
 \*184 and 4d.;\* but 6d. per pound was paid at Tredegar House,  
 Newport, in 1792, and the compiler of the Builders Price-  
 \*185 Book quoted the same figure in 1810 and 1813.\* All these  
 prices are consistent with those given by Phillips in  
 \*186 Crosby's Builder's New Price-book.\*

Brushes and  
 other utensils  
 \*Fig. 14

John Smith divided brushes into three categories. Those usually used for house-painting (probably similar to that illustrated by Holme)\* were, he observed, made of hogs hair, were round in shape, and varied in diameter from 2 inches to ¼ inch. Flat hogs hair brushes, on the other hand, were used for drawing lines and in graining and marbling; whilst 'pencils' were made of a finer and smaller hair bound into quills of various sizes, set in tin ferrules, or for larger sizes bound into wooden stocks like the ordinary brushes. He emphasised the need for careful selection of pencils and brushes, observing in the case of the latter that the bristles should be fast bound in the stocks, and that the hairs should be strong and lie close together. Should they become loose, he suggested in later editions that wooden wedges be driven between the threads binding  
 \*187 them.\* Watin too discussed brushes, demanding that the bristles be straight and that they should present a neatly trimmed flat end. He divided them into two categories, those made with the hair of the wild boar alone, and those

\*188 in which this was mixed with pigs hair.\* The trade card  
 of John Morrod, a Hull brush manufacturer,\* aptly illus-  
 \*Fig. 15 trates the first stage of manufacture, whilst specimens of  
 the completed product are shown in the detail from William  
 Jordan's late eighteenth-century trade card illustrated  
 \*Fig. 9 above.\*

Although several names for house-painters' brushes  
 of this ordinary type are encountered in early nineteenth-  
 century English literature, it seems likely that these  
 cover only two basic varieties, directly related to Watin's  
 division. Tingry's later editor, for example, only des-  
 cribed two categories, the 'common brushes' which, he  
 indicated, contained coarse hairs only, and 'ground tools'  
 consisting of white and fine hair. The former were, he  
 noted, used in the application of undercoats, brushes of  
 \*189 the latter type being used for the finish.\* For their part,  
 Pincot and Vanherman differentiated only 'dusters' and  
 ground tools, the latter observing that when worn down  
 \*190 'long Hair Dusters' made the best brushes for painting.\*  
 Tingry's later editor also remarked that the common brushes  
 \*191 became finer from use.\* Furthermore, although Lewis Berger  
 stocked 'Brushes', 'Dusters', and 'Ground Brushes', the  
 first two were priced at identical rates and the last  
 category alone at a higher price, so that, for example, in  
 1806 a dozen 'No. 3' brushes or dusters were valued at 8s.  
 \*192 6d. against 10s. 6d. for the same quantity of ground brushes.\*  
 It seems most likely therefore, that the ordinary grade of  
 brush was often broken in for use by dusting down the work  
 over a period, and was accordingly often known as a 'dus-  
 ter'. An illustration of a 'dusting brush' taken from a  
 \*Fig. 16 later nineteenth-century book is reproduced;\* although it  
 seems likely that by the date of this improved methods of  
 \*193 manufacture, such as that described by Ure,\* had been  
 introduced. Another name encountered, which seems also to  
 have been used interchangeably for the cheaper quality was  
 'pound brush'. Two were supplied at Tredegar House, New-  
 \*194 port, in 1793,\* and Martin described pound brushes as made  
 from hogs hair, remarking that they were first used as a  
 \*195 duster.\* Nicholson repeated this, explaining that pound  
 brushes were thus employed 'till the soft part is worn

\*196 away;, the previous wear, he indicated, adapting it better  
'for spreading the colours for which it is afterwards used!.\*

\*197 Before using a new brush, Watin suggested it should be  
soaked in water for half an hour to remove the sawdust used  
to secure the bristles, and to swell the binding string and  
the wood;\* but no author seems to suggest the painter him-  
\*198 self binding the hairs in the way which persisted well into  
the present century,\* although with 'long hair' dusters in  
particular this might have been expected. For cleaning  
brushes after use, John Smith recommended washing first in  
\*199 clean linseed oil, followed by warm soap suds, and Emerton  
the use of soap and hot water.\* Pincot too recommended the  
\*200 use of soap.\*

Besides the large round brushes so far discussed, it  
will be remembered that John Smith had mentioned the use of  
flat hogs hair brushes for special purposes, in particular  
for graining and marbling. By the early nineteenth century,  
'varnishing  
brushes' brushes of this form were also known as 'varnishing brushes',  
and their use in both fields is discussed in the appropriate  
sections below. For painting sashes, small brushes known  
'sash tools' as 'sash tools' were used. These were probably round in  
shape, corresponding to the small hogs hair brushes men-  
tioned by John Smith, although little information about  
them is given by authors writing during the period being  
considered. Pincot, for example, merely referred to 'small'  
\*201 brushes 'for sashes',\* whilst four were supplied at Tredegar  
\*202 House in 1793,\* and Lewis Berger stocked a range of sash  
\*203 tools of different sizes.\* A later nineteenth-century  
\*Fig. 17 illustration\* shows a number of forms, but even at this  
'pencils' date all still appear to be round in shape. Pencils, to  
which John Smith also referred, were used extensively for  
imitations, in signwriting, and for other decorative work.  
Stalker and Parker described them as made from camels hair,  
and Nicholson writing much later referred to 'camel hair  
pencils', of which Lewis Berger had stocks in 1802 and  
\*204 1810.\* Watin, on the other hand, stated that pencils were  
made from badger hair, or from that of the Siberian squir-  
\*205 rel;\* but the author of the Painter's... Pocket Manual  
observed that brushes made from badger hair were seldom

\*206 used, generally being found only abroad.\* The different  
 sizes made were, as already mentioned, related to the  
 quills from different birds into which the hairs might  
 be bound, and artists' brushes are still available in this  
 form. Watin gave the extremes as swan and lark, the former  
 \*207 being mentioned amongst others by John Smith,\* whilst the  
 complete series given by Stalker and Parker ranged through  
 \*208 goose, little goose, and duck, to swallow quills.\* Of  
 these, during the early nineteenth century, Lewis Berger  
 stocked only 'Swan Quill Pencils'; but besides a few  
 'Quill Tools' had in addition some 'Com<sup>n</sup> Pencills', 'best  
 \*209 Pencils', and 'Fitch Pencils'.\* Fitched, as against pointed,  
 round pencils had been mentioned by John Smith, and were  
 also listed by Vanherman (who included too 'a few French  
 \*210 Tools', although it is unclear what these were).\*

Other painting tools and implements seem to have  
 received scant attention by writers, but in 1806 Berger  
 \*211 had a small stock of palette knives,\* and Vanherman referred  
 to 'Pallet Knives, large and small', a 'Putty or Stopping  
 \*212 Knife', 'Single or Hand Pots', and 'double Paint Pots'.\*

Preparation  
 and painting  
 procedure

\*213 The first maxim to be observed in house-painting was,  
 Pincot remarked, to 'rub it bare and lay it fair'. The  
 inexperienced on the other hand, he suggested, would more  
 generally work on the principle 'lay it on thick and some  
 will stick'.\* By far the most comprehensive account of  
 the way in which a room should be painted was given by  
 Vanherman, whose 'Aromatic paint' (an oil-bound distemper)  
 to which it more strictly applied, is described in the  
 section below on water-based paints. The work was, he said,  
 to be kotted and dusted and the floor covered, after which  
 the priming was laid on with a ground brush. New sashes,  
 however, were, he indicated, always primed before installa-  
 tion, and did not require a second priming. (In this con-  
 nection it is worth noting that during the mid-seventeenth  
 century Pratt had observed that iron and timberwork were  
 to be painted as soon as wrought; whilst in the agreement  
 of 1665 relating to the painting of Clarendon House, London,  
 it was laid down: 'The Joyners at no hand to stay for  
 priming, and the Works to be finished when once set up with



\*214 all expedition'.)\* After priming, Vanherman continued,  
a day was allowed for the paint to harden before it was  
\*215 lightly rubbed down with a pumice stone.\* The work was  
then dusted again, and stopped with putty, after which  
the 'second colour' was applied. After a further day had  
elapsed, the work was rubbed down a second time, on this  
occasion with glasspaper, again dusted, and the 'third  
colour' applied. Another day's rest was allowed, and  
the wood rubbed down using glasspaper, again dusted, and  
\*216 the 'fourth colour or finish' executed.\*

Of the other authors noted in the course of research,  
only Nicholson mentioned rubbing down between coats in this  
\*217 way,\* and it seems likely that, as today, this was frequently  
skimped, especially since Vanherman felt it necessary to  
remark that many painters thought it lost time to rub down  
so often. There was, on the other hand, he stressed, 'no  
comparison between work executed in this way and the  
\*218 slovenly mode practised in general'.\* With regard to the  
length of time allowed between coats, the clear day speci-  
fied by Vanherman no doubt related to the speed at which his  
'Aromatic Paint' would dry, and modern paints are adjusted  
to dry much more quickly. With ordinary oil paint, on the  
other hand, it seems likely that longer was often required,  
and Nicholson, otherwise the only author noted to comment  
on this, observed that if time would permit, two or three  
\*219 days between each coat would not be too long.\* Experiment  
with formulations of contemporary type has tended to confirm  
this. Stopping was carried out by Nicholson after applica-  
tion of the 'second colour' rather than after priming as  
suggested by Vanherman, and by John Smith (for exterior  
\*220 work) before priming.\* It seems most likely, however, that  
general practice for interior painting would have conformed  
to that of Vanherman and the present day in stopping after  
application of the primer.

Turning to repainting work, no references to the use  
of paint strippers have been encountered, and the first men-  
tion of burning off located is that in one of Bartholomew's  
mid-nineteenth-century specification clauses, in which the  
contractor was enjoined to prepare all the interior and

exterior joinery, and 'to burn off therefrom all...  
\*221 blistered and other defective parts of the painting'.\*  
Significantly, this possibility was not mentioned by  
Vanherman, who again provided the most punctilious account  
of the preparation necessary. Previously painted surfaces  
were, he directed, to be washed down with soap and water  
and pumiced, the latter procedure also being specified by  
Pincot and Nicholson. Chips and blisters were then to be  
brought forward with three or four coats of paint applied  
locally, and when these were dry, the work was stopped and  
rubbed down ready to receive the 'second colour' or under-  
\*222 coat. From then on painting continued as in new work.\*  
For the cheap method of redecoration, clearcole and finish,  
Nicholson merely suggested dusting and stopping before  
\*223 application of the clearcole;\* whilst Emerton dusted and  
sized the old paintwork on wainscot before stopping and  
\*224 application of the finish.\*

Cleanliness, and the avoidance of dust are obviously of  
prime importance in achieving a good finish in any kind  
of paintwork, and Pincot, who stressed too its rôle in  
the avoidance of lead poisoning, remarked:

'In Inside Painting a great help to your work would be  
to let the woman wash, and clean it well; you will  
here have the advantage of the Painter, circumstances  
not affording him that opportunity though always done  
in Ireland by women employed by Painters for that  
purpose, who clean before and after workmen: I have  
often had a well painted room spoiled by women care-  
lessly splashing it over in cleaning the floor, which  
ought to be done previous to your laying on the last  
\*225 coat of paint.'\*

Undoubtedly, however, the last word in preparation lies in  
a mid-nineteenth-century French specification quoted by  
Donaldson:

'L'entrepreneur de Peinture sera avec le plus grand  
soin tous les travaux préparatoires en usage, tels  
que les époussetages, égrenages, gratages, lavages,

\*226 rebouchages, lessivages, poinçages, et tous autres nécessaires pour obtenir la perfection désirable.\*

\*227 During the course of painting, informed opinion suggested that ventilation combined with a degree of warmth was necessary, the two no doubt combining to prevent dampness or humidity affecting the paint. In pricing work, Laxton noted that a small fire should be allowed in each room;\* and Emerton recommended:

\*228 'If the Weather is cold or damp, it will be proper to make a Fire in the Room; but if the contrary, set open all the Windows to give it Air. For the sooner it dries, the better it looks.\*

\*229 This advice, however, does not always seem to have been followed, since Bentley directed that when applying his 'New Metallic, or Aromatic Oil Paint', in contrast with 'the usual mode of Painting, it is absolutely necessary that the windows should be kept open, to have all the air possible during the operation'.\* Vanherman too implied that this was not general practice, and writing in turn of his own product, advised:

\*230 'Unlike the usual method adopted by painters, of keeping close shut up during the operation, it is necessary that all doors and windows should be open when the Aromatic Paint is used, as it is an erroneous idea, that affording air at this time injures the whiteness of paint; it is quite the reverse - air and light bleach all colours.\*

He also provided a detailed account of the order in which the various elements of the room were generally tacked, observing:

'Most painters begin with the backs of the shutters, and linings, and then the sashes... and the sofit, and shutter fronts; after these, the cornice and frieze; next commence the wall or wainscot, beginning at the top, and so proceed downwards to the dado, which you

leave until all the four flanks, or sides, are gone over. You are now to cover the doors, and then the dado and skirting, and, lastly, the chimney-piece, if it is wood. When two men are employed in the same room, the work is executed with more facility, especially if the flanks are of great dimensions; in that case, one takes the top and the other the bottom, so that both meet in the middle; this is particularly essential, when an apartment, hall, or staircase, is to be flatted.\*

\*231

Should the colour scheme comprise both dark and light colours, Pincot suggested execution of the dark colours last, since the dark paint covered the light better at junctions than vice versa, thus producing a neater job.\*

\*232

Considerable concern was expressed over the quality of the final finish in oil paint, which, Tingry observed, had a character of solidity which caused it often to be preferred to varnish or distemper.\* It will be remembered that Vanherman recommended the use of a dark undercoat for the particular purpose of preventing the work looking badly covered, and it will be recalled too that at a much earlier date John Smith had stipulated thinning the paint only to the extent that the ground (which was of course often of a dark red colour) should not grin through. It was suggested above that this problem of opacity in the finish was greater with some colours than others, and there seems little doubt therefore that it was for this reason that Reynolds specifically directed a half worn brush should be used in laying a blue finish made with Prussian blue.\* Indeed, most significantly, the author of the Painter's... Pocket Manual indicated that the test of the complete workman was that he left no brushmarks behind him;\* but to achieve this, quite apart from a properly tinted undercoat and correctly chosen brush, the way in which the latter was handled was critical, and Pincot therefore gave detailed instructions over this aspect of painting practice:

\*233

\*234

\*235

'Now, in laying on the colour always take a full brush laying a little here and there at distances within your

reach, rubbing it out till the whole is spread fair and even, a yard square at a time is sufficient; and, when equally spread, cross it first one way and then another, lying it off lightly with the grain of the wood'.\*

\*236

Vanherman too stressed the need in laying colour on panels, stiles, or indeed any flat work, to 'cross the brush, both backwards and forwards, and in all directions, to equalise the paint', and then to 'lay it off, by beginning at the top and drawing your brush firmly down, and then from the bottom upwards, to meet and make the joining good', adding with final emphasis:

\*237 'Be careful not to leave any hair marks on the work'.\*

Even at a much earlier date, Emerton, who it will be recalled also stipulated the need for a grey undercoat for his green paint, took care to direct that the panels of wainscot should be painted the way of the grain;\* and the hallmark of good work was summed up by Martin, who observed that although cheap painters cared little about it:

\*238

\*239 'Good painting is known by the fullness and solidity of its appearance without any marks of the brush'.\*

Oil paint systems  
for interiors

The minimum recommended by authors from the late seventeenth century for new interior work was, put into modern terms, priming, an undercoat, and a finishing coat. Where an oil primer was used this was known as three times in oil, but where the work was primed in size as twice in oil and primed in size. On stucco, however, Nicholson regarded four coats of oil paint as the minimum sufficient, that is four times in oil.\* These terms may be seen in the table which shows prices for ordinary colours taken from various accounts and trade manuals of the period;\* and it will be seen that painting on stucco (the term being applied to internal plaster as well as exterior rendering) was more expensive than painting on timber. More coats than the minimum mentioned above might of course be used. Nicholson, for example, suggested an oil primer followed by four or

\*Table (vii)

Table (vii) Prices for painters' work in pence per yard super for ordinary white or common colours

N.B. Figures in square brackets are for exterior work, those in round brackets for painting on stucco.

	1659 <sup>1</sup>	1665 <sup>2</sup>	1690-4 <sup>3</sup>	1696 <sup>4</sup>	c. 1700 <sup>5</sup>	1734 <sup>6</sup>	1745 <sup>7</sup>	1745-8 <sup>8</sup>	1776 <sup>9</sup>	1783 <sup>10</sup>	1787 <sup>11</sup>	1789-12 <sup>91</sup>	1790-1803 <sup>13</sup>	1810 <sup>14</sup>	1818 <sup>15</sup>	1831 <sup>16</sup>
<b>NEW WORK</b>																
One coat of oil ('once in oil')	[3]	-	3 <sup>17</sup>	-	4	-	-	3	2	-	2(2½)	3½	3½(3½)	5(5)	5	4
Two coats of oil ('twice in oil')	[6]	-	-	-	6	-	-	4½	4	-	4(5)	4½	5½(6)	8(8)	8½	6
Three coats of oil ('three times in oil')	[9]	10[12]	10	8	9	6[6-8]	6	6(7)	6(6-8)	-	6(7½)	6	7½(8)	11(11)	11½	9
Four coats of oil ('four times in oil')	-	-	-	-	12	-	8	8(9)	8-10 <sup>18</sup>	8½	8(10) <sup>18</sup>	8	9½(10½) <sup>19</sup>	14(14)	14	12
Two coats of oil on a size primer ('twice in oil primed in size')	-	-	-	-	-	-	-	-	5	-	5	-	6½	9	-	-
<b>OLD WORK</b>																
Two coats of oil ('second colour and finish')	-	-	-	-	-	-	5	-	-	-	5	-	7	-	-	-
One coat of oil on a distemper undercoat ('clearcole and finish')	-	-	-	-	-	-	4	-	3	-	3	-	4½	6	-	5½
<b>FLATTING</b>																
Single coat of flatting ('dead white once in oil')	-	-	-	-	-	-	-	-	-	-	4	-	6	-	7	6
1 coat of oil plus one coat of flatting ('twice in oil dead white', or 'once in oil and flatted')	-	-	-	-	-	-	-	-	-	-	7	-	9	12	12	10
2 coats of oil plus one coat of flatting ('three times in oil dead white', or 'twice in oil and flatted')	-	-	-	-	-	-	7(8)	9	9	-	10	-	11	15	15½	15
3 coats of oil plus one coat of flatting ('four times in oil dead white', or 'three times in oil and flatted')	-	-	-	-	-	-	9(10)	12	12	-	12-14	13	16	18	18½	18
4 coats of oil plus one coat of flatting ('four times in oil and flatted')	-	-	-	-	-	-	-	-	-	14	-	-	21	-	-	-

Notes and references

1. Wilsford (1659), p. 26.
2. Gunther (1928), p. 147 (contract for Clarendon House, Piccadilly, London).
3. P.R.O. MSS., WORK. 19/48/1, ff. 50(iv), 64(iii), 93(iii) - accounts for Kensington Palace.
4. R.I.B.A. MSS., WRE/2/19, 20 (tenders for Greenwich Hospital).
5. Boughton MS., vol. i, pp. 159-69 (accounts for Boughton, Ditton, and Montagu House).
6. Salmon (1734), p. 56.
7. Salmon (1745), p. 47.
8. R.I.B.A. MSS., FEL/1, pp. 82-6 (accounts for 22 Arlington Street).
9. Builders Price-Book (1776), pp. 90-1.
10. Englefield (1950), p. 184 (prices fixed by the Painter-Stainers Company).
11. Builders Price-Book (1787), pp. 135, 138.
12. Woburn MS.
13. Phillips (1804), pp. 126-7.
14. Builders Price-Book (1810), pp. 81, 83-4.
15. Laxton (1818), p. 96.
16. Skyring (1831), p. 88.
17. Painting on the back of wainscot.
18. On stucco from a ladder, 12d.
19. On stucco from a ladder, 14d.

five coats of oil paint; an estimate dated 1771 signed  
 by James Adam for painting the major interiors at the  
 Shire Hall, Hertford, contains items for five coats of  
 oil on the stucco; whilst at Somerset House up to five  
 \*241 coats were also applied.\* The maximum noted to date,  
 however, were the six coats of white in nut oil used on  
 \*242 ceilings at Montagu House, London, in 1705;\* but this  
 seems exceptional, and for ordinary work three coats  
 remained the norm. A contract dated 1770 for the erec-  
 tion of a bakehouse and dwelling in Middlesex, for example,  
 \*243 specified that all the interior and exterior joinery was  
 to be painted three times in oil;\* and although in the  
 first edition of his book John Smith noted that two or  
 three primings followed by four or five coats of finish  
 might be used externally, for wainscoting he particularly  
 \*244 remarked that two coats of finish only were required.\*  
 In The City & Country Purchaser & Builder [1667], Stephen  
 Primatt priced only for three coats of oil on 'Bannisters  
 \*245 for Stair-cases',\* and the tenders of c. 1696 for interior  
 \*246 painting at Greenwich Hospital were all for three coats;\*  
 whilst Emerton too envisaged the application of a primer  
 \*247 and two coats of finish on wainscot.\* Two coats alone  
 are also occasionally met with, as in the Servants Hall  
 \*248 at Boughton House painted about 1700;\* and in other in-  
 stances the work might be primed in size, followed by two  
 coats of oil, this being recommended, for example, by  
 \*249 Joseph Emerton in the painting of stucco.\*

In repainting old work, the cheap method known as  
clearcole and finish, using a distemper undercoat, has  
 already been described and found a place in many eight-  
 eenth and early nineteenth-century price books. Its oil  
 equivalent of undercoat and finish was known as second  
colour and finish, and by way of explanation Pincot  
 defined second colour as,

'a term used by Painters, which is the second coat  
 layed on new work, and the first on work which has  
 been painted before, the old work being considered  
 \*250 equal to a primed state'.\*

\*251 Nicholson too indicated that the term was used in this way.\*

The nomenclature applied to flatting was, however, slightly less clear cut. The earlier system seems to have been to regard the flatting as forming the last oil coat, and thus in the late 1740s at Henry Pelham's House in Arlington Street, London, three times dead white was priced at 7d. per yard against 6d. for three times in oil and 8d. for four times in oil.\* The same system was followed in eighteenth-century editions of the Builder's Price-Book, so that in 1787, for example, 'Dead white to old work once in oil' was priced at 4d. per yard against 5d. for second colour and finish, showing clearly that only one coat was intended. In the first edition of 1776 'Dead white to old work three times in oil' at 9d. (as against 10d. in 1787) must therefore have been intended to represent two coats of normal oil followed by the flatting coat, and 'Fine flat white four times in oil' at 1s. three coats plus the flatting.\* William and James Pain also gave prices on the same system during the closing years of the century in their British Palladio.\*

A slightly variant term was used, however, by the Painter-Stainers Company, who regulated the prices of painting in London, when in 1783 they fixed a rate of 1s. 2d. per yard for 'four times in oil and once flatted white'.\* In this instance it seems probable that a total of five coats was intended, since the Builder's Price-Book of 1787 quoted 1s. to 1s. 2d. for dead white to old work 'four times in oil',\* and at Woburn Abbey between 1789 and 1791 1s. 1d. was charged for 'three Oyl & flatted'.\* In the 1810 edition of the Builder's Price-book, after the severe rise in prices occasioned by the wars with France, 'Once in oil, and flated dead white' was priced at 1s. per yard against 5d. for once in oil, the difference of 7d. between these no doubt representing the cost of a flatting coat.\* The conclusion that the new mode of expression implied the application of two coats of paint is confirmed by the fact that this latter figure was given by Laxton in 1818 for 'Flatting, dead colour once', whilst he too priced one coat of oil at 5d.\* Martin moreover defined 'Three times in oil and flat' as



three coats of oil plus a flattening coat, but confused the issue by defining 'Thrice in oil and flat' as two coats of oil plus a flattening coat.\* It seems fairly clear, however, that thrice is a misprint for twice; especially since Nicholson, who based his text of 1823-5 directly on Martin's article, amended it to 'THRICE IN OIL', explaining that this meant two coats of oil plus one of flattening.\*

Measurement of  
work for pricing

Painter's work could be measured for pricing in a number of ways, either by the superficial area, by the piece, by the foot run on items such as mouldings, or by the time and materials expended. The first of these alternatives provided, of course, the method used for the vast majority of paintwork, but the second was used at least from the mid-seventeenth century for such elements as window lights or sash frames (that is the fixed part of the window joinery), iron casements and sash squares (the opening parts), iron bars, catches, and chimneypieces. Wainscot on the other hand was naturally priced by the superficial yard, although Isaac Ware noted in his Complete Body of Architecture (1756) that it was measured in feet and the figure reduced to yards. To square up a room, he directed, the perimeter of the wall was taken and multiplied by the height. For the latter dimension measurement was made as if all the mouldings were flattened out, being 'girt by a line bending it into every moulding' so that although the horizontal component of the calculation was the same as that used by the joiner, the vertical element was increased.\* Earlier writers too referred to the same method, Wilsford observing that 'Painters do measure with a string all moulded works', and Leybourn also mentioning this procedure;\* whilst Venterus Mandey, in Mellificium Mensionis: or the Marrow of Measuring (1717) noted that one should begin with a piece of string from the top of the cornice.\* Window shutters had of course to be painted both sides, and Neve noted: 'They always reckon double Work for Painting of Window-shutters, if both sides are Painted alike';\* whilst Ware tabulated 'the back and edges to the shutters' and also the 'Back edge to the architrave' in his addition.\* The area occupied by the chimney-piece would be deducted if it was not to be painted in with the wainscot, Ware making this allowance too in his example.

Another detail of the measuring method was noted by Neve, who observed that although,

\*267 'they reckon Sash-frames by themselves, (at so much per Piece, and likewise Mantle-pieces) when there is no Painting about them;... if they stand in the Wainscot, they measure them as plain Work, deducting nothing for the Vacancy.'\*

\*268 Staircase bannisters were also often measured by the square yard. Leybourn remarked that although they could be girt they would sometimes be priced as if flat, adding 'I have seen the experiment tryed, and the difference would not countervalue the trouble of Girting'.\* His observation was repeated by Neve, who enlarged on the method thus:

'Both sides of the Ballisters are measured as if it were flat Measure, including the Vacuity betwixt the Ballisters; which being cast up in Feet and Parts, it's reduced into Yards as other Plain Painting is.'

\*269 It stood to reason, he argued, that this should produce the same result as the other method 'because it's the Custom to set them but their Square or Diameter asunder, and then the Flanks make good the Vacuities'.\*

\*270 Later during the eighteenth century, with more widespread elaboration in interior painting and increasing use of stucco the system evolved further. In 1663 Gerbier, for example, had only priced carved and gilded frames and mouldings by the foot run, and in 1734 Salmon only exterior cornices in this way;\* but by 1787 the Builder's Price-Book noted that carved mouldings, modillions, cornices, fascias, and skirtings were all measured by the foot run, and the first edition of 1776 had priced cloak pins, stall plates, bell wires, and Ionic entablatures in this way.\* Further-  
\*271 more, although Salmon had observed that all carving in rooms was so varied that it would have to be valued by the time and material expended, by 1787, perhaps as a result of a greater consistency of architectural style, the Builder's

Price Book indicated that although many such items had still to be valued in this way, 'Chimney pieces, ornamental ceilings, and other enriched work picked in, and small detached pieces done with variegated, or fancy colours' were priced by the square foot.\* This method, found used in many accounts of the neo-classical period including, for example, those for Somerset House,\* points to the revolution in the use of paint colour in interiors which took place during the mid-eighteenth century, and reflects the developments described in Chapters VI and VII of this study.

WATER-BASED  
PAINTS

Although in certain instances, some of which will be mentioned below, water-based paints might be applied to timber, such finishes were more generally reserved for the decoration of plasterwork. Campbell, for example, referred to 'plaistering and white-washing the Ceiling, and such Part of the Walls as require it, or are not to be wainscoted';\* whilst Dossie remarked that distemper was used for ceilings and 'common hangings', meaning by the latter those of paper rather than fabric.\* Thus too, in a contract dated 1770 for the erection of a house and baker's shop in Middlesex, the joinery was to receive three coats of oil paint, whilst the plasterwork of the walls and ceilings was to be finished in a water-based coating.\* Such preparations in their simple form were naturally rather cheaper than those in which oil was used as the medium; but, the author of the Painter's... Pocket Manual declared, although much used in the interior of houses, distemper was inferior to oil paint.\* When applied to new walls before they had properly dried out, however, the latter could give trouble, a disadvantage stressed by J.C. Loudon in connection with exterior work in his Encyclopaedia of Cottage, Farm, and Villa Architecture (1833);\* and it seems likely therefore that, as remained common practice until quite recently, the plasterwork in newly finished interiors would often be decorated first in a porous, water-based paint, pending final decoration in oil a year or two later. This was certainly the case at Henry Pelham's house in Arlington Street, London, the accounts for which show that the whole of the staircase had been painted in this way by January 1746 and was not decorated in oil until about two years later.\*

At Arlington Street, as elsewhere, it was the plasterer who was responsible for the application of water-based finishes, work in oil being executed by the painters and being contained accordingly in a separately measured account. The same split in responsibility is implicit in the wording of the specification forming part of the contract dated 1770 mentioned above; and Campbell, moreover, remarked particularly: 'The Plaisterer is always White-washer'.\* This division of work seems to have prevailed since at least 1603 when, as a result of energetic lobbying on the part

of the Painter-Stainer's Company, an Act of Parliament was passed preventing 'any of the Company of Plaisterers' from applying oil paint.\* The statute gave the Painter-Stainers sole right to the use of oil 'within the City of London and the Suburbs and Liberties of the same', and the plasterers were limited to the use and application of whitening and a restricted range of five tinting pigments 'mingled with Size only'. Although in opposing a later Bill of 1664, the Plasterers Company argued that country bricklayers and glaziers commonly laid oil paint on timber,\* a circumstance which could suggest that London practice may not always have been followed in the provinces, the principle does nevertheless seem to have been general and to have been maintained well into the nineteenth century. It is reflected, for example, in all the eighteenth-century price-books, and even as late as 1831 still formed the framework adopted in the 21st edition of Skyring's Builder's Prices;\* whilst the Act itself was not repealed until 1856.\*

Commonly used  
formulae

Of the white base pigments described at the commencement of the last chapter, only four - chalk, white lead, lime, and satin white - seem certainly to have been used for house-painting in an aqueous medium. To these may perhaps be added barium carbonate, which Vanherman suggested could be used as 'a water-white for ceilings',\* and possibly also gypsum. In the case of binders too, although an appreciable number of alternatives was available,\* relatively few seem to have been employed; and, for interior work in particular, sizes of varying quality seem to have been used in the vast majority of instances. Indeed size alone received mention in builders' price-books of the period, and, despite the fact that formulae in which skimmed milk was exploited were also published, references to actual use of these in domestic interiors have proved elusive, so that the true extent to which such casein-bound paints were employed remains obscure. By the early nineteenth century on the other hand it seems most likely that oil-bound distempers, using an oil and water emulsion as the vehicle, were being developed and marketed commercially, at least for exterior use. Discussion of these together with formulae for casein-bound paints will therefore follow description of the more commonly

used size-bound formulations and their method of application.

## Whitening

During the period considered, three basic terms were in use to describe water-based paints. These were whitening (and its close relatives, white, whited, and whiting), together with whitewash, and distemper. Of these it seems that as a general rule the first was most often used to indicate a finish to which no binder had been added, the two latter apparently being employed to distinguish paints containing size. The evidence for this is not, however, explicit, and emerges only from usage of the terms. Thus, for example, Emerton referred to 'Size the Plaisterers use in White-washing',\* and Pincot's formula for 'whitewash' given below contained size; whilst Neve and Salmon listed 'White-washing with Size' and 'White-washing, with Whiting and Size' respectively, both pricing the item at 2d. per yard.\* The French term détrempe was used by D'Aviler and Watin for size-bound paints,\* and its English equivalent 'distemper' by Dossie, Tingry's translator, and Nicholson in connection with formulae in every case containing size.\* Prices encountered for painting in 'distemper' are, moreover, comparable with those already mentioned for 'whitewash'. For example, at Somerset House in 1780 3d. per yard was charged for two coats, and 4½d. for three, and 3d. again for two coats at Woburn Abbey, Bedfordshire, ten years later.\*

Against this reasonably firm evidence for the nature of distemper and whitewash, a clear definition of 'whitening' seems lacking. Comparing prices for this against those for distemper and whitewash, however, it is apparent that in many instances it was a much cheaper process; and since almost the only economy possible would have been omission of the binder, it seems most likely that, except where specifically qualified (as, for example, by Laxton, who gave a price for 'white in distemper'),\* the term was generally employed to convey a finish applied simply in the form of a suspension of pigment in water. A friable coating of this nature would undoubtedly have been adequate on ceilings or on the upper parts of walls where abrasion from traffic would not be expected, and might also have had

certain advantages in freedom from the tendency to yellow-  
ing that the presence of poorer qualities of size would  
impart. Hence, although Gerbier gave a rate of 3d. per  
yard for 'White-washing and stopping', 'Whiting and Stopping  
of fret Seelings' was 2d., 'Whiting and stoping of old plain  
wall and seelings' was 1d., and 'Whiting of new walles' was  
\*293 a mere 3½d. per square.\* In 1694 at Dyrham Park, a house  
having a large number of enriched ceilings, 2d. per yard  
was charged for 'Whitening', apparently confirming that  
\*294 Gerbier's rates were correct.\* Eighteenth-century price-  
books are less helpful on the matter of comparative prices,  
but 'Whitening of new Work' and 'White only to new work'  
were priced by Salmon and in the Builders Price-Book res-  
\*295 pectively at 1d.\* By the 1810 edition of the latter this  
had risen to 1½d., whilst 'Washing, scraping, and whitening  
to old work' was 2½d., but 'Wash stop and white, in distem-  
\*296 per' was 4d.\* Laxton too gave a table in which 'Wash, stop,  
and white to new work' was 1½d., the same 'to old work' was  
\*297 3½d., but 'distemper' cost 6d.;\* and Skyring noted 'Whiten-  
ing to new work' at 2d., specifying the addition of 4d. if  
\*298 'in distemper'.\* These prices all therefore tend to con-  
firm the suggestion that as a general rule whitewash and  
distemper contained size, whilst simple whitening would not.

With regard to examples of 'whitening', in the finish-  
ing of ceilings Sir Roger Pratt indicated that they should  
be 'first well sized, and afterwards whited with the best  
Spanish white', also noting:

'After they are done it is best letting them stand  
one winter without giving them the last finishing,  
and the next spring to mend their cracks, and then  
give them their last whiting.'

He recorded too that 'Whiting' was employed in the Hall and  
Little Parlour, the Clockhouse, garretts, and offices at his  
\*299 own house, Ryston Hall, Norfolk;\* whilst in 1781 the walls  
of the kitchen in the basement of the East wing of the  
Strand block of Somerset House were described as 'whited',  
and the ceilings of the Duchess's Bedroom and the Barrack  
Room at Gordon Castle, Morayshire, were finished with  
\*300 'Whitening' in 1782.\*

Besides the chalk mentioned by Pratt, it is clear that lime too was often used for the purpose, and seems to have provided a finish more or less comparable in price with everyday 'whitening' although this could vary. The brickwork of certain inferior rooms in Sir John Moore's School at Appleby, Leicestershire, was finished with 'limewash' in 1696;\* but the earliest reference to lime noted in a builders' price-book is that by Salmon who, in 1745, indicated that in London 'Lime White, and Whitening of old Work' cost 2½d. per yard;\* whilst at Woburn Abbey in 1790 'Lime whitening to walls' was priced at 2d.\* Late eighteenth-century editions of the Builders Price-Book suggested a rate of 1d. for 'Lime-whitening' (the same as 'White only to new work'), a figure which rose to 1½d. between 1810 and 1813.\* Phillips, however, suggested this increase had taken place between 1790 and 1803, giving the same figure as the current price in the 1812 and 1821 editions of Crosby's Builders' New Price Book. In these 'New work, whiten only' had increased to 2d., making lime the cheaper alternative, whilst two coats of 'Lime-whitening' cost 2½d. and two coats using 'the Vauxhall stone lime' 3½d.\* Laxton gave 2½d. for 'Wash, stop, and lime white' in 1818;\* and in 1831 Skyring priced 'Lime white' at 1½d. against 2d. for 'Whitening', two coats costing 2½d.\*

In France, satin white also seems to have been used without a binder during the seventeenth century, since although Watin described the use of size in preparing blanc des Carmes for interior walls (his formula being discussed below) D'Aviler did not include this ingredient, directing:

'Le Blanc qu'on nomme des Carmes se fait sur des murs bien secs avec de la chaux de Senlis éteinte, où l'en mêle de l'alun: on prend le dessus qui est le plus pur dont on met 5. ou 6. couches, & quand il est sec on y passe la main avec un gant blanc pour le rendre plus luisant.'\*

Félibien too had described the preparation and application of le Blanc des Carmes, observing that it was to be strained and used like milk. Five or six coats were employed, each rubbed down with a brush when dry, and the finish had, he remarked, the especial property of not yellowing when used on stone or plaster.\*



It is probable that on occasion such unbound finishes were tinted in the same way as distemper, although no evidence for this has been located. In The Artificers Complete Lexicon (1833), however, J. Bennett gave a method for the preparation of a 'cheap colouring for the walls of rooms in dwelling-houses' which effectively consisted of a mixture of green verditer with orpiment. Two or three coats were to be applied, and no mention of any binder such as size is made.\*

\*310

Size-bound  
distempers  
and whitewash

Procedures for the preparation of size-bound distemper and whitewash were described by Watin, Tingry, Pincot, and Vanherman. In principle these were all very similar, calling for whiting to be soaked in water for several hours in order to break down the cakes or rolls in which it was supplied, after which hot size was added at roughly the rate of 1 pint of single size to 2 pounds of whiting. The English authors then recommended allowing the distemper to cool to a jelly for use, but the Continental writers specified its application warm, except for the final coat. If colour was to be added it was first ground into water, but although Vanherman recommended it should be added before the size, Pincot reversed this order. Details of the individual formulae are as follows.

Watin noted that in general to make a pound of distemper which would cover a square toise (36 square feet) it was necessary to take 3 quarterons of pigment ground in water and add to this four or six ounces of size. On the other hand, to make sufficient grosse détrempe en blanc to cover the same area, he later suggested taking nearly two pounds of blanc de Bougival which was to be diluted with nearly a pint of size having been soaked in water for two hours.\*

\*311

Tingry, in contrast, indicated that common distemper was made from 'Spanish white of Troyes' broken and soaked in water. To this, half a volume of strong glue was to be added hot. The finished distemper should, he noted, run or drop from the brush in a thread when the latter was taken from the pot, since if it did not run in this way it was too thick and would produce a scaly finish when dry.\*

\*312

Pincot gave a particularly good description of the preparation of a whitewash for ceilings. To make this, he directed, it was necessary to,

'dissolve your whiting in as much water as will render it to the consistence of mortar, thin the same in single size to the consistence of Paint... and when well mixed up leave it 6 or 8 hours, or a night to cool, in which state it will be like a jelly, and work without splashing'.

\*313 For thinning his proprietary 'water colours', however, he observed that the proper consistence for their use was one rather thicker than cream, and that in no case should the size be added hot as it would destroy some of the colours.\*

Vanherman too gave an excellent account of the method to be followed in making a finish which he called Royal white, but despite the similarity of name this bore little relation to Watin's blanc de Roi to be discussed below, and resembled much more closely the formulae so far noted. It was, he said, to be especially recommended for lodging houses, shops, banks, coffee houses, and offices since it was so quick in use that one day would suffice to do an apartment. To prepare this finish, he directed that 12 pounds of the best whiting should just be covered with cold water and soaked for 5 or 6 hours. The mixture was then stirred and 2 quarts of double size added, after which it was allowed to stand overnight to become a jelly in which state it was to be applied. One pound of the recipe would, he indicated, cover six yards of work once.\*

\*314

Formulae  
containing  
white lead

\*315 Although D'Aviler said that blanc de Rouen was used to make distemper, he added to this the observation that to make the finish more beautiful, white lead or ceruse could be substituted in the second coat.\* It will also be noted that Watin used proportions of ceruse and white lead in the finishing coats for the special and complex blanc de Roi and chipolin discussed below, whilst Tingry remarked on the browning of chalk beneath varnish, preferring 'metallic colours' such as white lead.\* On occasion, use of this

\*316

pigment seems also to have been contemplated in the British Isles, since in 1769 Chambers wrote to the Earl of Charlemont in connection with painting the Saloon in the Casino at Marino near Dublin recommending that 'the cove parts of the Ceiling be done with Izing glass & flake-white to be of a more brilliant white than the Entablature & <sup>C</sup> & <sup>C</sup>!.\* In the early nineteenth century too, the use of ceruse was given as an alternative to 'French white' by Nicholson, this time in a recipe for straw-colour distemper;\* and an item in Skyring's Builder's Prices also concerned the use of white lead in distemper.\*

Use of other pigments

Besides chalk and white lead, it also seems possible that lime was used with size as a binder. Tingry's later editor, for example, remarked that lime was excellent for whitewashing ceilings, although, he added, it (by which he seems to have meant stone, as distinct from chalk, lime) was scarce in London where for that reason whiting was more commonly employed in spite of its rather duller colour.\* Despite his use of the term whitewash it is quite likely, however, that he had ordinary lime-whitening in mind. Watin, on the other hand, gave a formula for murailles au blanc des Carmes which differed from those of Félibien and D'Aviler already discussed in that it quite explicitly contained size, and may have been lime-based rather than making use of satin white. He directed that purified slaked lime to which a little turpentine had been added\* should be diluted with colle de gants, a little alum being mixed with this. It was, he noted, a method which could be used for decorating internal walls, but only those of new plaster or in instances where the plaster was in an almost new state. As with the seventeenth-century formulae, five or six coats were to be applied, the last being rubbed down hard with a hogs-hair brush.\*

Besides these pure white finishes for walls and ceilings, Watin also suggested the use of stil de grain and certain organic dyes with colle de Flandre to stain parquet; and used earth pigments in alternating coats of distemper and oil to stain floor tiles which were finally polished in wax.\* It seems quite likely that both methods were used in England,

\*324 especially since the accounts for Henry Pelham's House in  
Arlington Street contain an item for Brement paving being  
\*325 painted with Indian red;\* but, other than their repetition  
by Tingry,\* more explicit references to the use of such  
techniques have so far proved elusive.

Use of the finer  
qualities of size

\*326 It has already been mentioned that Watin employed  
colle de gants in his formula for murailles au blanc des  
Carmes. He also used it in another formula for the decora-  
\*327 tion of internal walls, but for the finishing coats of his  
more elaborate systems blanc de Roi and cipolin he employed  
colle de parchemin.\* Nicholson too suggested the use of  
parchment size in distemper, observing that isinglass was  
\*328 too expensive.\* This latter, the highest quality of size  
available, however, had been recommended by Dossie for use  
in the finer parts of distemper work,\* and as already noted  
Chambers had suggested its use in the cove of the Saloon of  
the Casino at Marino near Dublin to produce a particularly  
brilliant white for a client who seems to have been con-  
cerned to obtain the very best. It is quite possible,  
therefore, that such an expensive grade might have been  
used in distempers to be applied to limited areas, even if  
on very rare occasions; although there can be no doubt that  
in the vast majority of instances ordinary size would have  
been employed.

Preparation and  
the application  
of whitewash \*329  
and distemper

New work

\*330 Before painting timber with distemper, Watin recommended  
that any knots should be rubbed with garlic; but how common  
this procedure would have been is not clear.\* Undoubtedly,  
however, some care was necessary to ensure that surfaces  
were free from grease, a point stressed by Watin and by  
Tingry who recommended the preliminary application of a coat  
of cold size.\* Pratt too, it will be recalled, had suggested  
\*331 a similar impregnation prior to the whitening of plaster  
ceilings.\* Whether this would also have been normal in the  
case of rooms hung with paper stretched on canvas to be  
decorated a plain colour is not clear, but although the  
practice was not suggested in the published transcription  
\*332 of a letter of 1767 from Rowland Belasis to Lord Fauconberg,\*  
it was mentioned that three coats of distemper in all were  
applied to the paper, so that the first may well have sealed

its surface. It is possible too that the paper used may have been well sized in manufacture. Nor is it entirely clear whether plastered walls were commonly lined with paper in the modern way, that is directly on the surface of the plaster, in order to achieve a good finish as a matter of course; but attention may be drawn to the wording of a letter in which a York upholsterer expressed himself 'sure it is much for the advantage of the wall to have a paper upon it to do it in oil or size',\* a recommendation which does perhaps seem to suggest this, but at the same time to contain a hint that the procedure was not regarded as de rigueur. Indeed, Pincot remarked that his 'water colours' were preferable to 'paper' as vermin were not harboured in the 'chasims' behind it, as if to suggest that even during the early nineteenth century stretched paper hangings were a direct alternative to applying paint to the surface of plaster;\* and the aversion to the use of paper or Irish linen as a ground for chiaroscuro friezes pasted up after painting which was expressed by Nicholson, suggests too perhaps that the practice of lining plaster directly with paper was not always viewed with favour.\* Nevertheless, Pincot added that his water colours could be applied on top of old paper if it was in reasonable condition, and this practice at least may therefore be assumed.\*

#### Redecoration

In the case of redecoration (which, presumably on account of the special preparation needed, was, as will be remembered from the discussion of prices above, considerably more expensive than new work) Pincot advised:

'A ceiling if not much clogged with old stuff you may make look very well, by first washing it well with clean water and a brush, after which a coat of what is called single size which sticks fast all the dirt left after washing...'

'old stained and patched ceilings are difficult to make a good hand of even by the best regular Plasterers; these, if you attempt them, will want scraping, a trowel would be awkward to you, therefore I recommend an old table knife, drove in a piece of wood longways,

and that cut in the form of a battledore, this will  
serve you to scrape, and stop cracks with, and make  
good decayed places, which should be done with  
\*337 plaister of Paris'.\*

In a similar way, the author of the Painter's... Pocket  
Manual recommended that on smooth walls a coat of warm  
glue should be applied, but that if the walls were rough  
it would be necessary to scrape them clean, in this case  
specifying a preliminary application of glue and Spanish  
\*338 white;\* whilst Vanherman washed, scraped, and stopped with  
plaster of Paris, following this by a coat of double size  
\*339 before redecoration.\* A further hint was provided by  
Nicholson, who suggested that, before distempering, old  
stained plaster could be 'fixed with a coat of white lead  
\*340 ground in oil and used with oil of turpentine'.\*

In contrast with these early nineteenth-century English  
suggestions, the late seventeenth-century French writer  
D'Aviler simply observed that it was necessary to apply a  
\*341 coat of limewater to old walls before distempering them.\*  
Watin too applied limewater, this time after scraping, but  
specified the use of two or three coats followed by rubbing  
\*342 with a ball of horsehair.\* It is not clear, however,  
whether this represents a split between English and French  
practice, or whether this was an earlier technique which  
had become obsolete by the early nineteenth century.

#### Brushes

In the Academy of Armory published in Chester in 1688,  
Randle Holme remarked of the Plasterer:

'These kind of Artificers have generally two sorts of  
Brushes, the one set crooked or bending on the end of  
a Staff, which is put into it, according to that  
length the Work Man is to reach...

'The other is an Hand=Brush, having an Handle about  
half a yard, or longer (for shorter they are not to  
use) by which they lay Whiting and Russet within their  
own compass or reaching!.

\*Fig. 18

His illustration\* shows the former clearly, although the latter seems to be drawn without the long handle in position. Later, however, he gave a second illustration of

\*Fig. 19

the 'Plasterers Hand-brush',\* observing that it was made from hogs bristles, but this time stating that 'according to the Statute' its handle was to be one yard long.

Although he again indicated that with this brush the plasterers might 'Whitten, Russet, or Black any Posts, or parts of an House within or without, in water Colours only' (adding rather sternly that they were 'not to meddle in Oyl'),

\*Fig. 20

he clearly regarded the first type he had described as more typical of the trade. In repeating the illustration of the 'Plasterers whitening Brush, such as he useth with a long staff',\* he therefore remarked that he considered this was

the variety which should be placed in their coat of Arms, rather than 'that with an handle, it being rather an House Painters Brush'.\*

\*343

The three plasterers' brushes illustrated by Joseph Moxon in the third edition of his Mechanick Exercises (1703),

which; he remarked, were used by them to 'white and size their Plastering',\* are very different from those shown by

\*344

\*Fig. 21

Holme. The 'Round Brish' and the pencil in the centre and on the right of his engraving\* respectively seem much closer in form to the brushes used for oil paint which have already been described; whilst the 'Stock Brish' (a term also used

\*345

by Vanherman a century and a quarter later)\* shown on the left appears to be composed of three closely adjacent tufts of hair, each of circular form. This, of course, resembles in many respects the modern pattern and a mid-nineteenth-century depiction of a 'distemperring brush',\* and suggests,

\*Fig. 22

perhaps, that Holme's brushes were archaic. The same mid-nineteenth-century source, also illustrated a 'white wash

\*Fig. 23

brush' of flat form, which is reproduced here\* for purposes of comparison.

Application

In applying distemper, Pincot directed,

'do your ceiling over as quick as possible, observing to lay it all one way, and that from the light to the dark part of the room, always beginning on the window side'.

His 'water colours' too were to be laid on,

'as quick as you can... laying them as even as you possibly can, and observing to leave them lay'd off one way, as the marks of the brush will not then be so much observed'.\*

\*346

These instructions are significant and may be compared with those noted above for the use of oil paints in which other authors stressed the need to provide a solid-looking surface, free from brushmarks.

\*347 Two coats of distemper were recommended by D'Aviler, Bullet, and Nicholson;\* and Pincot recommended the application of his proprietary 'water colours' over a preliminary coat of whitewash.\* Watin, however, suggested that several coats of common distemper might be applied,\* and the letter from Rowland Belasis to Lord Fauconberg\* providing one instance in England in which three were used has already been noted above. At Bowood, Wilshire, it seems possible that four coats may have been used during the second half of the eighteenth century;\* and the five or six coats recommended for blanc des Carmes have already been mentioned. The much greater number of coats for the other special finishes described by Watin, blanc de Roi and cipolin, are described below; but general practice seems likely to have been restricted to a maximum of three coats only. In preparing successive coats, Tingry drew attention to the care needed to ensure that all were of equal strength in order to avoid trouble from flaking;\* whilst the fact that English authors generally recommended application of distemper cold in contrast to the suggestions of the Continental writers Watin and Tingry has already been mentioned. Both latter authors, however, directed that the final coat was to be laid on cold; and Tingry seems to have been the source used by the author of the Painter's... Pocket Manual in making the same recommendation.\*

\*348

\*349

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\*351

\*352

\*353

Special size-  
bound finishes  
'Blanc de Roi'

In contrast to the comparatively simple varieties of distemper so far described, Watin included a finish which he called blanc de Roi. This was, he indicated, greatly



employed in the King's apartments, but was not suitable for rooms used a great deal. It was particularly appropriate in his opinion where gilding was to follow, and indeed the build-up of coats is reminiscent of the gesso ground for water gilding. The operations involved were: (a) Encoller, in which a coat of clear size made with the addition of garlic was first applied, followed by a coat of whiting and size; (b) apprêter de blanc, in which several more coats of whiting and size were applied; (c) addoucir et poncer, or rubbing down; and (d) reparer, in which the arrises and angles were sharpened. Two coats consisting of equal parts of ceruse and white lead together with a little indigo in parchment size provided the finish.\*

\*354

No other reference to such an elaborate system has been encountered, and it is not therefore entirely clear as to whether anything nearly so complicated was ever used in England. Samples taken from the State Bedroom in the Casino at Marino near Dublin, however, suggest that something of the sort may have been carried out, but it has not been possible to prove this.\*

\*355

Distemper to be  
varnished -  
'chipolin'

Another complex formula given by Watin was for a distemper system to be varnished called le chipolin. He described it as 'le chef-d'-oeuvre de la peinture d'impression', adding that nothing was so magnificent for a room or apartment than fine timberwork painted in this manner. It would, he said, offer to the ostentatious great richness and the most sumptuous embellishment, whilst exhibiting the freshness of porcelain, a quality which, he stressed, the finish would keep. The operations were precisely the same as for blanc de Roi, up to and including (d) reparer, after which three remained: (e) peindre, in which two coats of the desired tint were applied in a distemper consisting of equal parts of ceruse and blanc de Bougival; (f) encoller, using two coats of weak size; and (g) vernir, when two coats of spirit varnish were applied.\*

\*356

Again, no examples where such a finish was actually used are yet known; and the extent to which such an elaborate system was commonly used, even in the apartments of the French aristocracy, is an open question. Simpler forms of

varnished distemper, on the other hand, had almost undoubtedly been employed on occasion in England, and Gerbier, for example, priced 'Painting of the fairest green, that  
\*357 can be in distemper, and varnisht' at 1s. per yard;\* whilst Vanherman described the application of a coat of light carriage varnish on two coats of distemper, the varnish  
\*358 being preceded by a coat of size.\* Tingry, however, indicated that it was preferable to varnish on a coat of white lead in oil of turpentine, and the varnishing of oil paint  
\*359 in this way will be discussed further below.\*

Casein-bound  
paints

The use of milk or whey as a medium for decorative painting in true fresco (in which the colours are laid on fresh, wet lime plaster so that they penetrate into it) was mentioned by Neve,\* and the properties of casein had undoubtedly been known and exploited in this and similar ways for many years. Watin too described the use of colours au lait, but remarked that the method had fallen into disuse  
\*360 on account of the smell.\* At the end of the eighteenth century, however, an attempt was made by Antoine Cadet-de-Vaux to revive its employment, and an article by him was published in English translation by the Society of Arts in  
\*361 1801.\* In his unpublished thesis 'Materials Toward a History of Housepaints' submitted in 1965, Richard M. Candee has traced the influence of this article in subsequent early  
\*362 nineteenth-century English and American publications,\* and it formed the basis of the formulae which appear in Butcher's revised issue of Smith's Art of House-Painting and in the  
\*363 Painter's... Pocket Manual.\* Such a paint would, Butcher noted, obviate the 'very offensive and injurious smell of common paint to sickly persons' and if made using the quantities given would provide the first coat for twenty-seven yards of work. These were nearly 2 quarts of skimmed milk, about 6½ ounces of freshly slaked lime, 4 ounces of linseed oil, and 3 pounds of whiting. To prepare the paint, the lime was first to be air slaked and sufficient of the milk was to be added to make a mixture resembling thin cream. The linseed oil was then gradually stirred in, followed by the remainder of the milk and whiting, the latter being  
\*364 'gently crumbled on the surface of the fluid'. For fine whites oil of caraways could be substituted for the linseed

oil, and the paint could be coloured by the addition of charcoal or yellow ochre; whilst for exterior work 2 ounces each of linseed oil and white Burgundy pitch were to be incorporated by means of gentle heat and added to the milk and lime mixture, in which an extra 2 ounces of lime were also needed.

In introducing this formula, however, Butcher presented it as a recipe 'which, we have been assured, will answer for inside work, as paneling, &c. nearly as well as oil-paint'. Despite the attraction of its price, which he estimated at 1½d. per yard, compared with those of both oil and distemper, it does not appear therefore that he had any personal experience of the material in use; and in the absence of any known examples of its employment it is difficult to suggest to what extent milk painting in this way would have been practised.

Emulsion paints  
and other  
developments

One of the features of Cadet-de-Vaux's milk-painting formula was the combination of oil and water, although whether the result would have been a stable emulsion is not clear without experiment. Vanherman, however, seems to have been preparing several emulsions for house-painting, and described these in his book. The first he called his 'Impenetrable or Anti-corrosive Paint', and seems to have been intended for exterior use. Its manufacture required the preparation of an emulsion or 'Incorporated oil' by churning 3 gallons of freshly prepared satin white (wet) with 12 gallons of linseed oil and 1 gallon of boiled linseed oil for fifteen minutes. Each gallon of this was used with 7 pounds of a specially formulated combination of pigments in which substantial proportions of his economical invention, crotia (sifted road dust) were included.\*

The corresponding product for interior use was the 'Aromatic paint', designed, Vanherman indicated, in order to make use of the property possessed by satin white in 'neutrilsing' the smell prevalent with ordinary paints. To prepare it, 1 hundredweight of ground white lead was mixed with 1 quart of raw linseed oil and 1 gallon of oil of turpentine to produce a thick cream. To this 10 pounds

of the satin white (presumably still wet) were added one quart at a time, and the mixture rubbed through a 60 hole wire sieve. For use,  $\frac{1}{2}$  pint of turpentine varnish made by warming 1 pound of crude Venice turpentine with  $\frac{1}{4}$  gallon of oil of turpentine, was to be added. This paint would, Vanherman indicated, dry flat; but for a glossy finish 1 gill of drying oil was added to 'a pot' of colour, and the paint could be thinned with a mixture of 1 gallon of oil of turpentine,  $\frac{1}{2}$  pint rectified spirit of wine, and  $\frac{1}{4}$  gill oil of caraways which had been shaken together for ten or twelve minutes.\*

\*366

Besides these, which seem to have been his two basic products, Vanherman also described his 'Carniola, or Venetian Paint'. It was, he noted, his-own invention, and could be used either by artists or for house-painting. Its preparation was simple:  $\frac{1}{2}$  pint of distilled water was added by degrees to a specially prepared drying linseed oil shaking the mixture until the two were incorporated. The medium was used with pigments which had been ground in turpentine with the addition of a little mastic varnish, and this could also be used to thin the paint when required.\*

\*367

It is of course impossible to say to what extent any of the above formulae were actually used. Vanherman presented his book as an attempt to reform the paint trade, and implied, as might be expected, satisfaction with his products on the part of his customers. He mentioned, for example, that on account of the disruption caused by the offensive smell of ordinary paint: 'A nobleman, one of my customers, would not suffer a brush of paint in his mansion for five-and-twenty years previous to his having my Aromatic Paint'; and also that in 1804 the then Duke of Richmond had ordered a new conservatory to receive three coats of 'Impenetrable Paint', but that it should be finished in ordinary white lead and linseed oil. After nine months, he claimed, the latter had disappeared, leaving his own paint 'as hard as stone and as perfect as when first laid on'. He also mentioned the opposition he had experienced from other sections of the trade, and it seems likely that his products were very well known.\* Altogether, the first quarter

\*368

of the nineteenth century seems to have been an age of continuing experiment, particularly perhaps in the field of external paint; but for eighteenth-century interior work it may be doubted whether these developments were of importance.

VARNISHES,  
VARNISH-PAINTS,  
AND LACQUERS

Varnish was a material having considerable significance for interior decoration during the whole of the period under review. It was used on architectural elements in each of the three distinct ways to which it lent itself: either as a simple transparent glossy finish for timber, oil paint, or distemper; as a medium for opaque paints; or as a coloured transparent lacquer. It was also of importance for japanned or painted furniture, although Watin observed that bois d'ébénisterie was generally waxed instead, a typical formula for the purpose, calling for 2 ounces of wax to be dissolved in 4 ounces of oil of turpentine, being given by the author of the Painter's... Pocket Manual.\*

The practice of varnishing internal joinery of fine colour and quality was mentioned by D'Aviler,\* and Watin gave a special formula for panelling and oak.\* Varnish seems to have been used in this way in England before the Civil War, one room, the Lord's Closet, at Wimbledon House being recorded as wainscoted with varnished oak in 1649;\* whilst in the mid-eighteenth century the Ripon varnish-maker, Williamson, included 'Pale Wainscot Var[nis]h' in his list.\* It was also used extensively on imitations such as the late-seventeenth-century graining and marbling at Kensington Palace\* and the doors at Somerset House grained in imitation of mahogany in 1780\* which with other instances are discussed at greater length in Part Two. References to the varnishing of distemper during the seventeenth and nineteenth centuries have been mentioned immediately above, whilst John Smith suggested the renovation of painted joinery and wainscot by washing, and when dry the application of a coat of 'common Varnish' to return it to a condition 'as near fresh as when first laid on'.\* The principal exponents at a later date of varnishing oil paint were, however, the Continental writers Watin and Tingry, the former excepting carved work, which, he noted, was generally stained rather than painted before varnishing in order to preserve the precision on the carving; whilst both discussed also the use of varnish as a medium for opaque paints in great detail.\* Although it is not clear that such techniques enjoyed contemporary popularity in England, a century earlier Stalker and Parker had enthusiastically preached

\*378 the advantages of japan, an opaque varnish-paint prepared to imitate that found on Far Eastern furniture, in the decoration of buildings;\* and, as will be shown, it seems likely that under French influence there was a revival of interest in finishes of this nature during the early nineteenth century. In common with later authors, Stalker and Parker also discussed the addition of alcohol-soluble transparent dyes to spirit varnishes in order to make transparent lacquers of varying colour, generally intended for application to metalwork and gilding.\*

\*379

Compared with oil paint and water-based finishes the subject of varnishes is extremely complex. Quite apart from the difficulty, already pointed out, of knowing exactly which resin was being used under any particular name and in obtaining samples of these for experimentation, a daunting number of formulations arrived at largely by trial and error, involving a considerable range of permutations and combinations, was advocated. It has also to be borne in mind that house-painting was only one amongst a large number of fields in which varnishes were used, and an all-embracing definitive study to which the house-painting formulae forming the material assembled below can be related would be an enormous undertaking, well beyond the scope of the resources available in the preparation of the present study. Coach-painting, fine art, and furniture all had considerable importance in the development of techniques, and it is impossible to do complete justice to the subject on the basis of house-painting taken in isolation. Nevertheless, an attempt to compile a tentative outline of practice in the field is necessary. In the section which follows, the formulae noted are first described and the methods by which varnish was applied discussed, taking in the first instance its use as a transparent finish. The use of opaque varnish-paints is next reviewed; and finally the preparation of transparent, coloured lacquers will be summarised.

#### Formulae

Three basic solvents were in use for varnish-making, and in his authoritative and painstakingly compiled work Watin used these as his basis for varnish classification, linking each to specific resins whose solubilities caused

them to be most appropriately employed. In particular he defined firstly le vernis clair in which alcohol was the solvent and sandarac the principal resin exploited, varnishes of this type, he noted, being used for interior work. His second category, le vernis gras, was made using a drying oil as the solvent and either amber or copal resin; whilst le vernis a l'essence de térébenthine featured mastic as the most widely used resin.\* Although he described this last variety as an inferior type, it seems to have formed the basis of many recipes for varnish-paint; and, whilst other resins were used to a considerable extent by other makers, the solvents he listed provide a sound way in which to approach the formulae which they gave.

#### Spirit varnishes

The most basic spirit, or alcohol-based, varnish is made by dissolving shellac in the solvent, and a simple preparation of this nature was described by Stalker and Parker who indicated that it was 'commonly used by those that employ themselves in varnishing ordinary woods, as Olive, Walnut, and the like'. 1½ pounds of 'the best Shell-Lacc' were added to a gallon of 'the best Spirit' and the two allowed to stand for twenty-four hours before being strained. It was, they noted 'a fit varnish for ordinary work that requires not a polish' and was frequently used by 'common Varnish-dawbers'. It could be improved for use on furniture by the addition of 2 ounces or more of Venice turpentine to each pint, whilst a further increase in the latter would fit it for use on coaches, signs, or houses when it would 'gloss with very little heat, and, if occasion be, without'.\* Their formula modified in this way may be compared with Watin's verniss à l'or (discussed in more detail below in connection with lacquers) in which stick lac and rosin were combined, and with Vanherman's 'lac varnish' in which 5 parts of lac and 1 part of turpentine were dissolved in 5 times their weight of warm alcohol;\* whilst Whittock indicated how a simple spirit varnish could be made by dissolving 5 ounces of shellac in 1 quart of spirit of wine, showing that this most basic form remained in use during the early nineteenth century.\*

A second type of spirit varnish was proposed by the



Table (viii)

Watin's formulae for spirit varnishes.<sup>1</sup>

	Alcohol (pints)	Sandarac (ounces)	Mastic (ounces)	Venice turpentine (ounces)	Elemi (ounces)	Shellac (ounces)	Rosin (ounces)
(A) White varnish for apartments	1	8		6			
(B) Semi-white for less clean colours	1	8		6 <sup>2</sup>			
(C) For oak panelling and ironwork	1	8		6		2	4
(D) For carvings, fanlights, and fine work	1	8	2	4			
(E) White for chimneypieces and polishing	1	8	2	4	1		
(F) For use with vermilion	1	6		6 <sup>2</sup>		3	4
(G) For dilution of colours	1	2	2	1 quarteron			

Notes and references

- 1 Watin (1785), pp.239-42.
- 2 Pisa or Swiss turpentine.

Continental writers Watin and Tingry, the latter drawing much of his material from Watin's book, but commenting on it and developing the formulae. Their proposals were based on sandarac resin which had also been used by Stalker and Parker in a varnish they described as 'inferior';\* but although the latter did not indicate that it could be used in the decoration of rooms, mentioning only its application to prints, Watin and Tingry specifically envisaged its employment for this purpose. Watin's formulae are tabulated for ease of comparison.\* To make the basic white varnish for rooms (A)\* the sandarac was first dissolved in the spirit of wine, after which the Venice turpentine was added. The only difference between this formula and that designed for application over less clean colours (B)\* was the use of a poorer quality of turpentine, which had presumably a yellowish cast. Interestingly, on the other hand, he considered Venice turpentine necessary in the varnish for oak panelling and ironwork (C),\* which represents the basic formula with the addition of shellac and rosin, the former of which would undoubtedly have contributed a darkening of the colour. Tingry reproduced this last formula (his No. 6), but reduced the quantities of sandarac and shellac to 6 and 4 ounces respectively, commenting that he felt Watin's amounts excessive. He also employed 32 ounces of spirit of wine rather than 1 pint, and included 4 ounces of ground white glass, both the latter being features common to other of his formulae. He described this varnish as suitable for wainscoting, balustrades, and rails indoors, and used it as a finish over a darker grey oil paint.\*

Watin's formula for woodcarvings and the joinery of fanlights (D)\* was again based on the first white varnish formula, but one-third of the Venice turpentine was replaced by a like quantity of mastic; whilst that for chimneypieces (E),\* which could be polished, contained in addition a small proportion of elemi. Tingry reproduced the first of these (his No. 3), but again modified it, using 32 ounces of spirit of wine and adding 4 ounces of ground glass. He described the varnish as used for furniture, chairs, mouldings, and the like, illustrating its use

over fine white, light grey, and pearl grey oil paint;  
but commented also that in his opinion the formula con-  
tained too much turpentine and its drying was for that  
reason delayed.\* Later Vanherman gave a formula for 'the  
\*391 French polish', dissolving 6 ounces of shellac, 6 ounces  
of seed lac, 3 ounces of 'juniper' (sandarac), and 2  
\*392 ounces of mastic in  $\frac{1}{2}$  gallon of alcohol;\* whilst Whittock  
combined mastic and shellac alone, specifying the solution  
of 12 ounces of the former and 1 ounce of the latter in 1  
gallon of spirit of wine, and suggesting the use of this  
\*393 varnish as a finish on dark imitations.\*

A third group of formulae is made up from those con-  
taining spirit-soluble copals. Tingry suggested the com-  
bination of 1 ounce of animi (which, it will be remembered  
from Chapter I, did not imply one of the hard copal resins),  
6 ounces of sandarac, 4 ounces of elemi,  $\frac{1}{2}$  ounce of cam-  
phor, 4 ounces of powdered glass, and 32 ounces of spirit  
of wine to make a varnish suitable for use on cut paper,  
dressing boxes, and the like (his formula No. 4), but  
\*394 elsewhere mentioned its use over light grey oil paint.\*  
Whittock too combined animi with sandarac in a hard white  
varnish for furniture made by dissolving 4 pounds of the  
former and 3 pounds of the latter by standing them in 1  
gallon of spirit of wine for two days. He also used copal  
with shellac in another varnish for use on imitations which  
contained 6 ounces of the former and 2 ounces of the latter  
in 1 gallon of spirit of wine, a formula close to that  
which had been suggested by the author of the Painter's...  
Pocket Manual in which the proportion of copal was slightly  
less at the equivalent of 4 ounces for the quantities of  
\*395 shellac and alcohol given by Whittock.\* No direct evidence  
for the situations in which any of the above formulae might  
be preferred for interior use has, however, been encountered.

#### Oil varnishes

Although a form of oil 'varnish' may be prepared by  
heating linseed oil for a long period to thicken it, and  
D'Aviler suggested that a varnish for exterior use could  
\*396 be made using a drying oil and litharge,\* such specially  
treated oils seem to have been used more generally for  
varnish-painting or as a gold-size; and for clear varnishes

resins such as rosin, copal, amber, and occasionally sandarac were dissolved in the oil. Suggestions made by various authors writing throughout the period under consideration for the addition of crude turpentine or rosin to oil paint in order to increase its lustre have already been noted; and, like John Smith,\* Whittock recommended use of the latter to make a linseed oil varnish for exterior application. In this, 1 pound of rosin was added to 4 pounds of linseed oil which had been boiled for one hour, the 'fat' from the surface having been removed with bread; and 4 ounces of oil of turpentine were added for use.\*

More generally, however, better resins would have been employed. Watin described copal and amber as the two principal substances used in oil varnishes, observing that they were never used together, amber being reserved for a varnish to be applied over dark colours or gold. Although, he indicated, both could be dissolved directly in hot oil, it was, he believed, better to melt them first as they were then less liable to burn.\* Varnishes of this type had been in use for many years, at least in fine art, William Salmon in his book Polygraphice (1672) having described the preparation of a varnish by dissolving melted amber in hot linseed oil;\* but Watin seems to be the first writer to mention their use in house-painting, giving three formulae. Vernis blanc au copal was made by adding 4, 6, or 8 ounces of hot linseed oil to each pound of melted copal resin. 1 pound of oil of turpentine was later added. Vernis au karabé ou a l'ambre was the same, the copal being replaced by amber. Vernis gras a l'or on the other hand contained lac in addition, 2 ounces being melted separately from 8 ounces of amber before being mixed. About 1 pound of oil of turpentine and  $\frac{1}{2}$  pound of linseed oil were then added.\* Vanherman too gave formulae for copal and amber varnishes, warning that:

'Varnish makers in general discolour their copal and amber varnishes by dissolving these resins in the oil, with a heat little short of boiling; whereas, if they were first melted in essential oil... a tepid heat

would be sufficient to unite and perfect a colourless copal varnish'.

For white copal varnish he recommended that 4 ounces of copal resin should be bruised and melted for twelve hours in a moderate oven. It was then to be powdered and  $\frac{1}{2}$  ounce of camphor gradually added, after which 3 ounces of white drying oil was to be mixed in by degrees. Amber varnish was made in the same way, but was, he noted, 'high coloured'.\*

\*402

Uniquely amongst the authors noted Whittock suggested the use of sandarac resin in an oil varnish. 2 pounds of sandarac, 4 pounds of drying linseed oil, and  $\frac{1}{4}$  pound oil of turpentine were simply boiled together;\* although sandarac is generally regarded as easily soluble in oil only after running.\* Oil varnishes were, Watin indicated, used for external purposes, spirit varnishes being used for interior work; although he added that for public buildings or in the choir of a cathedral verniss blanc au copal was to be preferred.\*

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#### Turpentine varnishes

Turpentine varnishes using mastic as the resin were in established use for the protection of oil paintings by the beginning of the period being considered, Salmon, for example, providing a formula for the purpose during the second half of the seventeenth century.\* Their primary use in house-painting, however, seems to have been as a medium for opaque varnish-paint rather than as a transparent finish, probably because, as Watin pointed out, they were lacking in lustre and could not be polished.\* He regarded them as inferior to spirit and oil varnishes, but both he and Tingry made extensive use of them with opaque pigments, their formulae accordingly being discussed below. One of those used in this way by Tingry was primarily a picture varnish, and the mastic varnish formula given by the author of the Painter's... Pocket Manual was specifically for this purpose, so that it seems unlikely that such preparations enjoyed extensive use for ordinary house-painting.\*

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It is possible, however, that cruder turpentine varnishes using rosin in solution were used to some extent in

this way, since the same author gave a formula in which  
5 pounds of clear rosin were to be dissolved in 1 gallon  
\*409 of oil of turpentine,\* and Whittock directed that 4 pounds  
of rosin should be dissolved in 1 gallon of oil of tur-  
pentine to make a varnish suitable for outdoor use and for  
\*410 varnishing common work in distemper.\* These may be com-  
pared with Watin's verniss d'Hollande discussed below which  
\*411 he used to make a green paint for coaches.\* In addition  
Whittock observed that oil of turpentine could be substi-  
tuted for the spirit of wine used as the solvent in his  
general purpose spirit varnish based on copal resin in  
order to make a varnish suitable for exterior work, but how  
\*412 sound this suggestion was is not clear.\* In general, there-  
fore, it seems unlikely that turpentine varnishes were of  
much importance for the straightforward finishing of  
interior work.

Application of  
varnish as a  
transparent  
finish

Little special preparation seems to have been considered  
necessary prior to the application of varnish on the surface  
of new joinery or oil paint, but in re-varnishing coachwork  
Pincot rubbed down the old surface with powdered pumice in  
water, and Vanherman stressed the need for work receiving  
\*413 French polish to be free from oil or grease.\* On distemper  
Watin stipulated a preliminary coat of parchment size, and  
for the special distemper system finished with spirit var-  
nish, le chipolin, which has been described above, it will  
be remembered varnishing was preceded by two coats of weak  
size. On oil paint, on the other hand, he specifically  
mentioned that no special preparation was needed; but both  
he and Tingry emphasised that when it was intended oil paint  
should be varnished, the last coat should have been diluted  
in oil of turpentine. Watin himself used pure oil of tur-  
pentine, but Tingry seems to have favoured the inclusion of  
a small proportion of oil, advising in connection with  
darker tints that where it was intended to cover them with  
varnish (as, he observed, was general practice on wains-  
coting), they must be mixed up with oil of turpentine to  
which a little oil had been added. This, he indicated,  
\*414 would make them better disposed to receive the varnish.\*

An exceptionally complex oil paint system designed to

receive varnish was described by Watin. He called it la peinture à l'huile vernie-polie and, being 'la chef d'oeuvre de la Peinture à l'Huile', was reserved for choice works such as a superb salon or an elegant carriage. After a preliminary coat of ceruse and a little litharge finely ground in linseed oil and diluted with an oil and oil of turpentine mixture, 8 coats of la teinte-dure were applied. These consisted of ceruse finely ground in drying oil and diluted with pure oil of turpentine. After rubbing down and polishing, 3 or 4 coats of the desired colour similarly prepared were superimposed; and the whole was finished with 2 or 3 coats of spirit varnish, finally re-polished.\*

\*415

In applying varnish, Tingry observed that the brush should be drawn rapidly over the surface, forwards and backwards, in large strokes; but, he warned, if drawn several times over the same place, the varnish would roll under it, and for that reason the strokes should not be allowed to cross one another. For the application of glossy varnish in this way, large flat brushes were, he indicated, employed; and he later observed that brushes of this form were known as varnishing brushes.\* Watin too described the brushes used, noting that they were made from badger hair, and that those in the form of a crows foot were known as blaireaux à vernir.\* The only writer noted to mention the use of a 'rubber' made by wrapping an absorbant material in a piece of cloth was Vanherman, who did so in connection with the application of French polish to furniture.\* It is quite possible, however, that the method could also have been used in polishing hardwood doors.

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Although Vanherman remarked that all spirit varnishes were to be laid on warm,\* Watin, perhaps reflecting the difference in latitude between France and England, specified their application cold. Nevertheless, he indicated, for the varnish to dry it was necessary for the room to be warm, oil varnishes requiring a slightly higher temperature.\* Laxton too remarked that varnished works required a fire 'to set the varnish, and prevent it from curdling'.\* For interior work, Watin, as will be clear from the references above, generally stipulated 2 or 3 coats of spirit varnish

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on both oil and distemper; whilst in connection with graining and marbling Bartholomew provided the following model specification:

\*422 'To varnish with the very best copal the whole of the imitations of wood & marble, the columns... having eight (or less as the case may be according to the goodness of the work) coats... each... polished thoroughly to a perfect gloss, and the other imitations having two coats of varnish.'\*

\*423 Rubbing down between coats in this way, using pumice powder, was recommended by Pincot in connection with coachwork, allowing two days for the varnish to dry between each;\* and the operation of polishing was described in some detail by Watin. For this, three substances were required, powdered pumice, tripoli, and starch. The second of these was described by Heaton as,

\*424 'originally a variety of diatomaceous earth obtained from North Africa, but the name has been very loosely applied to materials ranging from an impure crystalline quartz to a pure white amorphous silica.'\*

\*425 Watin noted that the material was obtained from Brittany, the Auvergne, and Italy, the first being the best, and that from the Auvergne second in quality. It was, Ure remarked, often confused with the English rotten stone found in Derbyshire and South Wales which was also used for polishing;\* and during the early years of the nineteenth century Lewis Berger had small stocks of both, amounting in 1810 to 1½ cwt. 'Lump Rotten Stone' valued at 14s. per cwt. and 14 lb. 'Tripple' valued at 24s. per cwt.\*

\*426 Stalker and Parker recorded that 'Tripoly' could be obtained from the ironmongers, and described how to reduce it to powder by scraping the lump with glass or a knife, warning:

'Circumspectly examin your Tripolee and clout, least some mischievous, unwelcom gravel, grittiness, or grating part, unawares steal in, and rase or scratch



\*427 your work; it will prove no easie matter to hide the  
flaw and damage'.\*

The polishing operation for oil varnish as described by  
Watin consisted of four stages: (i) rubbing with powdered  
pumice in water; (ii) rubbing with powdered tripoli and  
olive oil; (iii) polishing with a soft linen cloth; and  
(iv) finishing off with starch or blanc de Bougival and the  
palm of the hand. For spirit varnish the operations were  
the same, except that tripoli was used in place of powdered  
pumice in the first stage.\*

\*428 In 1803 Soane was charged 12s. for a quart of 'fine  
Copall Varnish' and a few years later Pincot recorded that  
\*429 a pint of varnish for coach-painting would cost 4s. 6d.;\*  
whilst Laxton and Skyring gave the following lists of prices  
\*430 for varnish work:\*

	Laxton (1818)	Skyring (1831)
Once in best copal	1s. per yard	9d. per yard
Twice	1s. 9d.	1s. 3d.
Three times	2s. 6d.	1s. 9d.
Spirit varnish per coat	6d.	6d.
Hand polishing to either	6d.	4d.

\*431 Earlier, in 1787, however, 6d. per yard was charged at  
Somerset House for cleaning and varnishing doors;\* and at  
Boughton House in 1706 varnishing was charged at 9d. per  
\*432 yard.\* In neither case is the type of varnish or number of  
coats mentioned, the same being true of late seventeenth-  
century items in the accounts for Whitehall, Kensington,  
and Hampton Court Palaces in each of which varnishing was  
\*433 listed at rates equivalent to 1s. 2d. per yard,\* so that  
the true position over seventeenth and eighteenth-century  
prices is unclear.

Varnish-painting  
and japan.

Having mentioned the practice of varnishing distemper,  
Tingry described the use of pigment in a varnish medium indi-  
cating that this method of applying colour possessed consid-  
erable advantages over the first, which, although cheaper,  
\*434 was liable to flake should the timber be damp.\* Also, as

will be remembered from Chapter I, certain pigments such as verdigris and the lakes are much more stable when used in this way, and Watin remarked that the only way orpiment could be used without inconvenience was in a varnish medium.\* Quite apart from the enhanced gloss which could also be obtained, it was clearly recognised therefore that the method presented certain technical advantages, and from an early date was applied to the decoration of buildings. During the late seventeenth century, for example, Stalker and Parker eulogised the use of japan, a varnish-paint, in the following terms:

'Japanning has taught us a method... for the splendor and preservation of our Furniture and Houses. These Buildings, like our Bodies, continually tending to ruin and dissolution, are still in want of fresh supplies and reparations: On the one hand they are assaulted with unexpected mischances, on the other with the injuries of time and weather; but the Art of Japanning has made them almost impregnable against both: no damp air, no mouldring worm, or corroding time, can possibly deface it'.\*

All three common varnish mediums were in use at different times, and formulae based on each are first discussed in turn, after which the build-up of coats will be described; and finally a brief assessment made of the importance of varnish-paint at various dates.

Spirit-varnish  
based formulae

Of the five colours of japan for which Stalker and Parker gave directions for application to furniture or coach bodies, two only, black and red, made use of pigment in the varnish medium, which was made from 1½ pounds of seed lac dissolved in 1 gallon of alcohol. The pigments used were lamp black or vermilion according to the colour desired, white lead being added to the latter to lighten the colour if necessary.\* Watin too used these two staining pigments in a spirit varnish ((F) in the formulae given above),\* illustrating employment of the black on ironwork and finishing it with two coats of clear spirit varnish.\* This formula was similar to that of his basic white spirit

\*439 varnish (A) already described, although the amount of sandarac was slightly reduced, and a poorer quality of turpentine was used together with shellac and rosin presumably in order to lend depth to the colour. For the dilution of colours in general, however, his formula (G)\* employed the more expensive resin mastic, in this case with a considerably reduced amount of sandarac and with a quarteron of Venice turpentine, probably to provide greater workability in the presence of pigment.

Oil-varnish  
based formulae

In contrast with Tingry, who used turpentine varnishes exclusively with pigment, Watin also used oil-varnish based formulae in three particular instances. The first was for the undercoats in his elaborate system blanc verni-poli à l'huile to be discussed below, and the second for his couleurs d'acier pour les ferrures. In both the white copal oil varnish described above was used, the pigments (ceruse, Prussian blue, lake, or distilled verdigris) being ground in oil of turpentine, a further addition of one-third being made for the latter formula.\* He also described the preparation of a black varnish containing Jew's pitch by melting rosin and amber separately, and dissolving the constituents in a drying oil. This was used with the addition of lamp black on a prepared black ground.\* Vanherman gave a comparable formula, combining asphaltum, oil of turpentine, and a preparation of his 'baked oil'; and suggested also the use of Frankfurt black or vermilion with the same medium, which was prepared by simmering  $\frac{1}{2}$  gallon of linseed oil with  $\frac{1}{2}$  pound of litharge for fourteen or fifteen hours until a cooled sample could be pulled out into a thread a yard long.\*

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Turpentine-varnish  
based formulae

Watin provided two formulae falling into this third and final group for varnishes intended for use with pigments. The first of these, used for the dilution of pigments ground in oil, was based on mastic, whilst le vernis d'Hollande intended for coach-painting using a verdigris and white lead mixture made use of rosin instead. For the former 4 ounces of mastic were dissolved in 1 pint oil of turpentine,  $\frac{1}{2}$  pound of crude turpentine being added;\* and Tingry gave a similar formula (his No. 12), the constituents of which were:

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- 12 ounces mastic
- 1½ ounces turpentine
- ¼ ounce camphor
- 5 ounces powdered white glass
- \*444 32 ounces oil of turpentine.\*

\*445 However, although Tingry illustrated its uses for dilution of pearl grey and (for fine work) yellow varnish-paint,\* he had presented it primarily as a varnish for valuable paintings; and he generally used a varnish of Watin's second type based on rosin for the dilution of pigments ground in oil or in one of a number of varnishes. Watin's formula for le vernis d'Hollande contained ½ pound Pisan turpentine and a quantity of galipot in 1 pint oil of turpentine;\* whilst the constituents of Tingry's varnish for

\*446 the dilution of colours (his No. 14) were:

- 12 ounces frankincense
- 5 ounces powdered white glass
- 2 ounces Venice turpentine
- \*447 32 ounces oil of turpentine.\*

For grinding the pigments prior to dilution, however, he proposed another formula (his No. 13) in which rosin and mastic were combined, indicating that it was similar to the varnish 'of Holland'. The ingredients were:

- 4 ounces new frankincense
- 2 ounces mastic
- 6 ounces Venice turpentine
- 4 ounces powdered glass
- 32 ounces oil of turpentine.

\*448 The solids were powdered and warmed together in the oil of turpentine for three hours, after which 2 ounces of prepared nut or linseed oil were added for use.\* However, although in giving this formula he indicated that pigments should be ground with it prior to dilution with his No. 14, in practice he seems to have recommended a much greater variety of combinations.\*

\*Table (ix)

Table (ix)

Varnish mediums recommended by Tingry for different colours.\*

<u>Colour name</u>	<u>Ground with</u>	<u>Mixed with</u>
Pearl grey	No. 12 with a little poppy oil	No. 12
Flaxen grey	No. 13 with a little poppy oil	No. 14
Walnut tree wood	drying nut oil	No. 14
Naples yellow, patent yellow, and yellow ochre	$\frac{1}{2}$ part drying nut oil and $\frac{1}{2}$ part oil of turpentine	No. 12 or No. 14
Jonquil	No. 13	No. 14
Buff	$\frac{1}{2}$ part common poppy oil and $\frac{1}{2}$ part No. 13	No. 14
Blue verditer	No. 13 and a little drying oil	No. 14
Compound green	$\frac{3}{4}$ part oil and $\frac{1}{4}$ part oil of turpentine	No. 14
Red for buffets	boiled oil and oil of turpentine	No. 14

\* Tingry (1816), pp.273-289.

The application  
of varnish-paints

La peinture a l'huile vernie-polie in which oil paint was finished with a spirit varnish, and the second paint system blanc verni-poli a l'huile with which Watin followed this in his section on oil painting have already been mentioned. The latter, he intimated, imitated and possessed the freshness of marble, a copal oil varnish being used as the medium. After a preliminary coat of ceruse with a little copperas as drier ground in nut oil and thinned with oil of turpentine (unless on stone, when nut oil was used for dilution), 7 or 8 coats of ceruse finely ground in oil of turpentine and diluted with the white copal oil varnish described above were applied. Each was rubbed down and polished in turn, and he noted that they would dry sufficiently quickly to allow the completion of 3 coats a day. Over these, 2 or 3 coats of white lead ground in nut oil and thinned with pure oil of turpentine were superimposed, followed by 7 or 8 coats of his white spirit varnish which were finally polished.\*

\*449

Later, he again turned to the use of varnish-paint on the panelling of apartments, observing that several houses in Paris had been decorated by this means, and also that all colours could be used in this way. The system was again complex, nine operations being required:

- (a) 1 or 2 coats of blanc de Bougival as for the fifth operation (e) in the special distemper finish le chipolin described above;
- (b) a coat of blanc d'apprêt consisting of ceruse and white lead in parchment size;
- (c) stopping;
- (d) mixing of the colour required;
- (e) a coat containing 2 ounces of colour in each poisson of varnish;
- (f) a coat containing 1 ounce of colour in the same;

(g) a coat containing  $\frac{1}{2}$  ounce of colour in the same;

(h) a further coat as (g) to ensure perfection.

\*450 Each coat was rubbed down prior to application of the next.\*

\*451 In this complex system, the gradual reduction in the amount of pigment in succeeding coats, a practice followed also by Tingry in his directions for painting buffets red, will be noticed, Tingry particularly stipulating that in general the final coat in varnish-painting should be almost colourless.\* The extent to which such complicated finishes would have been used on architectural elements seems unclear, however; and it is possible that both these and the seventeenth-century methods of japanning described by Stalker and Parker would have been considerably simplified when applied over large areas of wainscot, even in the most intimate 'japan closets' of the affluent, such as that provided at Dyrham Park in 1694. Nevertheless, Tingry does seem to have envisaged the use of varnish-painting even on plaster, since he indicated that for this a preliminary coat of warm size was essential. On wainscot, on the other hand, he proscribed the practice, although he said it was the usual custom, recommending instead use of a primer of white lead and one-sixteenth part of litharge which would, he observed, add a splendour and mellow tone to the varnish.\*

\*452 This is, of course, consistent with his general aversion to the use of varnish on a distemper ground. Information on the colouring of undercoats is scant; but practice may have been similar to that prevailing with oil paint, and it will be noted that Watin laid his three coats of tinted varnish-paint on a prepared white ground. For his black oil varnish, on the other hand, he used an undercoat of lamp black with a little umber ground in drying oil and diluted in pure oil

\*453 of turpentine.\* Finally, Tingry observed that the odour of turpentine varnishes could be killed by the use of an additional coat of spirit varnish on top;\* and, as implied by

\*454 the consistent use of such varnishes in the examples from Watin's book mentioned above, this seems to have been standard recommended practice in interiors.

The use made of  
varnish-paints

In assessing the overall importance of varnish-painting during the period being considered, contemporary technical literature provides few pointers giving an insight into the architectural situations in which it was actually used. The Japan Closet at Dyrham, now destroyed, was executed at a cost of 5s. per yard;\* but, although in this case it cannot be known whether the room was finished in a plain colour of japan or whether it received its name from being embellished with oriental motifs, a few years later Neve indicated that 'plain Japan, either black or white' would cost 3s. 6d. or 4s. per yard.\* By the mid-eighteenth century on the other hand, at a date when as already seen a fashion for completely matt paintwork prevailed in England, Dossie described varnish-painting apparently only in connection with the painting of miniatures on copper.\* He noted too a decline in the use of japan on furniture, observing that it was not 'practised so frequently on chairs, tables, and other furniture of houses, except tea-waiters, as formerly', but added it had been introduced 'for ornamenting coaches, snuff-boxes, and skreens, in which there is a rivalry betwixt ourselves and the French'.\* Of course seventy years earlier as already noted Stalker and Parker had mentioned the use of japan on coach bodies; but Dossie further remarked that the art of painting in varnish had been greatly improved by the manufacturers at Birmingham,\* and it will be recalled that several of Watin's formulae were designed specifically for painting the ironwork of balustrades and other small iron elements. On the other hand, at the time of writing nothing has been encountered in any eighteenth-century building account to confirm its employment in England in this way, and it may be therefore that in this country the use of varnish-paint had become confined to coachwork and other moveable objects, although the American author, Reynolds, suggested a modest gill of copal varnish could be added to each gallon of oil for interior work.\*

During the early nineteenth century, however, under the influence of Watin and perhaps to a greater extent Tingry, whose book it will be recalled was published in English in 1804, it seems possible that such techniques may once again



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have been applied to architectural interiors as well as the coaches for which alone Pincot gave instructions.\* Evidence for this is provided by the range of 'Antique Ornamental Paints' being produced in 1816 by the London Patent Colour-Works, which may well have been related to a range of 'Couleurs Lucidoniques' made in France about 1800. The latter were described by Rondelet as a new method of painting introduced by Madame Cosseron of the rue Dauphine using colours prepared in spirit of wine. Rondelet listed an impressive range of over forty tints, adding that the paint was ready prepared in liquid form to be thinned with the same solvent if necessary. It was, he stated, odourless and dried with a good gloss, obviating the need for a subsequent coat of varnish, and, having been tried and tested since 1803, was claimed to be suitable for both interior and exterior use.\*

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In introducing their range, the proprietors of the London Patent Colour-Works advertised the 'Antique Ornamental Paints' as being manufactured without either linseed oil or oil of turpentine, claiming that the vehicle was intended as an imitation of the 'celebrated Encaustum of the Ancients', which had been described by the Roman authors Pliny and Vitruvius.\* Although a great deal of energy had been expended during the latter half of the eighteenth century in both France and England in attempting to ascertain the medium used for painting during classical times,\* it seems doubtful that the 'Antique Ornamental Paints' in their final form would have represented great authenticity, and they seem rather to have been a variety of varnish-paint, being claimed to dry within one hour and being 'partly composed of materials possessing a strongly evaporative principle'. The Memoir on the Antique Paints published by the same company seems to confirm this:

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'Impelled by these considerations, the Inventor of the Paints now offered to the Public, after a series of experiments infinitely laborious and expensive, and pursued with the most unremitting industry, has at length succeeded in producing a combination which he considers to bear an affinity to, and answer the

general purposes of, the celebrated Encaustum of the Ancients. This discovery is likely to be productive of material advantage to the Public, by enabling them to obtain at a comparatively trivial expense, Green and other Fine Colours, applicable to every useful and ornamental purpose, whether interior or exterior, infinitely surpassing in richness and brilliancy of appearance, and fully equalling in durability any that can possibly be prepared in the usual method with Linseed-Oil, although such of equal quality cannot be manufactured at less than double the expense.'

'These colours were originally intended to be used with the application of heat; the novelty however of the process of ignition, so materially deviating from the accustomed mode of applying paints, was found to be decidedly incompatible with the long-established prejudices, and occasioned such an infinity of objections, that the Patentee was constrained to entirely relinquish the idea, and, by a variation in the process, afford to the respective Colours a sufficiently increased degree of fluidity to enable purchasers to apply them in the usual method. They consequently will now require no particular management further than that usually adopted with every species of Varnish-Paint'.\*

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It thus seems clear that during the early nineteenth century attempts were being made to re-introduce varnish-paints for architectural work in England; but again, the actual extent to which these were successful remains to be seen.

Coloured  
transparent  
lacquers, or  
'changing  
varnishes'

To complete this summary of the way in which varnishes were prepared and applied attention must finally be turned to lacquers. Those for interior use seem almost invariably to have been based on spirit varnishes made using lac, a resin which in its unrefined form would confer an orange-red tone, and which for this reason was undoubtedly felt appropriate in adding depth to the colour of fine cabinet timbers.\* The colour could be further deepened, however, by the addition of certain spirit-soluble dyes and resins;

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and D'Aviler, for example, seems to have recommended the use of such a lacquer on wainscot, observing that when it was of good quality one merely gave it several coats of varnish made using 'gomme adraganthe' (by which he presumably meant dragons blood rather than gum tragacanth) and spirit of wine.\* To most other writers, however, the main application of lacquer was on metal, and Dossie in particular defined 'laquering' as 'the laying either coloured or transparent varnishes on metals, in order to produce the appearance of a different colour on the metal, or to preserve it from rust and the injuries of the weather', mentioning its use on brass or copper locks and on nail heads.\*

Formulae given by different authors are, naturally enough, concerned with coloured lacquers. Stalker and Parker, for example, gave the following directions for making 'common Lacker':

'Take one quart of Spirit, put it into a Pottle-bottle [2 quarts],\* of Shell-Lacc eight ounces, beaten small enough to enter the bottle; shake 'em well together; having stood till quite dissolved, strain it, and reduce to powder a small quantity of Sanguis Draconis, which with a little Turmerick tied up in a rag put into it, grant it a days continuance in that posture, at your leisure hours shaking it. You may alter the colour, heighten or abate it, by adding or diminishing the quantity of the two latter ingredients.'

Alternatively, they indicated, dragons blood and saffron could be used for colouring, or annatto and gamboge, adjusting the proportions of each to achieve a redder or more yellow colour as desired. For use in the open air, two penniworth of Venice turpentine could be added to each quart of liquor; and although in this case, they warned, 'it may look dull and misty immediately after every lacker-  
ing, that fright, that seeming discouragement, will quickly vanish; that thin cloudy vapour, will be dissipated by its sudden, and piercing lustre.'\*

In general, Stalker and Parker advocated the use of

lacquer in order to make silver leaf look like gold (a practice to which Félibien, John Smith, and Dossie also referred). They were also writing with furniture uppermost in their minds, and were thus able to recommend warming the piece to be lacquered, in which case, they noted, a second coat could be applied after fifteen minutes, adding:

'If two or three varnishings will not produce a colour deep enough, oblige it with a fourth; but remember, if you should carelessly do it too deep, all assistance will be insignificant, and no remedy whatsoever will avail you.'

\*471 They concluded by describing how the effect of the lacquer could be heightened by darkening the hollows and the ground of any carving.\*

\*472 Besides Stalker and Parker, a few years earlier Félibien too had noted the use of dragons blood and gamboge in lacquers for silver leaf, and John Smith recommended the use of 'Gum-Lake' (presumably unrefined seed lac) in spirit of wine for the same purpose.\* Similarly, Watin provided a formula for verniss à l'or which contained 4 ounces each of stick lac, gamboge, dragons blood, and rosin, plus 1 ounce of saffron, each of which had been dissolved in 1 pint of spirit of wine and allowed to stand

\*473 in the sun for fifteen days.\* Vanherman too described how a lacquer might be made from any spirit varnish by the addition of dragons blood, turmeric, gamboge, or annatto, although he felt that the colour imparted by shellac was

\*474 'the most proper';\* and Tingry's later editor mentioned in addition red sandal wood (which he identified as that from Pterocarpus santalinus) and alkanet root to colour lacquers

\*475 which he referred to as 'changing varnishes'.\* The application of lacquers to gilding and silver leaf is discussed below.

Having completed this account of the techniques used for the decoration of buildings in oil paint, distemper, and varnish, attention may be turned to the further embellishment of interiors by means of gold and silver. Gilding has found an important place in the decorative repertoire of many cultures, and its capacity to lend grandeur and sparkle to architecture was naturally exploited during the period being considered. Two main methods were used in interior work, oil-gilding and water-gilding. The latter was the more expensive of the two, and was generally reserved for furniture and other moveable objects where its ability to take a fine burnish could be appreciated to the full; whilst architectural ornament was generally oil-gilt. Here too, however, a certain amount of finesse was possible, and, quite apart from the matter of gilding style which is dealt with in Part Two of this study, variations could be introduced by such devices as modifying the colour of the leaf. Besides gold and silver a number of alloys could be used, and it was also possible when occasion demanded to embellish the work further by means of transparent glazes. This aspect of practice will also be discussed fully in due course, but attention must first be given to the materials and tools which were in use.

Gilding materials  
and tools

During the seventeenth century, gold leaf was sold in much the same form as that in which it is available today. Sir Roger Pratt noted that it was obtainable from a gold-beater in Black-horse Alley near Fleet Bridge by the name of Hilliard in books of 25 leaves at a cost of 2s. per book. Each leaf was, he said, about 3 inches square, and four books were called a hundred. Elsewhere, on the other hand, he noted that the books contained 24 leaves; and John Smith, who gave precisely the same figures for the size of leaf and price of the book, also suggested the contents as only 24 leaves.\* With regard to eighteenth-century leaf, in 1750 the gold-beater Thomas Evans was paid £115 10s. for '38,500 of leaf gold at £3 per mille', a figure which works out on the above basis at roughly 1s. 6d. per book;\* although whether this reflected a reduction in the price of leaf by that date, or a lower rate charged for a large quantity is not clear. It seems too that different sizes were sometimes

available, since during the early nineteenth century Lewis Berger had stocks of 'Small Gold Leaf' valued at 6s. per hundred, and the French writer Félibien had commented to this effect, observing also that a thicker grade was used on metals than on timber.\* The latter material, known today as double gold, seems to have been used in exterior work during the eighteenth century, since references to 'Double Leaf Gold' in this context appear in the early eighteenth-century accounts for St. Paul's Cathedral, London, and 'double Gold' in those of 1772-4 for work at Osterley.\* It may also have been used on furniture, however, since the pier mirror from the Tapestry Room at Croome Court, Worcestershire, was 'Gilt in the very best Double Burnish'd Gold',\* although it has been suggested that this implied rather the application of two layers of leaf.\*

Silver leaf was also manufactured, Berger again having stocks of a 'Small' variety at the equivalent of roughly 1s. 8½d. per hundred;\* whilst Pratt had given its cost as 3d. per book, and mentioned also 'party gold' which had one side gold and the other silver. This two-ply economy product cost 6d. per book, and was clearly regarded as a poor substitute for proper gold leaf, being, he suggested, used for pageants.\* This notwithstanding, even more debased products became available, and, writing in the mid-eighteenth century, Robert Dossie mentioned another cheap substitute for gold leaf, remarking:

'There is, besides the true leaf gold, another kind in use, called Dutch gold, which is copper gilt, and beaten into leaves like the genuine. It is much cheaper, and has, when good, greatly the effect of the true at the time of its being laid on the ground; but with any access of moisture, it loses its colour and turns green in spots.'

Nevertheless, he indicated, it was adequate for use in theatres where it would be seen only in artificial light.\* To date, no further information has come to hand about the use of such substitutes, but it seems likely that in good

domestic work, genuine gold leaf would generally have been employed.

\*485 By alloying the gold with carefully adjusted proportions of other metals, it is possible to vary the colour of genuine leaf. In 1825 the author of the Painter's... Pocket Manual, for example, commented that the principal colours available were red, green, and yellow;\* and examples of the use made of these during the seventeenth and eighteenth centuries are discussed in Chapter VII. Their employment was not without its dangers, however, and Dossie sounded a note of caution, indicating that if the gold was alloyed with silver it could become too pale and greenish, whilst if too much copper was used it would in  
\*486 time 'turn to a yet much stronger green'.\* His remarks were undoubtedly justified, and the (presumed) green gold in the Boudoir at Attingham Park, Shropshire, has now discoloured in many places.

#### Tools

In order to cut the leaves of gold to size, they were laid out on a gold-cushion made of suede leather nailed over stuffing to a wooden base. John Smith observed that the cushion was 'generally made of a smooth grained Basil Skin, the flesh-side outward... well stuffed out with Cotton or Wooll, very hard, plain, and flattish'. Stalker and Parker, however, merely recommended the use of tow as a filler. The size of the cushion could be varied, Smith indicating the use of a wooden base six inches square, although Stalker and Parker specified a 'board 10 inches one way, and 14 the other', dimensions commensurate with those suggested by Dossie. Perhaps, however, Smith had in mind that only one leaf was to be dealt with at a time, but Stalker and Parker related that experienced tradesmen would frequently shake a whole book of gold onto their cushion at a time, individual leaves then being singled out as required with the gold-knife to be described in a moment. For this, much more space would obviously be needed; and an added refinement to the cushion might be provided by the gilders, who, they observed,

'commonly border their Cushion at one end, and four or

five inches down each side, with a strip of parchment two inches high, intending by this fence and bulwark to preserve their Gold from the assaults of Wind and Air, which if moved never so gently, carries away this light body, which willingly complies with its uncertain motions.'\*

\*487

The gold was cut to the size required using a 'thin, broad, sharp, and smooth-edged knife'.\* According to John Smith this could be either a 'Case-Knife, or else a slip of the hollow Spanish-Cane, cut up to a smooth and sharp edge with a good Pen-knife'. A knife made from cane in this way was, he indicated, preferable to a steel implement, since the gold would not stick to it, whereas to prevent this when using a steel knife it was necessary to wipe it continually on a clean dry cloth.\*

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Once cut, there were several ways in which the gold could be transferred from the cushion to the area to be gilt, which, in architectural work, would generally have been prepared to receive it with an oil gold-size. Smith described one version of the tool, or 'Pallat', used to effect the transfer, indicating that it was made from a flat piece of wood about three inches by an inch, on which was glued a piece of fine woollen cloth. To use it, one breathed lightly onto the wool in order to moisten it and placed it gently over the piece of gold which had been cut to size on the cushion. This would then adhere to the wool, and could thus be conveyed to the prepared work. The tool, which was, of course, only suitable for 'flat and plain work', could, he added, be made large enough to carry a complete leaf of gold if desired.\* Interestingly, Stalker and Parker did not refer to this very basic implement, and indicated instead that the 'Pallet' used by artists for 'taking up and laying on whole leaves at a time' was made from the end of a squirrel's tail, fanned out, and fastened to the broad end of a flat handle split to receive it.\*

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If, on the other hand, it was carved work which was to be gilt, Smith indicated an alternative method was used



to transfer the leaf. In this case, he said, the,

'Painters do usually take up their gold, either from the Book or Cushion, with a bunch of Cotton Yarn, a little moistned with their breath'.

\*493 By this means the gold could be pressed into the hollows of the work, whilst, he added, a 'bunch of good fine Wooll' would do as well.\* For the same purpose, Dossie too recom-  
\*494 mended the use of cotton wool formed into a ball, but added the refinement of tying it up in a piece of fine linen rag in order to prevent the fibres adhering to the gold-size.\*  
\*495 Where, on the other hand, the gold was to be 'laid on within the hollows of carved work' (that is, presumably, where the carving was undercut), John Smith later indicated it was necessary to use a fine camel hair brush to effect the transfer.\*

Oil-gilding  
Priming

The method of gilding used on architectural ornament was generally that known as oil-gilding, in which the area to receive the gold leaf was prepared with an oil-based gold-size. In cases where the work had not received previous decoration in oil paint, Dossie recommended the preliminary application of a special primer made from drying oil and a little yellow ochre. A small proportion of ver-  
\*496 million might, he said, also be added.\* Stalker and Parker, on the other hand, recommended the use of white lead, ochres, or umber, besides an alternative composition made from the residues of old paint, the washings of brushes, and so on. These were to be strained carefully into a pot, and light-  
\*497 ened if necessary with a little white lead.\* Félibien and  
\*498 Watin also mentioned a similar practice.\* D'Aviler too suggested the use of a priming where the beads and fillets of wainscot previously painted white were to be gilt. It was made from yellow ochre or rouge brun, but he gave no formula for his gold-size which, he presumably felt, would  
\*499 lack body if applied directly over white.\* Priming over existing oil paint in this way seems otherwise unnecessary.

Gold-sizes

Late seventeenth- and eighteenth-century formulae for gold-size are fairly consistent, and invariably contain

yellow ochre. It appears, however, that the early nineteenth century saw changes in this. To prepare gold-size, John Smith simply ground yellow ochre in 'fat Oyl'. The ochre was to be of an especially fine quality prepared either by first grinding it with water, which, he said, was the common way, or by levigation to separate the coarse particles. In either case it was, of course, dried before use. The yellow ochre was ground into the oil in the same way as ordinary oil colours, although more labour was necessary, since, apart from the obviously greater viscosity of the oil used, it was, he said, to be ground 'very fine, even as Oyl itself'. The finer it was, the greater would be the lustre of the finished gilding. Regarding the consistency desirable for the size, he indicated it was not to be,

'so weak as to run when you have laid it on; nor so stiff, that it may not work well, but of such a competent body, that after it is laid on, it may settle itself smooth and glassy'.

\*500 It was for this reason that a 'fat Oyl' was necessary rather than ordinary linseed oil; but although elsewhere in his book Smith described two methods (noted in Chapter I above) for the preparation of 'fat Oyls' he does not seem to have made it clear whether it was simply boiled oil or sun-thickened oil he had in mind.\* Almost certainly, however, it was the latter, since Stalker and Parker specifically described the preparation of sun-thickened 'Fat Oyl' in connection with their formula for gold-size, which reflects generally that of Smith. Exposure was, however, continued for five or six months, and no drier was added, the process being effected in lead pans rather than in a glass vessel. The product, they suggested, would become,

\*501 'as thick as Turpentine, the longer it stands the more fat it will be, and by consequence the Gold will require [sic - acquire?] a better gloss; if it arrive to the consistence of butter, that it may be almost cut with a knife, reserve it carefully, and as the best for use that can possibly be made.'\*

Dossie too described the manufacture of sun-thickened oil in the context of gilding, suggesting that an inch depth of oil placed in shallow pans should be covered with five inches of water and exposed to the sun for six weeks until it approached the consistency of treacle. The oil and water were then to be separated and the oil warmed to allow any impurities to settle before being decanted for use. Oil thickened in this way would, he intimated, be whiter than that prepared without water.\*

\*502

In use, Dossie suggested that the sun-thickened oil could be diluted with ordinary drying oil if too thick to be worked, and could either be ground on its own with the yellow ochre or after being combined with up to an equal part of 'japaner's gold size'. In the latter case it would dry more quickly, but the gilding would be less glossy. In his section on 'japaner's gilding' (for which gold powder rather than leaf was used) Dossie gave two formulae for this variety of size. The first, although complicated, was, he indicated, the generally approved type, but the second, of simple character, was in his opinion just as good. To make the first, 1 ounce of powdered 'gum animi', 1 ounce of asphaltum, 1½ ounces of red lead, 1½ ounces of litharge of gold, 1½ ounces of umber, and 1 pound of linseed oil were boiled together until, when cooled, the product had a thick consistency resembling tar.\* His second formula consisted simply of 4 ounces of animi boiled with a pound of linseed oil in a similar way. For fine work he recommended the use of two or three coats of gold-size.\*

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Compared with those described so far, the formula given as a 'mordant' by the author of the Painter's... Pocket Manual possesses a completely different character, being based on oil of turpentine; and, although stained with gamboge, contained no body colour such as the yellow ochre of the eighteenth-century formulae. It consisted of 1 ounce mastic, 1 ounce sandarac, 1 ounce gamboge, ¼ ounce turpentine, and 6 ounces oil of turpentine; whilst, he added:

'For bronzing or very pale gilding, a mixture of asphaltum and drying oil, diluted with oil of tur-

\*505

entine is much recommended.\*

The extent to which such transparent sizes came in architectural work to supersede those of earlier type is not evident, but extant examples of gold-size containing a dense yellow body reflecting eighteenth-century practice have been noted in the course of technical investigations in the Balcony Room at Dyrham Park, Avon (1694), in the Cabinet at Houghton, Norfolk (c. 1730-40), in the Drawing Room at Osterley Park, Middlesex (1772-4), and in the Back Drawing Room at 15, St. James's Square, London, where the gilding was added at some date following Samuel Wyatt's alterations in 1794.\*

\*506

Application of  
the leaf

Once applied, the size was allowed to dry to a condition in which the gold would adhere without sinking in when applied by the methods described. It was important that this be carefully judged, and Stalker and Parker related two tests which could be used to determine whether the size was in the right condition, suggesting firstly that one should breathe on it. If the size misted over it was ready for the gold.\* Their second test was described also by John Smith, who indicated that the correct moment could be determined by touching the size with the tip of the finger,

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'for if your Finger stick a little to it, and yet the Colour come not off, then it is dry enough'.

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He cautioned particularly against laying on the gold if the size was either too wet or too dry.\*

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Once the gold had been applied, Stalker and Parker recommended a day should be allowed to elapse, and the work beaten over gently with a large fine hogs hair brush so that the gold might 'be pressed close, and compelled to retire into all the uneven, hollow parts of the Carving'. Afterwards, all the excess gold was to be brushed onto a sheet of paper for re-sale.\* Later, Dossie recommended the use of a very soft hogs hair brush for the same purpose.\*

## Water-gilding

Water-gilding, or burnished gilding as it was often called, provided a much higher quality finish than oil gilding. It was, however, more time consuming to perform, and could not be used externally since the weather would quickly destroy it. The method was fully described by Félibien, Stalker and Parker, Dossie, and Watin, and although there are differences of detail, in essence all their accounts are basically consistent. The piece to be water-gilt was first sized with one of the better qualities available, such as parchment size; and a ground of gesso, generally made with chalk and size, built up by means of a number of coats. When dry, this was polished and one or more coats of yellow ochre in size could then be applied and polished prior to laying the final assiette. This was generally made from a particularly fine variety of red ochre known universally today as Armenian bole, variations of this name being met with in seventeenth- and eighteenth-century literature. The pigment was mixed with size, often with the addition of a small quantity of some sort of greasy or waxy substance such as tallow, olive oil, or even butter. It was applied warm, allowed to dry, dampened, and, when in exactly the right condition to receive it, the gold applied, a matter which required much skill and judgement. After being allowed to dry to a certain, and again nicely judged, extent, the gilding was burnished using a dog's tooth or a piece of agate. Stalker and Parker indicated a strong preference for the latter, which, \*511 they said, was 'of late... more highly esteemed'.\*

Using this technique, widely differing degrees of finish could be achieved. Stalker and Parker indicated that in gilding a frame, the ground of the carving and other parts could be left unburnished, 'which being rough in respect of the other, sets off and beautifies the burnish- \*512 ing!.\* The practice was mentioned by Félibien too, who indicated three degrees of finish: that where the gold was burnished; that where the gold was not burnished; and a third where the ground on which the gold was laid had alone been \*513 burnished.\* A particularly clear example of the juxtaposition of matt and burnished gilding in this way may be seen

on at least one of the design drawings by the London cabinet maker John Linnell, who was active during the second half of the eighteenth century, and on a design by Thomas Chippendale for a mirror at Nostell Priory, Yorkshire.\*

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The normal place for water-gilding in the English interior seems undoubtedly to have been on furniture, although this might, of course, include the frames of mirrors and pier glasses; and in later years also the gilt mouldings of the wall panels. Dossie, for example, remarked that burnished gilding was,

'seldom practised but upon wood, and at present mostly in the case of carved work, or when carved work is mixed with plain';\*

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and a quantity of 'Reeds and Ribbon to form Pilasters & frames round Glasses' together with the necessary 'Carv'd flowers on Block's Burnish'd Gold' to form the junction between the mouldings were supplied to Thomas Anson for the Front Drawing Room on the first floor of 15, St. James's Square, London, in 1794.\* Nevertheless, Félibien had mentioned the water-gilding of stucco, D'Aviler noted the use of matt or burnished gold as a ground for coloured ornament, and Watin described fully the method for gilding a room in burnished gold.\* Such references suggest that in France, at least on occasion, water-gilding may have been employed on architectural work, but few have yet been encountered which might help to indicate whether this too was English practice. Interestingly, the earliest is at Carlton House, a building considerably influenced by French tastes. In his History of the Royal Residences (1819) W.H. Pyne described John Nash's Golden Drawing Room as 'gilt in burnished and matted gold'; and the accompanying plate seems to have set out deliberately to emphasise the brilliance of the highlights typical of the technique, apparently confirming that it was indeed water-gilding which had been employed.\* On the other hand, John Rutter's reference to the mouldings of the vault in

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the Oratory at Fonthill developing 'a net-work of burnished gold over our heads', contained in his Delineations of Fonthill (1823) could merely represent poetic licence.\* Both buildings, however, were obviously of an exceptional opulence, and the water-gilding of architectural ornament must clearly have reflected this character.

Variations in practice where different varieties of leaf were employed

\*520 Where silver leaf was to be used, the 'gold-size' was made white in colour. Dossie referred to the use of flake white for the purpose,\* and John Smith, who in 1687 recommended the addition of 'a very little Yellow-Oaker', later amended his directions to read:

\*521 'Silver-Size is made by grinding White Lead with fat drying Oyl, some adding a very little Verdigrease to make it bind.'\*

\*522 In water-gilding, Stalker and Parker substituted ground tobacco-pipe-clay for the yellow ochre, indicating the optional addition of lamp black if it was desired to produce a size of a light ash colour.\* Variations might also be made in the colour of the ground, moreover, where green or red gold were used. Again in connection with water-gilding, Watin indicated that on those parts where or verd was to be laid, the size should be made of ceruse, Prussian blue, and stil de grain mixed to the colour of vert d'eau; whilst for or citron, a combination of ceruse and stil de grain alone was to be employed.\*

\*524 Although silver leaf appears to have been employed in the 1770s in the Yellow Drawing Room at Harewood House, Yorkshire,\* Dossie remarked that it was seldom used on account of its tarnishing, adding that for this reason it was necessary that it should be varnished (as, indeed, was done at Harewood).\* He also referred to the practice of

lacquering silver leaf in order to give it the appearance of gold, a matter on which John Smith too had provided advice, indicating that,

\*526 'the Common Painters do now more generally in gilding use more Silver than Gold, in most Works that are not much exposed to the air, to which they afterwards give the Colour of Gold, by means of the Lacker-Vernish,... made of Gum-Lake, dissolved in Sprit of Wine, and laid over it.'\*

Other formulae for lacquer and the method of its application to silver leaf have been described above, but although recipes are found in trade manuals throughout the period covered in this book, it will be remembered that lacquer had other uses, and this need not imply that it was always in favour. Indeed Dossie observed that the lacquering of,

'frames of pictures, &c. previously silvered, in order to give them the effect of gilding... is now greatly disused',

\*527 a remark which it seems more than likely applied also to the use of silver leaf with lacquer on architectural elements.\*

Further treatment  
of the gilding

\*528 After burnishing the carved parts of work which had been water-gilt, Stalker and Parker described the 'matting' of the remainder by means of a coat of size or lacquer. Following this, the work could be further 'set off or repossed' with an orange coloured lacquer used to 'touch the hollownesses' of the carving in order to add depth to leaves and foliage.\* John Smith also indicated that after gilding had been completed it was possible, if desired, to,

\*529 'Diaper or flourish on it with thin burnt Umber... tempered but thin, so that the Gold may appear through it'.\*

Another method of heightening the effect of water-gilding was described by Félibien, who mentioned the use of vermilion applied in the crevices of the ornaments and sculpture to



\*530 bring out the 'fire' of the gold.\* On the other hand  
Stalker and Parker remarked that although they knew some  
used vermilion in this way, they were 'not reconciled to  
it' since they did not feel it was so pleasant and agree-  
able to the eye as the method they had already described  
\*531 using a transparent lacquer.\* Nevertheless, Dossie indi-  
cated the optional use of body colour in the hollow parts  
of the work, also calling this 'matting'. The colour  
chosen was, he said, to be near that of the gold, and  
could be made from red lead and vermilion ground in white  
of egg, although he felt that a mixture of yellow ochre  
and Dutch pink would be better. Other suitable, and more  
permanent, combinations were provided by slightly burnt  
terra di Sienna or by a mixture of raw Sienna and red lead.  
Isinglass size was, he added, as good for the purpose as  
\*532 white of egg.\*

It seems doubtful that such refinements would have been  
commonly practised on ordinary architectural oil gilding,  
although glazes of the type mentioned by John Smith could  
well have been used in trompe l'oeil work. Gerbier, for  
example, gave a price for 'Painting in white and gold, upon  
\*533 flat moulding, and set off with shadowing, like carving';\*  
and an instance of similar work may have survived on a door-  
case in the Tapestry Room at West Wycombe Park, Buckingham-  
\*534 shire.\* It will be remembered, however, that the 'matting'  
techniques on the other hand were mentioned generally in  
connection with water-gilding, and in the case of archi-  
tectural ornament it seems likely that the practice of  
'party gilding' described in Chapter VII below was devel-  
oped in order to meet the need felt during the second half  
of the eighteenth century for greater 'variety' than was  
provided by unrelieved areas of gilding. Other variations  
too were developed, including that described by the early  
nineteenth-century upholsterer George Smith, which he termed  
rehaussée d'or, in which hatched areas of gold were employed  
\*535 on a dark ground;\* but these were, perhaps, more generally  
a matter of style and taste than technique, and further  
discussion of them will be reserved for Part Two.

Prices

\*536 Although Pratt remarked: 'They ordinarily demand 8 groats a foot square gilding. Or 8d. a yard one inch broad', adding that both represented the same rate (2s. 6d. per square foot),\* this figure is rather lower than prices quoted by others; and Gerbier, for example, writing in 1663, observed that,

\*537 'rich carved frames, painted and gilded, the gold fifteen Inches broad, the ground a fair white colour cost five shillings a [linear] foot.\*

\*538 This works out, of course, as 4s. per square foot, and even allowing for the fact that, on the basis of other figures that he gave, the cost of the white may have been as much as 1s., there is still a noticeable difference in price. Just over a century later, in 1776, the first edition of the Builders Price-Book quoted a rate of 3s. 9d. per square foot for 'Gilding with Gold', a figure similar to that given by Gerbier; and the same price appears too in later eighteenth-century copies, such as those of 1787 and 1794.\*

\*539 Confirmation of this rate for oil gilding in the 1770s and 1780s is provided by a number of buildings accounts, including David Adamson's bill for work carried out in the Drawing Room at Osterley Park, Middlesex, between 1772 and 1774. The majority of prices for enriched mouldings, both solid and partly gilt, whose girths varied between half an inch and six inches, work out at exactly 4s. per square foot, although there are small variations, the lowest being 3s. 6d. and the highest 4s. 3½d.\* Similar figures were charged by Charles Catton for work in the apartments of the Royal Academy at Somerset House in 1780. In the Library certain items of 'very rich Ornament' were partly gilt in green gold at a rate of 4s. per square foot, and a similar rate was charged for oil-gilding on similar areas. Mouldings in oil-gilding were charged for at 3s. 6d. per square foot, and the same rate applied to the gilding of mouldings in the Council Room in both ordinary and green gold.\*

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By the time the 1810 and 1813 editions of the Builder's Price-book were published, however, these prices had increased,

although, perhaps, to a lesser extent than those of house-painting in general; and for ordinary gilding figures of 4s. to 5s. 6d. were suggested. Early nineteenth-century copies, moreover, also show a rise in the price of water-gilding, which had been priced in the 1787 and 1794 editions at a minimum of 5s. per square foot, rising to 8s. on 'Enriched carved work'. In 1810 and 1813 these figures were revised to show a range of rates running from 5s. to 8s. for straightforward burnished gilding, and 6s. to 12s. per square foot for enriched carved work.\*

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Finally, it remains to note that gilding may not always have been priced by the superficial area, since the Builders Price-Book contained also the following note:

'Gilders often charge in the following manner:

'3s. 6d. per book for oil gold, and labour to plain work.

'5s. ditto, for burnished gold ditto, and from five to eight shillings ditto, carved work.'\*

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Curiously, these prices appear unchanged in the early nineteenth-century editions mentioned above.\*

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IMITATIONS

A considerable part of the house-painter's skill, especially during the late seventeenth and early eighteenth and nineteenth centuries, lay in the imitation of various fine materials, especially different varieties of marble and the finer cabinet timbers. Indeed, Nicholson listed graining as one of the four branches of house-painting; and, in addition to marbles, such materials as bronze, tortoiseshell, and mother-of-pearl were imitated by painters. During the latter part of the eighteenth and early nineteenth centuries such tradesmen were also employed to provide ceilings representing a cloudy sky, as inclusion of this skill amongst those listed on the trade card of the London grainer William Davies makes clear.\*

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The techniques used for graining and marbling developed considerably during the period covered by this book, particularly during the early nineteenth century; and by the 1860s, when the Bolton grainer, Thomas Kershaw, won first prize at the International Competition in Paris, he could grain a piece of slate to look like oak, and transform a piece of oak to the appearance of marble with such complete success as to fool even the most critical modern eye. His work, exhibited today at the Victoria and Albert Museum, is an impressive tribute to the advances of skill which became possible as a result of technical improvement said by Nathaniel Whittock to have taken place within the ten years prior to publication in 1827 of his book, The Decorative Painters' and Glaziers' Guide, a large part of which is devoted to the subject.\* Interestingly, in 1818 Laxton had referred to 'the late Mr. Samuel Platt, well known to all painters, and admitted to be the first who brought imitation to perfection';\* whilst in 1813 Martin had noted that the best London 'artists' in the field were Mr. Harman of Chelsea and Mr. Willement of Green Street, Grosvenor Square.\* Whoever was responsible for introduction of the new techniques, however, it seems clear from Whittock's descriptions that they lay in the use of a system whereby transparent darker glazes applied over a lighter ground would be manipulated and 'wiped out' to imitate the highlights of the figure, in place of the more laborious building up of the work in body colour. Such a method allows

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for great subtlety, and practice based on it was so fully described by Whittock and Vanherman that an extremely clear picture of early nineteenth-century technique may be obtained. Information on earlier practice is, however, scattered and fragmentary, and much has to be inferred from the briefest references. For this reason the later techniques will first be described in order that those which were to become obsolete may be compared with them, graining being dealt with before marbling since it was in this field that glazes were of greatest importance. Once both have been assessed in general terms, attention will be turned to the evidence for seventeenth- and eighteenth-century methods, and a general summary made of the cost of graining and marbling during the entire period. This broad account will be followed by detailed consideration of the individual timbers and marbles imitated, and finally attention will be turned to bronzing and the other materials whose imitation formed a significant part of the house-painter's repertoire, including the methods used for preparing clouded ceilings.

Graining and  
marbling  
techniques  
in general

Early nineteenth-  
century \*550  
graining  
methods and tools

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In principle, although less use is made today of an aqueous medium, the graining techniques employed by the 1820s will be familiar to many modern exponents of the art, the first step being the preparation of an oil ground, whose colour was that of the lightest part of the timber to be imitated.\* It was necessary that this should be particularly smooth, Vanherman stipulating that the ground should be prepared in the same way as a coach panel, and meticulously rubbed down with glass-paper between coats.\* Laxton indicated that an extra 3d. per square yard should be charged in the case of 'Colours for grounds for imitations' although a few years later Skyring suggested 2d.\* On this prepared ground a glaze of more or less transparent colour was laid, which, whilst still wet, was modified and manipulated with various tools so as to allow the lighter ground to show through in places, imitating the natural highlights of the grain typical of the timber in question. This was called by Vanherman the stry.\* Once dry, darker veins could be added, hard edges throughout the process frequently being 'softened' with a large dry brush. When

completed the work was generally, but not invariably, varnished, both to protect the surface, and to give the imitation the apparent depth of polished timber.

\*554 The glazes used could be prepared either in an oil or an aqueous medium, in both cases the more transparent varieties of pigment finding particular employment. Whittock mentioned, for example, lake, Prussian blue, umber, and sienna as frequently used without white lead as glazing pigments,\* and others will be found in the various detailed recipes for imitating the different timbers and other materials which follow in the glossaries below. Taking the oil mediums first, two varieties are mentioned in contemporary literature. The simpler, the normal linseed oil and oil of turpentine vehicle, was employed by Whittock to a very limited extent, but was mentioned also by Nicholson, whose graining method described in the New Practical Builder (1823-5) was rather different from that outlined above, and will receive attention below in connection with earlier techniques. The second, which, at least amongst the specialists, was probably in more general use, was known as \*555 megilp (after the painter McGuilp)\* and was described by Whittock as being not a fluid, 'but a compound of various ingredients mixed together to the consistence of a thick treacle'. The main reason for the use of megilp was to prevent the glaze, when figured in imitation of the timber grain, from running together again and obscuring the effect thus created; but a megilp could also serve to retard the speed at which a glaze dried in order to allow a greater working time. Although he indicated that formulae varied according to the fancy of the individual painter, to prepare a typical megilp glaze for use in the imitation of oak, Whittock directed that 8 ounces of sugar of lead and 8 ounces of rotten stone should be ground together in linseed oil as stiffly as possible. At the same time, 16 ounces of white wax should be dissolved in 8 ounces of oil of turpentine by means of gentle heat, and when cool ground \*556 into the first preparation.\*

Turning to aqueous mediums, that used universally by Whittock for graining 'in distemper' was beer or ale. The

main reason for employment of this water and alcohol mixture was undoubtedly the effect the latter constituent had in eliminating the effects of any slight oiliness there may have been in the prepared oil ground which might have prevented the glaze from taking evenly. Both Whittock and Vanherman stressed the need to remove any greasiness of this nature, which Vanherman called the 'sessing' (now generally spelt cissing), before applying the first glaze, Whittock recommending washing with soap and water, laying emphasis on this in several places, whilst Vanherman used beer alone, rubbed over the ground.\* When working in distemper, the glazing pigments were, Whittock indicated, to be ground in beer to the consistence of a thick paste, and thinned with more beer for use. In addition to beer, he also mentioned a second variety of megilp, which, he said, was used by some painters. It was designed to slow down the rate at which distemper glazes would dry, and was made up from soap, wax, and turpentine.\*

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With regard to the choice between an oil or distemper medium in any particular instance, it is evident that one or more practical reasons might constrain this, although no doubt the preference of the individual painter always played a large part. Thus, Whittock, discussing the imitation of oak using his first megilp formula, regarded this oil medium as providing an easier method than the use of distemper,\* but Vanherman indicated that the imitation of 'bulbous oak' was not easy in oil, giving only a method for its execution in distemper.\* The nature of the timber to be imitated was not, however, the only factor to be taken into consideration, and Vanherman suggested that distemper possessed the considerable advantage that it was possible to wash off the glazes and to start again from scratch, should one not be satisfied with the effect at first obtained.\*

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The tools used for the application and manipulation of the graining glazes would depend on the effect required. If in the first instance the glaze was to be applied evenly over the surface of the ground, flat (or 'varnish') brushes would commonly be employed, leaving a more or less gently striated effect of grain in the glaze. Thus, for the

imitation of mahogany, William Butcher indicated that the glaze should be applied 'with a flat brush, waving and imitating the veins as they run in any fine piece of mahogany';\* whilst Whittock used a 'flat varnish brush' to spread the dabs of glaze first applied to the ground in the imitation of pollard oak in distemper.\* On occasion too, an ordinary hogs hair tool might be used, and, although Whittock at first directed that in imitating walnut in distemper a flat brush should be used to apply the glaze, if a large area had to be covered, he suggested 'a large tool, nearly worn out' could be used instead. In the imitation of oak, again in distemper, a 'large tool' was to be employed for the purpose, 'letting the hand press heavily on the brush so that the hairs may spread', in which case it would, he said, produce the same effect as the use of a graining comb in oil; whilst in the imitation of rosewood in distemper a 'common tool' was to be used.\*

More usually, where a more markedly grained effect was required, special 'graining tools' of various sizes,\* having separated tufts of hair were used to lay on the first and subsequent glazes. These were apparently made to fit into a special handle (probably similar to that provided for the combs),\* and could be of several grades. Whittock illustrated a typical specimen\* and described its use to apply the first glaze in the first method he gave for the imitation of birds eye maple in distemper, referring to it as 'the flat hog's-hair brush'.\* A softer version was required for the application of the second glaze, and a third variety having fine hogs hair was needed to apply the first glaze in the imitation of watered damask coral wood in distemper. The hairs of the brush in this case, Whittock directed, 'must be very thin and cut away in unequal distances, as in the former example [i.e. that in his illustration]... but the spaces must be narrower and more frequent'. He also used a 'flat brush, containing very few hairs, and some of these cut quite away' to add darker veins (in this case while the first glaze was still wet) in the imitation of pollard oak in distemper; whilst in the third method for imitating rosewood 'a flat brush with the hairs cut away till it has the appearance of a wide toothed

\*Fig. 25

\*Fig. 24

\*566



comb' was employed, and in the fourth method 'a flat hog's-  
hair brush, cut very square at the end, and the hairs cut  
\*567 away at unequal distances'.\* On other occasions, however,  
he merely referred to 'the flat brush with the hairs  
\*568 separated'.\*

Occasionally resort might be had to other means of  
applying a glaze, and for the imitation of bulbous oak  
Vanherman eschewed the use of a brush altogether, using  
instead a 'good sized bladder' to dab the colour, which  
had been ground in beer or weak size, onto the ground, in  
\*569 order to produce the special effect needed.\*

Once the glaze had been applied by the methods des-  
cribed, it could be modified by use of one of a number of  
different dry tools, ranging from specially made graining  
combs to a variety of everyday objects forming improvised  
implements. The combs, Vanherman indicated, were made  
\*570 from ivory,\* and Whittock illustrated a number of specimens  
together with the handle into which they were inserted for  
use.\* Nos. 1, 2, and 3 were those generally used on plain  
surfaces, but it was, he suggested, better if the teeth  
were irregularly spaced, and Nos. 4, 5, and 6 would produce  
a more natural effect. Nos. 7, 8, and 9 were ordinary hair-  
combs adapted for graining purposes by the removal of groups  
of teeth, whilst Nos. 11 to 14 were combs for use on mould-  
\*571 ings.\* Although he described the method of using the combs  
in particular connection with the imitation of oak in oil  
\*572 (Vanherman too used a comb for this timber)\* these imple-  
ments could be used in distemper graining also, and Whittock,  
for example, suggested the use of No. 3, his finest, in the  
imitation of red satin wood, and also in the third method  
\*573 he described for rosewood.\*

\*Fig. 25

A feather provided another ready means for the modifi-  
cation of the wet graining glaze, and in connection with the  
imitation of birds eye maple in distemper by the first method  
he described, Whittock directed that the veins produced at  
first by the graining tool should be split into a variety  
of forms by passing 'the feather of a quill' over the work  
'in the same direction that the flat brush was used, giving

a sharp turn occasionally, and then proceeding over the lines again'. He used a feather also in the second method for the imitation of rosewood in a distemper medium, in this case giving the hand 'a light tremulous motion in the part where the grain appears wavy'.\*

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In some instances, once the basic effect of grain had been produced by the methods described above, it was necessary to break it by beating across it using either an ordinary dusting brush or the 'softener' to be described below. To effect this, either type of brush would be held flat (that is, in the plane of the imitation) with its bristles lying at right angles to the direction of the grain, and the surface beaten over with it. In the first methods he described for the imitation of rosewood and birds eye maple in distemper Whittock, for example, suggested use of the softener for the purpose, directing in the former instance that it should be applied 'against the grain, that is in an opposite direction to the way in which it was laid on', and in the second that it should again be used to beat the work 'the contrary way of the grain'. For the imitation of other timbers, however, a dusting brush was to be used, being applied 'with the point of the hairs the reverse way from that in which the colour is laid on' for oak in distemper, the same tool being used in the imitation of birds eye maple by the second method he gave and in the reproduction of rosewood by his fourth.\* In the case of oak in oil, Vanherman too used a comparable technique for simulation of the 'short grain', obtaining the necessary effect by dabbing the 'points of the duster' onto the glaze.\*

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In the reproduction of certain timbers, resort might be had to a sponge which would be applied to the wet glaze in such a way as to provide a suitably dappled surface. Whittock suggested, for example, that the first glaze laid in the imitation of Honduras mahogany should be modified by dabbing a sponge on it 'with great freedom', a similar technique being used in the imitation of Spanish mahogany by the second method he described, the sponge in this case being 'dropped on it in quick succession and quite accidentally'. In the case of satin wood too, the first glaze, laid

in distemper, was dappled with a small piece of sponge  
dropped 'accidentally on various parts of the work'; and  
a sponge was also used to take out the light areas in the  
imitation of red satin wood.\*

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Although Vanherman suggested the use of a sponge among  
a number of alternatives to wipe out the medullary rays in  
the imitation of oak in oil,\* Whittock seems to have pre-  
ferred the use of a wash leather for this purpose, either  
doubled to a point, or, for finer lines, placed on the end  
of a stick. He suggested the same procedure in the imitation  
of Spanish mahogany by the first method he described, to  
'take out the lights that appear in small streaks either  
side of the vein', and again used a piece of wash leather  
to take out the strong lights in the fourth method he gave  
for the imitation of mahogany. A wash leather also formed  
part of the system he described for the imitation of rose-  
wood by his first and second methods.\* In addition, Vanherman  
described a special leather tool 'for forming the short waves'  
in mahogany. This was:

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'A piece of stiff leather, about three inches in length  
and half an inch in breadth, to be fixed in the handle  
of a graining tool instead of the hair, and to project  
only a quarter of an inch from where it is inserted'.

He used the 'graining tool prepared with leather' in this  
way in the imitation of mahogany in distemper, to 'express  
and mark the waves at the sides of the panel', and also  
mentioned the use of a piece of leather to take out the  
medullary rays in the imitation of oak in oil.\* For the  
latter purpose, besides the sponge, he also suggested use  
of a piece of cork, having indicated that amongst the tools  
required for graining were several of these 'cut chisel  
shape, and points, &c.'.\*

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An important accomplishment of the grainer lay in the  
imitation of knots. The light circle forming these could  
be made by a number of methods, and Whittock variously  
indicated the use of a camel hair pencil held perpendicular  
to the work and turned between finger and thumb, a sponge

used in a similar way, a piece of wash leather turned on  
the end of a finger, and use of the tips of the fingers,  
\*582 which were to be dabbed onto the wet glaze.\* To add spots,  
veins, and other touches, generally once the glaze beneath  
was dry, a camel or sable hair pencil could be used, whilst  
\*583 the tips of the fingers could also be employed to this end.\*

During progress of the work, the veins and other mark-  
ings made on the glaze would often be blended into each other  
using special badger hair brushes of different sizes. These  
were known as 'softeners' and were passed dry across the  
work. Whittock mentioned this in connection with the  
imitation of several timbers, including pollard oak in  
\*584 distemper and Honduras mahogany,\* whilst Vanherman indicated  
the use of a badger hair softener in the imitation of oak  
\*585 in oil, and mahogany in distemper.\* An ordinary dusting  
brush, however, could also be used for this purpose on  
occasion, and Whittock mentioned its employment, for example,  
in the imitation of Honduras mahogany, Spanish mahogany (by  
the second method he described), and walnut in distemper;  
whilst in order to soften the completed first glaze in the  
imitation of oak in oil, he directed that the end of a  
\*586 'hard tool' should be dabbed over it.\*

Other exponents of graining would no doubt have extended  
the range of tools described by Whittock and Vanherman, and  
probably a great deal of improvisation took place, so that  
each craftsman would have his own favourite for any given  
subject. Indeed, Whittock observed that every 'experienced  
grainer forms for himself a variety of tools that are useful  
\*587 in his peculiar style of painting'.\* Considerable artistry  
was required in their use, and, as Whittock remarked else-  
where, 'it is not the excellence of the tools, but the  
\*588 skill of the hand that wields them, that gives most effect'.\*  
It is almost impossible to convey in words the curious dex-  
terity of touch needed to achieve a successful imitation,  
a fact acknowledged by John Smith, who remarked that the  
method for the imitation of timbers and marbles,

'must be attained by ocular inspection, it being  
impossible to deliver the manner of the operation

by precept without Example, and I am bold to affirm,  
that a Man shall gain more knowledge by one days  
Experience, than by a hundred spent to acquire it  
some other way.'\*

\*589

Whittock too indicated that it was 'difficult to express in  
words the precise movements and the various ways of handling  
the different tools';\* but something of these will be found  
in the rather fuller descriptions of the methods used for  
the imitation of the different timbers contained in the  
glossary below, many of which are drawn from his work, and  
are intended to expand the broad observations on graining  
procedures so far made. Apart from his detailed directions,  
however, Whittock offered important general advice, insist-  
ing firstly on the need for the aspiring grainer to study  
for himself natural specimens of the materials he was  
learning to imitate. He should also, he said, be familiar  
with the way a joiner worked, how he would select the best  
figured timber for the panels of a door, and the way in  
which a wide panel would be made up from carefully matched  
pieces of timber, in order that in the imitation the joiner's  
work should be represented naturally as well as the wood.  
For the same reason he laid stress on the order in which  
the different parts of a door should be grained, the panels  
coming first, followed by the horizontal and then the ver-  
tical members, a logical sequence, which, it will be appre-  
ciated, allows the joints to be reproduced properly.\*

\*591

Early nineteenth-  
century marbling  
methods

Methods used for the reproduction of marble during the  
nineteenth century were generally similar to those for grain-  
ing, although certain modifications of the techniques already  
described were employed, and, other than softening, little  
if any manipulation of large areas of glaze was needed.  
Glazes in both oil and distemper mediums were again in use,  
but an important variation was the use of a distemper  
rather than an oil ground, made possible where the imitation  
was to be applied to plaster, rather than, as in the case of  
graining, almost exclusively to timber. Thus Whittock, for  
example, used two coats of 'common whitewash' followed by a  
third made from whiting and milk as the ground for veined  
white marble. In this case, and in that of his second

\*592 variety of 'Florentine' marble, he also employed milk as the medium for the veining, but for darker marbles, such as verde antico and Siena, an ordinary size-distemper was used for the ground, beer being used for the veining in the latter instance.\* Whether the reason for the use of milk in the case of the white marble was to eliminate any tendency to yellowing in the medium, or for any special characteristics it may have possessed in terms of flow across the surface to achieve a better imitation of the veining peculiarly required he did not, however, make explicit.

\*593 With regard to the basic choice between an oil or distemper medium in the case of marbling, considerations additional to those mentioned above in connection with graining were present. Whittock, for example, remarked that since imitations of marble were 'generally painted where they are exposed to the weather, oil is usually preferred to distemper'. On the other hand, he observed that although oil marbling lasted longer, walls executed in this medium could soon become soiled, and for this reason in halls, passages, bars of coffee-houses, and the like, he preferred the use of distemper, since the work could last two seasons well, and could be 'done cheap and quick, without any disagreeable smell'; whilst the rooms would always have a light, fresh appearance.\*

\*594 Another variation in technique mentioned by Whittock in connection with the reproduction of veined white marble in both oil and distemper was the application of the veins whilst the ground beneath was still wet, and he used a similar technique in other instances also.\* In oil he spoke of veins being scumbled onto the surface, indicating that by this expression he meant they were to be 'spread  
\*595 very thinly over the ground'.\* Such features were generally applied, as in graining, by means of camel or sable hair  
\*596 pencils,\* although in the case of the second method for the imitation of verde antico in distemper, Whittock suggested the use of 'the flat brush with the hairs separated'  
\*597 described in connection with graining.\* Many other tools were common to both techniques, Whittock calling for the

use of feathers, a wash leather, and a cork for certain  
imitations, besides the employment of the softener.\*  
\*598 The only additional item he mentioned was a mahl stick  
\*599 'to rest the arm upon while penciling the small veins'.\*  
By way of general advice on veining, he described the way  
in which in all marbles (except, perhaps, black and gold,  
and Florentine marble) it was necessary that the veins  
should 'all appear to be travelling to the same point by  
different roads', cautioning that 'nothing can be more  
contrary to nature than those violent and eccentric breaks  
\*600 which painters of veined marble usually practise'.\*

All the techniques so far described in connection  
with both graining and marbling have involved the building  
up of darker, more or less transparent glazes on a prepared  
ground of light colour, and follow Vanherman's general advice  
that in marbling one should look first for the ground colour,  
laying on it the lightest followed by the darker tints of  
the veins. For certain marbles, however, it was necessary  
to reverse this order. Thus, Vanherman indicated, where  
marbles presented dark areas 'to a great depth, in appear-  
ance' this was copied by laying the darkest colour on first,  
and filling in between with the general, or middle, tint,  
finishing off with the lighter veins in due order. Working  
in this way it would, of course, be necessary to apply body  
colour rather than transparent glazes; and the example of  
marble he used to illustrate the point had dark brown-red  
patches, between which were areas of light red containing  
yellow areas 'running out in points of various lengths and  
\*601 thickness', with lighter yellow and white finishing touches.\*  
Whittock followed a similar procedure in the case of the  
green marbles such as verde antico, Egyptian green, and the  
serpentine, all of which, he observed, required a black  
ground, as also, of course, did the black and gold marble.  
Porphyry too was prepared in a comparable way, in this case  
the white spots being sprinkled rather than painted on the  
\*602 dark red ground.\*

Graining and  
marbling methods  
in use before the  
early nineteenth  
century

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As already mentioned, seventeenth-century authors gave little information concerning the techniques then in use for graining or marbling, and even the normally exhaustive John Smith, for example, merely described the imitation of 'Walnut-Tree' as effected by means of a ground of 'burnt Umber, and white[,] vein'd over with the same Colour alone, and in the deepest places with Black.'\* His mode of expression does seem to indicate, however, that seventeenth-century graining would be built up by the addition of veins, rather than by the manipulation of an evenly applied glaze; and the same is true of the account for the Dining Room at the Earl of Danby's lodging in Whitehall Palace which was finished 'wallnuttree colour pencoll grained' in 1674-5.\* The general appearance of the graining recently discovered on the stiles and rails of a room in Apartment 29 at Hampton Court, Middlesex, also tallies with this suggestion. Here, unfortunately, the panels and mouldings were removed, probably during the eighteenth century, to permit the walls to be hung with paper or fabric; but Streeter's account of 1674, containing a number of items for 'wallnut tree Colo<sup>r</sup>!', survives,\* and a sample kindly made available by the Department of the Environment has confirmed the authenticity of that remaining.\* Undoubtedly, the identification and study of further authenticated examples in the field will be necessary to confirm the point, but it is of considerable significance that the same method was described in some detail by the early nineteenth-century American author Hezekiah Reynolds, who even employed the seventeenth-century terminology discussed below, by then virtually obsolete in England, referring to the imitations as 'mahogany colour' and 'cedar colour'. His methods for the reproduction of these timbers and 'cherytree wood' called in each case for the application of a primer, undercoat, and finish of appropriate colour, 'shading' in a darker tint being added whilst the last of these was still wet, using a 'graining or flat brush'.\*

The obsolescent nature of such a method in early nineteenth-century England is made clear by Whittock, who, describing a comparable way used for the cheap imitation of mahogany in which the graining was built up by the



painting on of veins in a linseed oil and oil of turpentine mixture, observed:

\*608 'The common error in this sort of graining, is that of having the ground a dark red, and forming (or rather trying to form, for it never succeeds) the strong lights with opaque colour instead of wiping them out: the consequence is that it is either left an unseemly lump, or it mixes with the red and black, spoiling the whole mass.'\*

\*609 The wiping out of wet paint to reveal the ground to which it had been applied does not seem, however, to have been an entirely new development during the early nineteenth century since this formed a part of the 'old method' of imitating oak in oil, which Whittock said was 'still practised by country painters'. In this case the effect of the grain was achieved by painting the work over with the requisite colour in a linseed oil medium to which the necessary driers had been added. This was then worked over with a large dry brush to give the appearance of the veins, after which the lighter markings were taken out with the end of a stick 'cut thin for the purpose', or by means of a small piece of cork.\* A comparable method, also using body colour, was mentioned by Nicholson, who indicated that the ground colour should be laid in white lead tinted to the required depth and diluted with oil of turpentine. The shades and graining were then to be produced by dipping a flat hogs hair brush in a mixture of linseed oil and oil of turpentine, and drawing it down the newly laid colour. A camel hair pencil was later used to add further features.\*

\*610 In distemper too, Whittock described the 'old style' of working, emphasising that this also was a poor method. The colour was spread evenly on the ground, and when dry a flat varnish brush dipped in spirits of salts (hydrochloric acid) diluted with water to the strength required was 'drawn over the work in a variety of forms'. The wet streaks thus made were brushed across with a dusting brush, the action of the acid being to 'loosen the colour and give the effect of grain where it was taken away upon the duster'.\*

Turning to seventeenth- and eighteenth-century methods for the imitation of marble, again only a few details from contemporary literature are available. The method of imitating veined white marble described by Stalker and Parker corresponds almost exactly with the early nineteenth-century procedure already described, the veins being laid (using a camel hair pencil) in diluted size-colour on a damp white ground, commencing with 'the faintest large clouds' and finishing with the finest dark veins.\* Félibien, on the other hand, described the reverse imitation, mentioning the addition of white veins to a black ground by means of a small brush.\* Although this technique of using opaque colours on a dark ground was, as already described, used during the early nineteenth century for the imitation of those varieties of marble having a dark ground, cross sections taken from the Balcony Room at Dyrham Park, Gloucestershire (now Avon), indicate that the pink and orange marbling of 1694, for which Hauduroy's account survives,\* was built up starting from a white ground, but using body colour rather than glazes, showing the method was used at least on one occasion during the seventeenth century for the imitation of a type for which a system of glazes would later have been employed.\* However, it is of course impossible to generalise on the basis of a single example as to whether such a technique was the norm during the seventeenth century, although this does not seem unlikely, bearing in mind the earlier methods of graining using body colour considered above.

Imitations on a ground of metal leaf

Stalker and Parker described the imitation of tortoise-shell by the application of glazes on a ground of silver leaf, and Vanherman a similar method for the imitation of mother-of-pearl.\* Areas of gold leaf could also be used in the reproduction of black and gold marble, a black ground being laid over the areas of metal leaf, which was re-exposed by means of a pointed bodkin or piece of wash leather. This was described fully by Whittock,\* and details of all these imitations will be found at the relevant places in the glossaries below.

Prices

Prices for different imitations could vary between

quite wide limits. The marbling in the Balcony Room at Dyrham Park, for example, was billed at a rate of 3s. per square yard in 1694, whilst that in the Summer House cost only 1s.;

\*618 and an estimate of 1705 for marbling at Stoke Edith, Herefordshire, included as the most expensive item

\*619 lapis lazuli at 5s.\* Variations may be seen too in seventeenth-century prices for graining, certain items at Kensington Palace in the early 1690s, for example, being

\*620 1s. 2d. per square yard, and others 1s. 8d.\* By the early nineteenth century the range of prices seems to have widened considerably. Imitations then were apparently charged for by the square foot, and Laxton gave a range of prices for graining extending from 4d. to 1s. per foot, whilst different varieties of marbling could cost between 2d. and 1s. 6d. In addition, he indicated, the value of

\*621 the imitation depended on the quality of its execution.\* Prices noted for individual varieties will be found in the glossaries which follow.

Glossary of  
timbers  
imitated

In dealing with references in early painting accounts it is important to note that employment of a term such as 'wainscot colour' during the late seventeenth and eighteenth centuries did not necessarily imply that the finish was grained to imitate the natural timber. Thus, in the Kensington Palace accounts a clear distinction was made between ordinary painting and graining, items for both 'Wallnut Tree' at 1s. 6d. per square yard, and 'Wallnut Tree grained' at 1s. 8d. being present, for example, in

\*622 Robert Streeter's bill for March 1692;\* and the use made of such unqualified terms as 'wainscot colour' by John Smith in his instructions for colour mixing (discussed in Chapter III) show clearly that they were commonly used simply to convey a plain paint colour of similar overall hue and tone to the timber in question. Again, Alexander Emerton advertised a range of ready-mixed tints during the 1730s which contained such items as 'wainscot colour'

\*623 together with others which demonstrate the point.\* Nevertheless, unqualified references to such timber colours can be ambiguous, and in the account of 1669 for painting the Sheldonian Theatre at Oxford a large number of items for 'Cedar colour' at 1s. 2d. per square yard are followed by

a single item for 'cedar colour... not being veined' at  
ls., showing that here the term was being used without  
\*624 special qualification in connection with graining.\*  
References to seventeenth-century examples in the glossary  
below have therefore necessarily been restricted to those  
in which no ambiguity is present.

During the eighteenth century many new timbers of fine  
colour and distinctive figure became available to the  
cabinet-maker, and, as costly and rare materials, came  
naturally to be imitated by the house-painter. The use  
of such woods in furniture has been studied by the American  
writer F. Lewis Hinkley, who, in his Directory of the  
Historic Cabinet Woods (1960) has compiled an extensive  
catalogue of those exploited and suggested the botanical  
species to which the different trade names were applied.  
His volume has thus been of considerable assistance in con-  
nection with the present topic, and is currently being com-  
plemented by further research at such institutions as the  
Victoria and Albert Museum, where scientific methods of  
timber identification are being applied to pieces in the  
collections, so that in due course further analysis of the  
subject will become possible. In the mean time, however,  
his findings have proved most helpful in interpretation of  
the names encountered in house-painting documents and liter-  
ature which form the basis of the glossary which follows.

Air wood

See Harewood.

Amboyna

\*625 The timber known as amboyna may be identified with that  
of Lingosum indicum (also known as Pterocarpus indicum),  
native to the East Indies. The name is applied to the burr  
rather than to the ordinary wood, and veneers of this became  
popular in Sheraton and Regency furniture.\* Its colour ranges  
between orange and chestnut brown. Both Laxton and Skyring  
included the timber in their lists of imitations, the former  
\*626 giving a piece of ls. per square foot, and the latter 9d.\*

Ash

The timber of the English ash, Fraxinus excelsior, is  
almost white in colour. In 1692 the Doctor's Chamber at  
Erddig, Denbighshire (now Clwyd), was described as 'prety

\*627

well don somewhat like Ash... and grained much like the Hall'.\*

Birds eye maple

This light coloured timber with its distinctive small 'birds eye' knots comes from the tree Acer campestre native to Britain. Whittock gave two methods for its imitation, directing first that the ground colour should be the same as that for oak (a mixture of rotten stone and white). The graining glaze was to be made from umber ground in ale, and applied by means of 'the flat hog's-hair brush' which he illustrated, having separated tufts of bristle.\* This was to be well loaded with colour, and with it one was to 'draw the veins very much curled, letting them wave in every direction', immediately passing the feature of a quill over the work 'in the same direction that the flat brush was used, giving a sharp turn occasionally, and then proceeding over the lines again'. This would 'split them into a variety of forms', and whilst still wet the work was to be beaten with the softener 'the contrary way of the grain'. The knots were next taken out by placing the point of a camel hair pencil, held upright, on the work, and turning it between finger and thumb to take a spot of colour off the ground. The work was then allowed to dry, and a thin glaze of burnt umber 'drawn over it in veins', this time using a softer version of the flat brush with separated tufts of bristle he had illustrated, and, once this was dry, the work was varnished.\*

\*Fig. 24

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The above method was, he indicated, to be followed where the work needed to be finely executed, but for shop fronts, halls, and so on greater rapidity and boldness were necessary. In this case the veins were again to be drawn on the ground with 'the flat hog's-hair brush'\* in umber, and immediately beaten with a large duster 'in a contrary direction'. Once dry, veins were to be drawn all over the work 'in every variety of curl' using a thin glaze of Van-dyke brown. Whilst this was still wet, the tips of the fingers were dabbed onto the surface, ensuring their configuration was properly varied, to produce the knots, and the whole allowed to dry. In addition a sparing number of dark knots could be made by the same method.\*

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Cedar

- Where 'cedar' or 'red cedar' are mentioned in seventeenth- or early eighteenth-century documents it appears problematical whether the term was applied to the timber of the Spanish cedar, Cedrela odorata, which grows in tropical America and the West Indies, or to the American red cedar, Juniperus virginiana. The latter, known also as 'pencil cedar', was being imported into England during the seventeenth century, and was much prized for use in paneling on account of its fragrant scent.\* The architect Sir Roger Pratt mentioned the imitation of cedar in his notebooks,\* and there are many items for 'cedar colour' at a rate of 1s. 2d. per square yard in the account receipted by Richard Hawkins in 1669 for painting work at the Sheldonian Theatre, Oxford. This also includes an item for 'cedar colour... not being veined' at 1s., indicating, presumably, the use of veining on the remainder.\* Also, in 1687, the two doors either side of the altar in the Chapel at Whitehall Palace were painted 'like Cedar'.\*
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- \*634

- Directions for painting 'red cedar color' were given by the early nineteenth-century American author Hezekiah Reynolds. By European standards these seem to have been archaic, and, as suggested in the general discussion of graining methods above may well reflect seventeenth-century technique. The ground was to be primed and undercoated with a mixture of red and white lead in equal quantities, whilst for the third coat 2 ounces of vermilion were to be mixed with 4 pounds of white lead. The 'shading' was to be added immediately, before the paint had dried, using well ground Indian red 'placed on a pallet or pane of glass, that it may take easily with the brush'.\*
- \*635

Cherry

- Another timber for whose imitation Reynolds gave directions was 'cherytree wood', a type not encountered in any of the European material which has formed the basis of the present study, and again the method seems to reflect seventeenth-century British practice rather than that of the early nineteenth. White lead and yellow ochre in equal quantities were used for the first three coats, and umber 'shading' added on the surface of the last whilst it was still wet.\*
- \*636

Coral wood

See Red sandal wood.

Coromandel wood

Trees of the genus Diospyros growing in South India and Ceylon produce a group of timbers including all the truly black ebonies together with those streaked in brown or reddish hazel tones. The major species is D. quaesita. The timber was used extensively in Regency furniture, and by at least the mid-1850s three subdivisions were recognised by the trade, depending on the proportion of dark veins present.\* Pyne described the doors and window shutters in the Crimson Drawing Room at Carlton House, London, as painted black in imitation of ebony; and both Laxton and Skyring listed coromandel wood amongst those imitated, the former giving a price of 9d. per square foot, and the latter 6d.\*

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Ebony

See Coromandel wood.

Flother wood

An account of 1597-8 for painting in the Gallery at Oatlands, Surrey, includes an item for 'leying the pannells and battens of the same with soundry cullours curyously grayned w<sup>th</sup> a grayne called flother woode'.\* Commenting on this, Edward Croft-Murray suggests that a flecked or speckled effect was intended, deriving from the word flother, meaning a snowflake;\* but whether the term was applied to a specific timber having this type of figure is not clear.

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Harewood

F. Lewis Hinkley indicates that 'harewood' was the name given to sycamore, Acer pseudoplatanus, altered in colour 'by staining it to a soft, clear green tone, which appears in old furniture as a pleasant gray-green hue'.\* Vanherman observed that 'air wood' was 'reckoned one of the simplest of the graining subjects', indicating that the ground for the imitation should be laid in a very light grey, on which

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'after being brushed over with a somewhat darker grey, you imitate the stry with the graining tool, the[n] lengthways, with a still darker waving... with the same tool 'cross' this first stry, which finishes the work.\*

A comparable formula was given by Butcher under the heading 'satin wood', and it is possible this timber also was artificially stained blue or green. In this case the first coat was to be white, the second light blue, and the work was to be finished either with dark blue or dark green as desired.\* This formula for 'satin wood' was repeated by the author of the Painter's... Pocket Manual.\* Nicholson gave a price of 5d. per square foot for 'Hare or satin wood' in the New Practical Builder, whilst Laxton listed 'Air wood' at 6d. per square foot, and Skyring 'Hair' wood at the same rate, varnish in all cases being extra.\*

Kingwood

See Princeswood.

Mahogany

Two distinct species of mahogany were commonly used in cabinet-making: Spanish mahogany, Swietenia mahogani, from the West Indies, including the islands of Cuba, Jamaica, and Hispaniola, that from the island of Santo Domingo being particularly noted; and Honduras mahogany, S. macrophylla, from the Central American mainland. The former timber is generally darker in colour, and often contains chalky markings in the pores of the grain, in distinction to the grey or black specks and lines of the Honduras;\* but few eighteenth- or early nineteenth-century documents indicate the specific imitation of one or other variety, and the majority of references are simply to 'mahogany'. To this, however, Whittock provides a notable exception, describing methods for the reproduction of each. Honduras was, he indicated, the easier, and, being capable of execution with 'quickness and spirit', was the proper mahogany for street doors, shutters, and the like. The ground was laid in white lead in oil stained to the required colour with Venetian red, and the first glaze to be applied was of Vandyke brown. This was figured by means of a sponge, which was dabbed onto the surface 'with great freedom' to take out the light areas, hard edges being blended using a softener in the direction in which the dark veins were to run. When this coat was dry, a deeper tint of Vandyke brown was used to form the lightest of the dark veins, which were to run 'in the direction of the light, both above and below it'. Some of the touches were to be darker than others, and, he added, 'just



under the light a dab of colour must be laid on nearly opaque'. All this was to be blended and softened with the dusting brush 'handled in the same direction given to the colour' and finally blended with a badger hair softener moved 'from right to left'.\*

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Whittock regarded Spanish mahogany, on the other hand, as 'the highest test of the grainer's art', and described two methods for its imitation. In the first, the ground was to be laid on in a much 'richer' and 'finer' red than that used for the Honduras mahogany, made by the additional use of a little crimson lake. The first grain-ing glaze, made from lake and Vandyke brown ground in ale, was spread with 'the flat brush with the hairs separated', so as to leave the light grain uncovered. In the particular specimen he illustrated, he was at pains to point out that 'the flower runs in a slanting direction across the wood, and in the centre appears as if suddenly separated'. This effect was, he indicated, 'produced by checking the hand at the end of the first sweep taken with the flat brush, and at the same time bearing harder upon it', a technique which would 'spread the hairs, and give a greater quantity of colour'. While the glaze was still damp, darker veins were added using the same pigments and technique, after which a piece of wash leather 'either placed on a stick, or folded to a point' was used quickly, with a light hand, to 'take out the lights that appear in small streaks on either side of the vein'. Finally the work was softened.\*

\*648.

For the second variety of Spanish mahogany, which, he observed, was time consuming to imitate and could therefore only be applied to the best work, the ground colour was prepared from Indian red, lake, and white lead. On this was laid a thin glaze of rose pink ground in ale, which was manipulated by means of a thin piece of sponge 'dropped on it in quick succession and quite accidentally'. This was allowed to dry without softening, varnished, and a distemper glaze of lake and Vandyke brown applied in 'short thick touches' with a small brush. The sponge was then applied in 'nearly the same places as it was on the first ground' to produce the 'second tint of light', and the work softened

and allowed to dry. The 'flat brush with the hairs separated' was next used to apply a glaze of thin Vandyke brown, 'crossing the touches on the dark side'. When dry, the imitation was varnished.\*

\*649 For common work, such as shop fronts, Whittock described a fourth method for the imitation of mahogany, by means of which, he indicated, many yards could be completed with good effect in the course of a morning. The technique was similar to the 'old' methods of graining already discussed of which he was extremely critical, the ground in this case being laid in a mixture of white lead and Indian red, and the graining built up by means of brushes separately charged with Indian red and black ground in boiled oil and turpentine with the necessary driers, large veins being formed 'according to fancy'. When the surface was nearly covered, the strong lights were taken out with a wash leather, and the whole softened with a large dusting brush.\*

\*650 An even simpler method was suggested by Butcher, who, moreover, observed that mahogany colour 'properly managed, will have the effect of fine-grained wood itself'. The first coat was laid in white lead, and the second in an orange colour made using orange lead, after which the work was finished with burnt sienna 'with a flat brush, waving and imitating the veins as they run in any fine piece of mahogany'.\* The author of the Painter's... Pocket Manual followed the same suggestions for pigments, but gave burnt umber as an alternative for the sienna.\*

\*651 These latter methods seem in many ways to reflect earlier practice in their simplicity, having little of the subtlety possessed by those suggested by Whittock, and that suggested by Reynolds also falls into this category. The work was primed using spruce ochre and an undercoat containing 4 ounces of white lead to a pound of the latter provided. On this a layer of burnt ochre ground in 'clarified or boil'd oil' was laid and 'shaded' with burnt umber whilst still wet 'that the colors may more easily blend together'. For this a 'graining or flat brush' was used, and the work varnished on completion.\*

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The lack of refinement inherent in such methods is obvious in comparison with those of Whittock and Vanherman, the latter of whom also described methods for the imitation of mahogany in both oil and distemper. For the latter the ground could, he indicated, be either buff, or dark or light orange according to fancy or situation. If the latter, it seems likely that he had a mixture containing red lead in mind, since he remarked earlier in his book that it was seldom used in house-painting except as a ground for mahogany graining. Once the ground was dry, and had been washed with beer, a glaze of burnt sienna was laid on, after which, he directed, the painter was to,

'imitate all turns and wavings of the curl, or flower, with the large graining tool, and take care not to destroy or stop out the lights, for every rich curl has a dark and a light side. The graining tool, prepared with leather, is suitable to express and mark the waves at the sides of the panel. You then sweeten the whole gently with the badger, and, when dry, varnish.'

\*654 In oil, the process was, he said, nearly the same, although some grainers would add finishing touches with lake, and also strengthen the shades with lake and black, a refinement which would, he noted, bestow great brilliancy on the work.\*

\*655 The Norfolk House accounts of 1755 contain a single item for four square yards of 'mahogany' graining at a cost of 1s. 6d. per yard, but it is not clear whether this price included the necessary undercoats or varnishing.\* Later eighteenth-century sources, however, are generally more specific. At Osterley Park, Middlesex, for example, just over five yards of work were painted '4 oil Grain'd Mahogany  
\*656 Colour' in 1772-4 at a rate of 1s. 9d. per yard;\* whilst the Somerset House accounts of 1780 contain items for 'Painting Twice done Extra to Doors, finished Grain'd Mahogany & Varnished' at 1s. 6d. per yard. Subsequent work at the latter, the last entry being dated 1791, was priced at the same rate, an extra 2d. per yard being included for each additional  
\*657 undercoat.\* In price-books, however, the rate for graining

is clearly separated from that for the grounds, so that in the 1776, 1787, and 1794 editions of the Builders Price-Book 'Mahogany grained' cost 1s. per yard, and mahogany 'grained and varnished' 1s. 2d.\* These, it will be seen, are precisely comparable with the rates allowed at Somerset House. The same prices are given in William and James Pain's British Palladio (1786),\* but in the schedule of prices appended to the fifth edition of William Pain's Practical House Carpenter published in 1794 they were increased to 1s. 4d. and 1s. 6d. respectively, marking the beginning of the inflation occasioned by the wars with France.\* As a result of this, in the 1810 and 1813 editions of the Builders Price-book 'Twice in oil grained mahogany' had become 2s. per square yard, the same varnished being 2s. 6d.\*

The same development may be traced through various editions of Crosby's Builder's New Price-book, which throws further light on the additional cost of varnish. In the 1804 edition, for example, it was noted that the cost of 'Mahogany colour grained' had been 1s. per yard between 1760 and 1790, but had increased to 1s. 1½d. by 1803; whilst prices at the same periods if the work was varnished were 1s. 2d. and 1s. 3d. respectively, or, if two coats of varnish were applied, 1s. 4d. and 1s. 6½d.\* In the 1812 edition the pricing method was changed, so that for the graining an addition of 1s. 6d. per yard had to be made to the basic cost of the ground; and assuming this to be 7d. (the cost of common colours twice in oil) the total of 2s. 1d. is very close to that of 2s. given in the 1810 and 1813 editions of the Builders Price-book already mentioned. If the work was varnished the addition of 2s., but in the 1821 edition both figures had again risen, this time to 2s. 9d. and 3s. 6d. respectively.\*

Other early nineteenth-century price-lists priced imitations by the square foot rather than by the yard, Skyring, for example, quoting 4d. per square foot for 'mahogany', the equivalent of 3s. per yard.\* A few years earlier, however, Laxton gave a figure of 10d. per foot for 'Hispaniola mahogany', reflecting no doubt Whittock's comment already noted on the superiority of this timber.\* A

similar, but less marked, difference appears in the 'Perpetual Price Book' which formed an appendix to Nicholson's New Practical Builder where a figure of 5d. was suggested for 'Honduras mahogany', and 7½d. for 'Hispaniola mahogany'.\* In all these instances varnish was separately billed as an extra.

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#### Oak and wainscot

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Imitations of oak were ubiquitous both during the late seventeenth and early nineteenth centuries. As will be seen from the discussion of prices below it was used extensively by Wren in several of the Royal Palaces, and apparently by James Wyatt in a number of ceilings at Fonthill;\* whilst Whittock remarked that it was the grain preferred for exterior work, such as street doors and shutters.\* Although it has been suggested that the term 'wainscot' was used in cabinet work to indicate the use of timber imported from the Continent,\* the name seems to have been used as a matter of course in the years between 1660 and the early eighteenth century, and it is doubtful whether in painting the distinction, if maintained at this period, was of any importance. The two principal species of oak used in joinery, Quercus robur (otherwise known as Q. pedunculata) and Q. sessiliflora, produce timber of almost indistinguishable character, one of the main delights of which is the fine figure made by the medullary rays when the boards are 'quarter sawn', that is, cut on the diameter of the log. These, having the advantage also, in a timber notorious for its instability, of being less liable to bow with changes in moisture content, were often selected for the panels of doors and wainscoting.

\*Fig. 25

Whittock provided detailed directions for the imitation of oak in both oil and distemper, remarking that the former was the easier. The ground was laid in a mixture of rotten stone and white, and the first glaze, composed of the megilp formula of which details have already been given in the general description of techniques above, applied a square yard at a time at the most. A few minutes were allowed to elapse, and a large comb (No. 1 in his plate)\* then used to produce the grain, being drawn over the work in such a way as to make it 'slant or look wavey'. This was followed

by a second comb (No. 2 on his plate) drawn 'over the whole, letting the arm in parts bear lighter than in others, and sometimes giving the hand a very tremulous motion'. By this means the coarse lines were broken, and a third comb (No. 3 on his plate) used to produce the finest grain 'nearest the centre of the tree'. After this the medullary rays were taken out with a piece of wash leather, doubled to a point, or, for finer lines, put on the end of a stick, and the whole softened by 'dabbing the end of the brush [a 'hard tool'] all over the work'. Once the glaze had hardened, the dark touches were put in using Vandyke brown ground in ale. Later, he indicated, a thin glaze of burnt umber ground in ale could be applied, if desired, to darken the whole. Burnt umber was used in this way, he said, for the reproduction of 'old wainscot oak', the method being otherwise identical with that already described. The completed work was varnished.\*

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For distemper work, the same ground was used, and, this having been well washed with soap and water, a wash of burnt or raw umber ground to the consistence of a thick paste in beer, and thinned with more beer for use, was laid on with a 'large tool'. This was to be drawn over the panel, 'not in a straight line, but in a slanting and in some cases a wavy direction, letting the hand press heavily on the brush so that the hairs may spread'. In this case the brush would, he said, perform the same function as the comb in the oil method. The work was immediately beaten with a large dusting brush, 'with the points of the hairs the reverse way from that in which the colour is laid on', an operation which was, he indicated, to be done very quickly and with a light hand 'using proper judgement to vary the beating by turning the brush according to the various directions that the veins have taken when laid on first'. Once the colour was tacky, the lights were to be taken out using a damp wash leather, and, when dry, the dark veins crossing the grain added using burnt umber and a camel hair or sable pencil. Knots were to be imitated by turning a piece of wash leather on the point of the finger, the same means being used to take out the light mark above and below the knot.\* The 'old' methods given by Whittock for the imitation of oak in oil and distemper

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have already been discussed in the general introduction to graining and marbling techniques above.

Vanherman provided instructions only for the imitation of oak in oil, indicating that there were two principal colours used for grounds, one using orange lead, and the other buff in tone. These could be made darker or lighter to suit the wishes of the employer. The graining glaze was composed either of raw or burnt umber, and was laid on in such a way as to be thin in some places and more opaque in others. It could be manipulated using the comb or the graining tool, and in particular areas the short grain could be imitated by dabbing the glaze with the 'points of the duster'. The medullary rays crossing the grain in a serpentine form were 'shaped out' with a piece of sponge, leather, or cork 'observing to avoid any formality or redundance', after which the whole was tenderly sweetened using a large badger hair brush; and lastly any 'dark serpentine' in the pattern put in across the grain.\*

Although Whittock used rotten stone to stain the ground for imitations of oak, since, he believed, yellow ochre was too deep in colour and would impart an undesirable greenish hue to the work,\* other authors seem to have been less apprehensive of this. Butcher suggested a coat of half white and half stone ochre as an undercoat for 'wainscot', which was to be finished with stone ochre alone, and shadowed in imitation of the wood with sienna or burnt umber.\* This formula, which may, of course, owe something to John Smith's late seventeenth-century advice on the preparation of 'Timber Colour', was repeated by the author of the Painter's... Pocket Manual, who merely specified yellow ochre in place of stone ochre;\* whilst Nicholson recommended the use of ochre, raw sienna, and umber in the ground, the glaze being made up from the same pigments, with the addition of burnt sienna.\* Variations in practice of this nature are, of course, to be expected, since natural oak in joinery is quite commonly stained to a variety of shades, and indeed Laxton listed imitations of 'New wainscot', 'White oak', and 'Old or dark oak'.\* In this connection it is interesting to note that, rather than vary the colour of the ground, Whittock appears

to have preferred to darken oil oak graining by glazing after completion, although this was not, he indicated, possible in distemper.\*

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Several items for 'wainscott colour grained' appear in the accounts for Whitehall Palace, Hampton Court, and Kensington Palace at a consistent price of 1s. 2d. per square yard.\* Although some entries for the last of these buildings also mention varnish in addition, apparently without variation in the rate, it is possible that the yardages for these were simply added together, since an item for varnish alone at Hampton Court also works out at 1s. 2d. per yard.\* The explanation for this discrepancy is otherwise elusive. Late eighteenth-century editions of the Builders Price-Book do not include items for oak graining, but the 1810 and 1813 editions gave rates of 1s. 6d. per yard for 'Twice in oil grained wainscot', and 2s. for the same varnished.\* The same rates were given in the 1812 edition of Crosby's Builders' New Price Book, although as with mahogany these were in addition to the basic paintwork, suggesting that one or other may be inaccurate. By 1821 they had risen to 2s. 3d. and 3s. respectively.\* The rates given in the 1818 edition of Laxton, in which, as already mentioned, several varieties of oak are listed, are still higher, 4d. per square foot being quoted for 'New wainscot' and 'Old or dark oak', whilst 'White oak' was 5d., varnish in all cases being extra.\* For 'Wainscot or oak', 'scientifically performed', Nicholson indicated a rate of 3½d. per foot in the 'Perpetual Price Book' attached to the New Practical Builder,\* and a further reduction in price seems to have taken place by 1831 when Skyring's Builder's Prices suggested 3d. as the appropriate rate, varnish in both instances being separately billed.\*

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Oak, bulbous  
or pollard

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Whittock defined 'pollard oak' as 'the lower end of the trunk of the oak tree, near and under the surface of the earth... cut directly across', and recommended it as a 'fit colour for hall chairs, tables, &c.' as it was easily repaired.\* Vanherman, who referred to it as 'bulbous oak', also mentioned its origin as the root of the tree,



remarking that he had 'grained drawing-room door panels and styles in this way, and added gilt mouldings, which produced a rich and superb display'. He indicated that it was not the easiest grain to imitate in oil, but a good resemblance could be obtained in water colour by a simple process. Burnt umber was first ground in beer or weak size:

'Then... having a good-sized bladder, made wet (but partially dried with a cloth), you dip it in the burnt umber, and apply it to the... ground... and... endeavour to imitate all the curls and zigzags you perceive in the pattern, by turning and twisting the bladder in every direction - by sometimes dabbing, sometimes trailing, pressing hard and gentle'.

- \*687 Two coats of varnish completed the work.\* Whittock, on the other hand, using a brush, first dabbed umber ground in beer on the centre of the panel, after which a flat varnish brush was used to 'spread the colour thinly from the mass in the centre in rays in every direction, taking care that the rays are not straight, like rays from the sun, but irregularly curled and wavy'. Small touches of Vandyke brown were then added at various points and blended with a badger hair softener. A 'flat brush, containing very few hairs, and some of them cut quite away' dipped in burnt umber was then drawn lightly over the work, and, when dry, the imitation finally varnished. Dark knots could be added before varnishing by the same means as those in birds eye maple.\*
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Olive

- The olive, Olea europaea, grows in southern Europe, and its timber, light greenish yellow in colour, was used in England for cabinet work during the latter part of the seventeenth century.\* John Smith indicated that: 'Olive-Wood is [i]mitated with Oaker, and a little White[,] veined over with burnt UMBER';\* and there is an item for a small quantity of 'olive colour grained' in an account for Hampton Court dated 1690, the rate being 1s. 6d. per square yard.\*
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Pine

- Edward Croft-Murray notes a first-floor room at 'Thurnalls' in Melbourne Street, Royston, Hertfordshire, in which the wainscot is, he indicates, painted to represent pine.\* He suggests this finish may date from about 1635, the date on two carved mantelpieces in the house, in which other decorative paintings were found under later coatings of paint at some time prior to 1910.\*

Princeswood  
or kingwood\*694

- The imitation of 'princeswood' was mentioned by Sir Roger Pratt in his notebooks;\* and at Erddig, Denbighshire (now Clwyd), the Drab Room was reported in 1692 to have contained elements 'painted... resembling... prince wood'.\* F. Lewis Hinkley indicates that the term is found in English seventeenth-century furniture accounts, and gives two identifications for the timber. The first is that of the Spanish elm, Cordia gerascanthus, native to the West Indies and Central America, and the second a timber known as 'violet wood', which, he indicates, comes from an unidentified species of the genus Dalbergia, native to the Guianas and Brazil.\* Rosewoods too, of course, belong to the latter genus, and can be of a dark purplish hue, so that it seems more than likely the name was applied by the seventeenth-century tradesman indiscriminately to a whole group of timbers of this colouration. Mr. Hinkley also identifies kingwood, the imitation of which was mentioned by Nicholson,\* as synonymous with violet wood; and early nineteenth-century references to the imitation of 'black rosewood' will be found under that timber below.

Red sandal wood

- Directions for the imitation of at least two types of red sandal wood were given by Whittock under the names red satin wood and coral wood. The use of Pterocarpus santalinus in connection with the preparation of lacquers has already been mentioned, Tingry's later editor referring to it as red saunders or red sandal wood;\* and F. Lewis Hinkley notes also the employment of the names rubywood or santal for the timber, indicating that it is native to South India and the East Indies. It is, he observes, dark claret red to almost black in colour, with a figuring of darker stripings in the lighter varieties, radial sawing sometimes bringing out a darker stripe.\*

Coral wood, on the other hand, he identifies as the timber of Adenanthera pavolina, native to India, Burma, and the Andaman Islands, and naturalised in the West Indies. Although it is yellow when first cut, the colour changes to a fine red or coral colour.\*

\*700 Whittock described coral wood as coming from Ceylon, and, since it was rare and valuable, 'a fit wood for the grainer to imitate, particularly in shop fronts that require glare and show, such as oilmen, hatters, and others', adding that it could be produced at a trifling expense. The ground for the imitation was to be laid in white lead tinted with vermilion, and the first glaze, in which the broad veins were to be worked, was made from vermilion, rose pink, and, in good work, one of the more expensive (drop) lakes ground in beer. This

\*701 was to be laid on with 'the flat camel-hair brush',\* imitating the graceful curve of the veins, which were to run in an upright direction, and the edges softened. When dry, a second glaze composed of Vandyke brown was drawn over the

\*702 veins with 'the flat hog's-hair brush',\* taking care to handle this tool 'so that it may bring the dark shade off with a point'. Immediately, a comb (No. 3 in his plate)\*

\*Fig. 25 was to be applied so as to 'give the effect of the dark vein running into the other' and the whole softened.\*

\*703

Fig. 24

Whittock also described the method for the reproduction of 'watered damask coral wood', which he illustrated as showing a figure similar to that of watered silk. For this, the ground was to be more pink than in the ordinary variety, and should, he indicated, therefore contain rather more lake. The graining glaze was made from a mixture of vermilion and rose pink ground in beer and applied by means of a hogs hair brush whose hairs, he stipulated, 'must be very thin and cut away in unequal distances as in the former example [i.e. that which he illustrated]\*... but the spaces must be narrow and more frequent'. The brush was to be well filled with colour, and 'drawn over the panel to be painted in graceful curls, sometimes using a tremulous motion of the hand'. Dark veins were subsequently added in Vandyke brown, although, he said, these were 'little seen in this sort of wood, as it is rather a continuance of the red in deeper shades', and would not require softening.\*

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\*Fig. 25

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For the imitation of 'red satin wood' on the other hand, which he noted, came from the West Indies (suggesting either that both species had been naturalised there, or that he was confusing the two), Whittock indicated the ground was to be laid in a mixture of vermilion, lake, and white, and the graining glaze made from a drop lake ground in ale, the lights being taken out with a sponge. A comb (No. 3 in his plate)\* was then passed lightly across the work, and the colour allowed to dry. The broad veins were formed with rose pink and vermilion, to which a little crimson lake could be added to give brilliancy, 'laid on with the flat brush, leaving the light parts in the centre'.\* When dry, small spots of black were touched in with a sable pencil, and the work completed by varnishing.\*

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No documentary references to the use of red sandal wood graining have been encountered to date, but the shop counter in the painting 'Choosing the Wedding Gown' by William Mulready (1786-1863) in the Victoria and Albert Museum appears as if grained a bright red colour, and it seems quite possible that this is a representation of either coral wood or the 'red satin wood' described by Whittock.\*

Red satin wood

See Red sandal wood above.

Rosewood

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Two species of rosewood are recognised, the American, Dalbergia nigra, which varies from yellowish to dark purple in colour, and Indian rosewood, D. latifolia, from the East Indies, of a medium or dark purplish brown. It seems likely that the darker purple varieties may have been used in the trade under the name princeswood (q.v.) during the seventeenth century, and kingwood by the early nineteenth, whilst the term 'black rosewood' is also encountered. Pyne described the frieze in the Golden Drawing Room at Carlton House, London, as painted in imitation of rosewood,\* and both Vanherman and Whittock suggested methods by which this could be effected.

Vanherman indicated that the ground was prepared in the same way as that for mahogany (viz. either buff, or dark or light orange) followed by a light, transparent

tint of lake, on which, he directed,

'with your graining tool, you lay in the large masses of stry with brown red, not too heavy, and then strengthen the shades with a mixture of lake and black, observing to keep the lights clean, and well defined'.

\*709 In blending or softening, he added, care had to be taken to avoid losing the character of the timber.\*

Whittock, on the other hand, provided no fewer than four different methods, observing that there was 'so great a variety of form in the grain and colour of this most elegant wood, that it is almost impossible to find two specimens alike'. The ground could not, he said, be too brilliant, vermilion, lake, and flake white being mixed to 'a beautiful rose red letting it partake more of the pink than the scarlet'. In the first method, nearly opaque Vandyke brown was spread over the ground in various directions, and then beaten 'against the grain, that is in an opposite direction to the way in which it was laid on'. A piece of wash leather on the point of a stick was next used 'with great freedom [to] take out the light veins that appear to be part of the veins formed by a knot'. Free and strong touches of the darkest tint of Vandyke brown were put in under these using a sable pencil, and also applied to other parts where the ground was thinly covered. The whole was then softened, and eventually varnished.\*

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For the second variety, which he considered very fit for book-cases, cabinets, and other work that was likely to be much handled, since it would not soil quickly, the grain was formed using Vandyke brown and rose pink ground in beer, laid on with a 'common tool'. The feather of a quill was then drawn over the colour, giving the hand 'a light tremulous motion in the part where the grain appears wavy'. The small bright lights were next taken out with the wash leather, and the work softened and allowed to dry. The very dark touches under the light parts were added using the same pigment 'nearly opaque'.\*

\*711

\*Fig. 25

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The third variety he described as 'the light rose wood', and required the same pigments for the glaze. In this case, however, it was 'put on not in a mass... but with a flat brush, with the hairs cut away till it has the appearance of a wide toothed comb... [and] spread on in strokes in a curled direction as if winding round a knot'. When dry, a comb (No. 3 in his plate)\* was applied directly across the grain, and a dark vein put in with Vandyke brown 'laid on nearly opaque'.\*

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Lastly, he described the variety 'now so fashionable for shop fronts', which was, he said, the common kind. The ground in this case could be less brilliant, and formed merely with Indian red and white lead as if for mahogany. Long streaks of glaze were irregularly laid on in nearly parallel lines, which waved and varied in thickness, and the graining produced between these using a 'flat hog's-hair brush, cut very square at the end, and the hairs cut away at unequal distances', knots and fissures being formed. The knots were then painted in with a large camel hair pencil, and the work beaten against the grain with a duster to complete the imitation.\*

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In the schedule of prices appended to the New Practical Builder Nicholson gave a rate of 10d. per square foot for the imitation of rosewood, whilst Laxton listed 'black rosewood' at 10d. and Skyring the same at 6d., varnishing in all cases being separately billed.\*

Sandal wood

See Red sandal wood above.

Satin wood

\*715

Vanherman observed that satin wood 'is a most elegant and delicate subject for the grainer, and requires all his skill to render it a perfect representation of nature'.\* Two types are recognised, that from the East Indian species, Chloroxylon swietenia, and West Indian timber from various species of Zanthoxylum, the commonest being Z. flavum. Both are yellow in colour and can be cut to show a well marked figure. Whittock described a method for the imitation of satin wood in distemper, the ground for which was to be the same as that he had indicated should be used for the lightest

variety of oak (rotten stone and white). On this a wash of yellow Oxford ochre ground in pale ale was to be laid, dappled with a small piece of sponge dropped 'accidentally on various parts of the work' to produce the characteristic markings, and softened with the badger hair softener. A second glaze of umber and raw sienna in ale was then applied with 'the flat brush with the hairs separated', passed 'over the work lightly, in a wavy direction'. This was softened in turn, letting the softener 'touch a little harder upon the bright lights than in the other parts, to remove the vein just laid on from it, and the work finally varnished.\*

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Vanherman too specified a pale yellow ground, this time made by mixing chrome yellow and white. Various shades of spruce ochre could, he said, be used for the glaze, in which one was directed, 'with the graining tool, to express the stry from the top to the bottom, waving occasionally, as you perceive in your pattern'.\* Nicholson, on the other hand, recommended the ground should be laid in a mixture of ceruse and Naples yellow, the graining glaze being made of raw and burnt sienna and Vandyke brown.\* The formula given for 'satin wood' by Butcher and by the author of the Painter's Pocket Manual, however, were for the imitation of a timber stained blue or green, and have been discussed in the article on harewood above.

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In 1802 Crace and Sons provided 'Chinese Satin wood imitated 2 colours and high varnished' in the Billiard Room at the Royal Pavilion, Brighton;\* whilst a few years later Laxton gave a price of 8d. per square foot for the imitation of 'satin wood', and Skyring a rate of 6d. for 'Hare or satin wood'.\*

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Satin wood, red

See Red sandal wood above.

Wainscot

See Oak and wainscot above.

Walnut

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The imitation of walnut was mentioned by Sir Roger Pratt,\* and items for 'wallnutt tree veined' are common in seventeenth-century painting accounts. The tree, Juglans regia, which produces this greyish brown timber, grows in

many European countries, but the English wood is most highly regarded for the beauty of its grain and tone. John Smith indicated that:

\*722 'Walnut-Tree is [i]mitated with burnt Umber, and White[,] vein'd over with the same Colour alone, and in the deepest places with Black.'\*

\*723 Whittock too described a method for reproducing this timber, but observed that at the time he was writing it was not much used 'as a fancy wood'. The ground was to be laid in a mixture of yellow ochre, a little umber, and white: and the graining glaze was made from raw umber ground in beer applied with 'the flat brush',\* or, if a large area was to be covered, with 'a large tool, nearly worn out'. If desired a knot could be added by placing a sponge on the wet glaze, 'and turning it round with the finger and thumb'. The light parts above and below the knot were also 'wiped out' with the sponge, and the work allowed to dry. The darkest veins were next added with 'the flat brush',\* taking care that these followed roughly the grain already laid on, and the dark parts of the knot, and the touches above and below it put in. The work was softened with a dusting brush, and finally varnished.\*

\*724 At Ham House, Surrey, in 1638 an item for 'painting... once over, Walnuttree coullour Vayned and Varnished' was priced at 8d. per square yard; whilst others for 'thrise primed and layde Walnuttrees coullor<sup>r</sup> in Oyll and Vayned' were charged for at 1s. 6d. and 1s. 8d.\* An item for 'Wallnutt Tree grained' in the Kensington Palace Pay Book dated 1692,\* and another in the accounts for Hampton Court in 1690\* were both charged at the rate of 2s. per square yard.

Yew

\*729 The English yew, Taxus baccata, provides a warm brownish yellow timber, often containing small 'birds eye' knots. In 1692 the panels in the Drab Room at Erddig, Denbighshire (now Clwyd), were described as painted 'resembling Yew';\* whilst during the early nineteenth century Laxton listed the imitation at 1s. per square foot, Nicholson gave a rate of 10d., and Skyring quoted 9d.\*



Glossary of  
marbles  
imitated

As with timbers, it is the architectural use of natural marbles which provides the key to an understanding of their imitation in paint. Relevant aesthetic aspects of this vast subject will be considered in Part Two, but it is an essential preliminary to examine the varieties available to the architect and house-painter, a matter of some difficulty in itself. During the seventeenth century, as in the Middle Ages, considerable use was made of native English 'marbles' in architecture, fireplaces of Derbyshire fossil limestone, for example, being fairly common in interiors of the period; whilst in addition Rance and Namur marbles were extensively imported from Belgium, besides other European varieties. In the eighteenth century it was natural that the use of Italian marbles should increase, both new stone and pieces robbed from the ruins of classical antiquity providing supplies for architectural use. In the latter instance, the locations of many of the quarries from which the different marbles had originally been obtained had been forgotten, and specimens accordingly were particularly highly prized. As no doubt did a number of his contemporaries, Sir William Chambers seems to have possessed a considerable number of both antique and currently quarried samples;\* and other systematic collections came to be assembled, Nathaniel Whittock referring, for example, to that made by J. Scott which was being catalogued for deposit in the Ashmolean at Oxford.\* The contemporary importance attached to the use of marbles is emphasised by a favourite method used for their display by the inlaying of small pieces to form chequered table-tops; and a useful example dating from about 1820 and formerly belonging to George Gwilt may be seen, together with its manuscript index in the furniture galleries at the Victoria and Albert Museum.\*

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Such collections are of obvious importance as working references, but the architectural classification of the various marbles they contain is a matter of considerable complexity, since, although with cabinet timbers it is possible in the majority of instances to identify the botanical species associated with the common name, this facility finds no comparison in the case of decorative stones. Indeed, strictly scientific criteria reflect a need very

different from that of the practising architect; and, whilst to the building trade any decoratively figured stone which will take a polish is a 'marble', to the geologist the term has a precise, technical meaning, being restricted to certain metamorphic rocks, so that many of those found listed below belong, in fact, to other geological classifications. Moreover, even amongst the true marbles, similarly coloured and marked specimens may be procured from widely separated quarries, but may nevertheless share a common trade name; and conversely different names, sometimes misleading as far as their geographical origin is concerned, have been applied to similar material from a single quarry. During the nineteenth century much effort was expended on research into the subject, and a number of important works were published, including Edward Hull's Treatise on the Building and Ornamental Stones of Great Britain and Foreign Countries (1872), S.M. Burnham's History and Uses of Limestones and Marbles (Boston, 1883), and W.G. Renwick's Marble and Marble Working (1909). The topic is, however, unfortunately one which has since been much neglected, at least from the point of view of architectural history; and, although the collections at such institutions as the Natural History Museum, South Kensington, and the adjacent Institute of Geological Sciences provide an essential complement to the study of these references, much remains to be done in making the subject accessible to the architectural historian in a way immediately relevant to his needs. A significant number of questions concerning the identification of marbles in paint therefore remain unanswered, and the Glossary which follows is almost inevitably based primarily on the terms used by the trade during the period covered by this book.

Aragon

- Whittock included the marble of 'Aragon' in his list of yellow marbles which, he said, were 'usually known by the name of Sienna' in painting, adding that all of these had 'nearly the same appearance';\* whilst Vanherman described 'Aragon' as yellow and orange in colour.\* Possible sources include both the region of Aragon in Spain, which lies adjacent to Catalonia from whence brocatello (q.v.) is obtained, and Aragona in Sicily, Hull noting varieties of yellow marbles from Castelnuovo and Segesta in the island.\*

## Bardiglio

- Grey marbles, often bluish in tone, are found in a number of places besides Burdilla in Italy, and exhibit a range of different figures. In particular Whittock included 'bardiglio from Carrara' amongst those which were, he noted, 'called in painting dove-coloured marble', providing a formula for the imitation of a grey marble with broad veins of white and black.\* Vanherman, however, described bardiglio as blue;\* and, writing early this century, Renwick clearly separated the two categories, dove, he indicated, being a soft grey marble with light patches, whilst he defined the former as having 'a light blue ground with fine pencil veinings of deep purple'.\* Hull also described bardiglio as grey or bluish in colour traversed by dark veins,\* but in Gwilt's Encyclopaedia it was simply described as a 'dark grey marble with black veins',\* and Burnham indicated that bardiglio was 'pure flesh-white or gray, covered with veins, spots, or clouds of very deep purple tending to black'.\* Any distinction between bardiglio and dove coloured marble (q.v.) does not seem, therefore, to have commanded universal acceptance; and the terms were probably regarded as interchangeable by many house painters, the two sharing a common price of 4d. per square foot in the price-books of Laxton and Skyring.\*
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## Black marble

- Black marbles, often containing white veins or fossil-like markings, are obtainable from several sources in Italy, and also from the counties of Galway, Limerick, Carlow, Kilkenny, Mayo, and Waterford in Ireland, and from the province of Namur in Belgium.\* In 1703, Neve noted the use of 'black fleak'd Marble' for chimneypieces,\* and in Gwilt's Encyclopaedia it is suggested that Wren used Galway marble for steps at St. Paul's Cathedral, Marlborough House, Hampton Court, and Kensington Palace;\* whilst towards the end of the eighteenth century Sir William Chambers employed black Namur marble at Somerset House.\*
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Félibien described a method for the imitation of black marble by grinding calcined lamp black and a little 'pierre de mine' with olive oil and soapsuds. Two or three coats were to be applied and the surface burnished when dry. If desired, white veins could be added with a small brush

\*748 before burnishing.\* An estimate dated 1705 for painting  
at Stoke Edith, Herefordshire, included 'Black marble' at  
\*749 ls. 6d. per square yard.\*

Black and gold  
marbles

In 1803 Soane expressed his intention to paint the  
'Basem.<sup>t</sup>' of the staircase at Pitzanger Manor, his villa at  
\*750 Ealing, in imitation of 'black marble & gold veins'.\*  
Black marble with 'yellow, white, and brown' figuring was  
\*751 mentioned by Vanherman,\* and Whittock described 'Black and  
\*752 gold marble' as 'in great use for superior chimneypieces'.\*  
'Portoro' Marbles having this colouration are also known as Portoro,  
a corruption of Port d'Oro, and are obtained from Porto  
Venere on the southern extremity of the peninsula protect-  
\*753 ing the Gulf of Spezia,\* similarly coloured stone being  
found at Ormea in Piedmont.

To imitate black and gold marble, Whittock indicated  
the ground should be prepared in black, and that 'the large  
spots from which the fibrous veins run' were to be of yellow  
ochre and white, mixed with a little vermilion to give them  
a golden tinge. The masses were to be 'dabbed with freedom  
upon the ground with the brush full of colour, and while  
quite fluid, small threads... drawn from it in all directions,  
some larger than others'. For quick work, where durability  
was not an object, distemper could be used, but oil was, he  
indicated, better. In cabinet work, he added, gold and sil-  
ver leaf could first be applied in certain areas, the black  
ground then put on rather thickly, and the veins and large  
areas taken out with a round-pointed bodkin and a wash  
leather on the point of a stick. When dry, other white and  
yellow veins could be added as before, and the work finally  
\*754 varnished.\*

British varieties  
of 'marble'

Having completed his list of marbles suitable for imi-  
tation, Vanherman observed:

'The above are foreign, but there is a great variety  
of the Irish and Scotch marbles, which do not yield,  
\*755 in beauty and diversity of colours, to any.'\*

Many stones, of a wide range of colours, capable of receiving a polish have been quarried in the British Isles for use as 'marble', and were used extensively for fireplaces, especially during the seventeenth century. They also enjoyed a vogue for ecclesiastical work during the nineteenth. Besides those mentioned by Hull, an exhaustive list

\*756 appeared in Gwilt's Encyclopaedia;\* but Whittock mentioned specifically only a variety of a deep grey colour, interspersed with black veins, besides the Cornish and Anglesey serpentines, adding that some specimens of the latter were in his opinion 'equal in brilliancy of colour and variety

\*757 of figure, to verde antique or Egyptian green'.\* The methods he described for their imitation will be found in the articles on serpentine and dove coloured marble below.

#### Broccatello

Whittock listed 'Broccatello' as 'a breccia limestone, composed of fragments of a yellowish red and purple colour, which are cemented by a semi-transparent white calcareous

\*758 spar', adding that it was little used in England.\* The term is, nevertheless, encountered in several contemporary price-books, and the marble itself was used by Chambers

\*759 (who referred in his Treatise to the 'broccatello of Spain')\* for a fireplace at Somerset House.\* Renwick described

\*760 'Spanish broccatelle' as a 'shell marble of brilliant appearance, quarried near Tortosa (Catalonia)'. The ground is, he noted, 'deep red, and is almost covered with small yellow,

\*761 grey, and white crystals'.\* Burnham gave a similar description, adding that the name 'Broccatello di Spagna' was applied to those varieties in which a violet colouration was present, but that when all the colours were yellow, the

\*762 marble was called 'Orientale'.\* 'Rose broccatelle di Centro' was, on the other hand, Renwick observed, a selected variety of Verona red having bands of a deeper shade than the ground

\*763 of the marble traversing the formation,\* but it seems unlikely that it was to this that Whittock referred.

Laxton listed the imitation of 'broccatelli' at 6d. per square foot, Nicholson 'Broccatella' at the same rate,

\*764 and Skyring 'Broccatella' at 7d.\*

Campan

\*765

Vanherman listed Campan, describing it as a green marble.\* Renwick defined the term as a distinctive name given to French variegated marbles quarried in the Campan district of the Hautes Pyrenees, adding that these could be identified by their peculiar mottled markings. Campan vert was, he indicated, a light green marble with white markings occasionally tending to flesh colour, having white crystalline veins, although he also gave details of other varieties having chocolate or reddish brown markings.\*

\*766

Carrara

Marble is quarried extensively from the range of the Apennines overlooking the bay of La Spezia in Italy, especially in the vicinity of Carrara, Massa, and Seravezza, a vast range of colours and figures being obtained. Vanherman mentioned the pure white marble of 'Carura', and Whittock bardiglio (q.v.) from the same source.\*

\*767

Cipolin

Whittock used the term 'cipolin' for 'the statuary [i.e. white] marble, traversed by veins of mica' the imitation of which was, he said, commonly called by the painters 'white-veined marble'.\* The term is, however, generally applied to marbles having typical onion-skin-like markings. Burnham listed several of these, including varieties from France and Saxony,\* but the best known stone of this type in undoubtedly the classical cipollino, a marble from Euboea in Greece, which had been quarried in classical times. Although the quarries had been lost, and were not rediscovered until the late nineteenth century, ancient pieces were known to Regency architects, and Jeffry Wyatt, for example, incorporated columns of antique cipollino in the Sculpture Gallery he formed for the Duke of Bedford from Henry Holland's Greenhouse at Woburn Abbey on which work started in 1816.\* It is quite likely, therefore, that imitations of the true cipolins were also carried out.

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Dolomite

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Vanherman listed 'Dolomite' as a pale red marble, with 'small globules'.\* Although dolomite itself is a term reserved by geologists exclusively for magnesian limestones, Burnham observed that: 'Many species of marbles are derived from the Swiss limestones and dolomites, including those valued for their qualities as an ornamental stone'. It is

possible, therefore, that Vanherman may have had such a stone in mind, and Burnham continued by describing a specimen which was a,

'Coralline marble of light-brown, enclosing the Madrepora vermicularis, of pale yellow, glittering spar, exhibiting large stars with a variable number of rays, [forming] a compact marble receiving a medium polish. Another kind of Madrepore appears like a gray, semi-pellucid flint, resembling the Indian agate; the color varies from ash-gray to grayish-black tinged with red, while the coral consists of white pentagonal columns crowned with a star.'

\*772 A similar variety, known as 'Feather Stone', was, he noted, found in England.\*

Dove coloured  
marble

\*773 Whittock described 'Dove-coloured marble' as including the 'bardiglio from Carrara', and other marbles 'of a deep grey colour, interspersed with black veins, found in Britain'.\* As already noted in the entry above on bardiglio, however, Renwick differentiated between dove and bardiglio, describing the former as an Italian marble, soft grey in tone, with occasional light patches, as distinct from the latter which had darker veins on a grey ground. It was, he said, quarried at Carrara, Massa, and Seravezza, and sometimes  
\*774 known as 'Blue Turquoise'.\* For the imitation of dove coloured marble, Whittock indicated that the ground should be prepared in a light lead colour on which broad veins of white and black were irregularly scumbled in oil, and blended together with the duster, 'so laid on that when they mix together they appear to form light and dark veins of grey, and not a decided black or white'. He added that some specimens were more mottled than others, but the marble  
\*775 was, he indicated, too dark to be required often in distemper.\*

\*776 Laxton and Skyring both listed 'Dove, or burdilla' at 4d. per square foot, although Nicholson gave a price of 3½d. for 'Dove marbling'.\*

Egyptian green  
marble

\*777

Writing at the beginning of the eighteenth century, Neve referred to the use of 'Egyptian Marble vein'd with a variety of Greens' for chimneypieces;\* and in the 1820s Whittock mentioned the imitation of 'Egyptian green' marble, indicating that the method of effecting this was the same as that he had described for verde antico (q.v.). It was, he said, a 'superior serpentine' and similar to verd antique, but differed slightly in the 'form of the veins, which run in a more horizontal direction, having a greater quantity of small fossil substances mixed with it, and the dark veins frequently running in streaks, which often appear as if broken by violence'. To this he added that there were 'many different sorts, which are distinguished by separate names', all of which, however, were generally, he said, called by this title.\* Hull, writing later in the century, mentioned a 'breccia di verde' from Egypt, which had been used by the ancients; and, in connection with his suggestion that the term verd antique was applied to a large number of varieties of green serpentinous rock, mentioned quarries in Upper Egypt and along the road from Keneh to Kosseir.\*

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French marble

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Both Laxton and Skyring listed the imitation of 'French' marble, the former quoting a rate of 8d. per square foot, and the latter 7d.\* A large variety of different marbles is obtained from France, and, since neither writer offers any details of colour or markings, it is difficult to suggest which of these was implied.

Florentine marble

\*781

Whittock described methods for the imitation of two varieties of 'Florentine marble', the first of which was 'seen to break suddenly into the form of rocks or ruins of houses', the second being an 'Italian argillaceous limestone'.\* This was known as Pisana by the late nineteenth century, and Burnham described the 'modern argillaceous marble of Pisa, called Lithomarge' in some detail, indicating that:

'The small fissures, filled with a ferruginous substance, often assume fantastic forms representing various objects;... if rocks, walls, and ruined castles are imitated, it becomes Ruin-marble; when



\*782 the lines represent doubtful forms, it is said to be Variform; and when unicolored, or simply veined, it is merely Lithomarge.\*

To imitate the ruin variety, Whittock indicated that the ground should be prepared in a mixture of white, Indian red, and black, mixed to form a very light reddish neutral tint. Umber or burnt sienna were used for the veins and were to be laid on 'very irregularly' whilst the ground was still wet. However, although he observed that the imitation was of good effect in small spaces, he cautioned 'the beauty of the work... will scarcely repay the great trouble there is in painting it'.\*

\*783

The ordinary variety he recommended as being suitable for passages and halls, and was, he said, easy in distemper. Yellow ochre and red were added to whiting which had been mixed with milk 'to the consistence of thick cream' until it was of a delicate yellowish fawn colour, and, at the same time, Indian red and pure white were prepared in separate basins, presumably using a similar medium or perhaps beer. Some of the fawn colour was dabbed on in two or three places with apparent carelessness, letting some areas be larger than others. Immediately, using another brush, Indian red was washed with freedom between the dabs of fawn, and the edges between them blended together with a large dusting brush. White and red veins were then drawn on using camel-hair pencils.\*

\*784

Giallo antico .

Renwick indicated that giallo antico was obtained from the vicinity of Chemtou in the Medjera Valley, Tunisia, and described it as a 'marble of great beauty, having a rich yellow ground with a rose pink tint and occasional deep red markings'.\* Burnham (who stated that the quarries were said to have been on Mount Maurasidus in Numidia) added that, whilst the base was always yellow, or yellowish, four varieties of this were recognised: dorato, or golden; cupo, or deep orange; paglia, or straw coloured; and carnigione, or flesh coloured.\*

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\*786

Imitations of giallo antico were listed by both Laxton

- and Skyring at rates of 1s. and 10d. per square foot respectively.\*
- \*787
- Granite
- In 1829 it was noted that the chimneypiece in the Billiard Room at Dunham Massey, Cheshire, was to be painted in imitation of granite.\*
- \*788
- Green stone
- An item for 'Green stone' at 2s. per square yard is included in an estimate for painting at Stoke Edith, Herefordshire dated 1705.\* Hull indicated that this name was 'much used, but much abused', adding that it should strictly be applied only to the group of plutonic rocks, which included diorite (which occurs at Cader Idris and Penmaenmawr in North Wales, Bardon Hill in Leicestershire, and St. Mewan in Cornwall), gabbro, and diabase (to which a number of British stones bear a resemblance).\* It is almost impossible, therefore, to obtain a precise idea of what was intended at Stoke Edith.
- \*789
- \*790
- Green verd
- Both Laxton and Skyring listed 'green verd', the former at a rate of 1s. per square foot, and the latter at 7d.\* In both cases the imitation of verde antico is separately given, showing that one of a number of other green marbles was intended.
- \*791
- Grey marble
- Vanherman listed 'Grey' marble, describing it as 'Saxon blue' in colour.\* Since he listed bardiglio (q.v.) separately, it seems likely that he was using the term 'grey' where others might have mentioned 'dove coloured marble' (q.v.). An account of 1638 for painting in the Great Hall at Ham House, Surrey, contains an item for 'painting lyke gray Marble the Chimney peece';\* in 1686-8 Streater painted 'Gray Marble Coloure' on walls and other stonework in 'Henry VIII's Chapel' at Windsor Castle;\* and an account of 1688 for painting at Tredegar House, Newport, Monmouthshire (now Gwent), has an entry for 'gray Marble & Tortell shell' at a rate of 1s. per square yard.\*
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- Jasper
- A number of sixteenth-century accounts apparently for the imitation of jasper exist, including one of 1592-3 for a bridge in the gardens at Greenwich Palace which involved

\*796 'jasperinge like a Rance'.\* This suggests the term may sometimes have been used simply to convey the use of marbling, especially where the imitation was red in colour, as was the case with rance (q.v.). Although no references to the imitation of jasper during the period covered by this book have been encountered, natural Sicilian jasper, a red marble obtained from that island, some varieties of which contain greenish areas, was used by Chambers in chimneypieces at Somerset House, and it is quite probable that its imitation was practised.\*

\*797

#### Lapis lazuli

The semi-precious mineralised limestone lapis lazuli occurs in several parts of the world, and has been described above in connection with the pigment natural ultramarine. The stone is a rich blue in colour, often with veins of white, containing gold coloured flecks of iron pyrites. In 1672, Salmon gave instructions for its imitation, directing that an opaque blue ground made from ultramarine or other blue pigment should be laid in a varnish medium on a white undercoat also in varnish. Then, he continued,

'with wild irregular streaks (in resemblance of nature) with liquid or shell gold, run straglingly all over the blew, adding very small specks upon the blew part, of such various colours, as are usually to be seen upon this stone'.\*

\*798

An estimate of 1705 for painting at Stoke Edith, Herefordshire, contains an item for 'Lapus Lasure' at 5s. per square yard;\* and at Burley-on-the-Hill, Rutland (now Leicestershire), trompe l'oeil busts on the staircase were painted in imitation of lapis lazuli by Lanscroom at some date prior to 1700.\*

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\*800

#### Lumachella

The term lumachella is applied to a large number of different marbles containing fossil shells, deriving from the Italian lumacha, meaning a snail or slug, and William Chambers, for example, listed five different varieties in his series of marbles.\* Whittock described lumachella as brownish grey containing shells, and Vanherman too stated that lumachelli consisted of 'Shells, united with brown'.\*

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- The specimens of 'Lumachelli antico' and 'Lumachelli di Spagna moderno' in a table-top of about 1820 in the Victoria and Albert Museum both conform to these descriptions.\*
- \*803
- Ordinary marble colour
- \*804
- Neve gave the price of painting 'ordinary Marble colour, on new Stuff' as about 1s. per square yard, adding that if painted onto old colour 'the price was about 9d.\* It seems most likely that veined white marble would have been the principal variety implied, although others which could be executed quickly using cheap pigments might also have been covered by the expression.
- Oriental marble
- \*805
- Both Laxton and Skyring listed the imitation of 'oriental' marble, the former at a rate of 1s. per square yard, and the latter 10d.\* The term is one commonly used in trade names of different colours of marble, for example, 'rosso orientale', and 'oriental alabaster'; but it seems quite possible that the completely yellow variety of Spanish broccatello (q.v.), which Burnham stated was called 'Orientale' was the one in question, although this is by no means certain.
- Parian marble
- \*806
- Both Whittock and Vanherman referred to the pure white Parian marble.\* The name is properly applied to that from the island of Paros, which, wrote the author of Stuart's Dictionary of Architecture 'has always been celebrated', adding that the finest was that obtained from Mount Marpessus.\*
- \*807
- Whittock, however, simply regarded it as the 'pure delicate and translucent species of granularly foliated limestone... used by the ancient Greek sculptors', mentioning the group of the Laocoon and the sculpture in the pediment of the Parthenon (the latter, in fact, of Pentellic marble)\* as examples. It was, he said, easily imitated by the painter as it was 'in its most perfect state... quite white'.\*
- \*808
- \*809
- Porphyry
- \*810
- References to the imitation of 'porphyry' are commonly encountered. An account dating from 1610-11 for a chimney-piece at Somerset House indicates that it was 'garnished with divers Culloured stones' including 'purfrire';\* and Croft-Murray notes a chimneypiece of about 1635 at

'Thurnalls', Melbourne Street, Royston, Hertfordshire,  
on which a reputedly contemporary imitation of porphyry  
\*811 may be seen.\* On 1st July 1664, John Evelyn visited  
Thomas Povey's house in Lincoln's Inn Fields, and recorded  
'the perspective in his court, painted by Streeter... with  
\*812 the vasas in imitation of porphyrie'.\* In the years around  
1800 also, imitations of 'porphyry' became popular. W.H.  
Pyne mentioned its use in the Entrance Hall at Carlton  
\*813 House,\* and an example, reputedly dating from about 1843,  
may be seen on the overdoors in the Hall at Prestwold Hall,  
\*814 Leicestershire.\*

In interpreting references to 'porphyry', however, it  
must be borne in mind that, although, as Hull remarked,  
the term was originally only applied to certain kinds of  
igneous rock of reddish or purplish tint, such as the red  
porphyry of Egypt, a green porphyry was quarried in anti-  
\*815 quity from 'between Sparta and Marathon'.\* This, he indi-  
cated, has a 'dark green felspathic base with imbedded light-  
green crystals of felspar'; but, although known to the archi-  
tects of the Regency, specific references to its imitation  
have so far proved elusive, and it is likely that the major-  
ity of unqualified references to 'porphyry' are to the more  
commonly encountered red variety. This, Hull indicated, has  
a 'reddish-brown or chocolate-coloured felspathic base, in  
which small crystals of nearly white felspar are abundantly  
\*816 distributed';\* whilst Burnham recorded that the 'ancient  
quarries of red, antique porphyry were re-discovered by  
Burton and Wilkinson, in a district east of the Nile, in  
the mountains of Djebel Dakhan, twenty-five miles from the  
\*817 Red Sea'.\*

Investigation of the paintwork in the Balcony Room at  
Dyrham Park, the account of 1694 for painting which 'marble  
\*818 Colour' survives,\* revealed that it had originally been  
decorated in imitation of red porphyry and a pink and orange  
\*819 marble.\* In 1803 Soane painted the skirting and other ele-  
ments in the Breakfast Room at Pitzanger Manor, Ealing in  
\*820 imitation of red porphyry,\* having recorded his intention  
of using this treatment for the skirting, both on a drawing  
\*821 and in his notebook, each of which refer to 'porphyry'.\*

Neither example is visible today, but an imitation of red porphyry executed at some date after 1795, and possibly dating from this period, has been recorded as extant on the overdoors in the Dining Room at Southill, Bedfordshire.\*

\*822

Whittock described the imitation of red porphyry, indicating that the ground was to be composed of Venetian red and white together with a little vermilion. On this a layer of spots was sprinkled by striking against the back of an old knife a brush which had been dipped in a mixture of the ground colour and a greater quantity of white, and wrung out. This was allowed to dry and the process repeated using a slightly darker mixture made with Indian red and a very little white, taking care to apply the spots sparingly 'and rather more in some parts than others'. Finally white was sprinkled on, holding the stick against which the brush was to be struck at least a yard above the work, and, when dry, a narrow, opaque white vein added using a sable pencil, transparent threads being drawn from it in various directions using a feather.\*

\*823

Rance

This 'Belgian fossiliferous marble having a reddish-brown ground and large white markings, presenting a handsome though rather massive effect' was quarried, Renwick indicated, at Rance in the province of Hainaut. He also mentioned that the quarry had been re-opened in 1900 after nearly two hundred years of disuse.\* Examples of its imitation before the Civil War include its use on a bridge at Greenwich Palace, an account dated 1592-3 for which contains an item for 'jasperinge like a rance'.\* A second reference occurs in an account of 1593-4 in connection with a 'little arbor' in the garden of Whitehall Palace;\* and a third in an account dating from 1610-11 for painting a chimneypiece at Somerset House which by this means was 'garnished with divers Culloured stones as rance' and several others.\* Neve mentioned use of the marble itself for chimneypieces,\* and its imitation during the late seventeenth or early eighteenth centuries therefore seems likely.

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Rock stone

An estimate for painting work at Stoke Edith, Herefordshire dated 1705 contains an item for 'Rock stone' at a

\*829 price of 3s. 6d. per square yard.\* It is difficult to suggest an identification for this imitation, but it seems most probable that a conglomerate or breccia was intended.

Schiola

\*830 Vanherman included 'schiola' in his list of marbles for imitation, indicating that it was 'White, orange, light and dark brown, and brown red'.\* Possible identifications might include the marble known as Escalette from the department of Ariège in the French Pyrenees, or marble from the Greek island of Skyros.

Serpentine

\*831 Serpentine was one of the 'divers Culloured stones' imitations of which were used in 1610-11 to decorate a chimney-piece at Somerset House.\* Whittock mentioned varieties from Germany, Russia, and both Cornwall and Anglesey in Britain, indicating that the noble, or precious, serpentine, in distinction to the common variety which was found in great abundance on Anglesey, had nearly the same appearance as Egyptian green marble. Its green, he indicated, was 'generally the cold colour of the leek, but varies in shades, some appearing the darkest olive', whilst the black veins sometimes ran 'in an horizontal direction, and then suddenly break and appear nearly upright'. In other cases, he added, they seemed 'to have undergone a violent concussion, and become broken and shivered to small pieces'. The common serpentine, on the other hand, was, he said, not so bright and varied, the dark shades of green being much broader, and the light veins not so fine and reticulated, whilst the black veins were so mixed with the darkest shades of green as to be scarcely perceptible in some instances, so that the marble was, he concluded 'dull, and unfit for ornamental painting'.\*

\*832

Hull mentioned the 'rich oil-green colour' of Noble serpentine from Prussia, and went into considerable detail over the various varieties of common serpentine found in the British Isles. In particular he described two varieties from Anglesey, a greenish, or sometimes reddish, variety which occurs at Llanfechell and Ceryg-moelion, and a brecciated serpentinous marble, with veins of white calcspar

\*833 found at Tre-gala.\* Besides those mentioned by Whittock, it may be noted that verde antico (q.v.) is classed geologically as a serpentinous marble.

Siena marble

True Siena marble was described by Renwick as an 'Italian variegated marble, having a yellow ground with deep purple veins' which was quarried at Siena and Montarenti. A variety without the distinctive veinings, the ground colour being of a lighter tint, was, he indicated, known as pale Siena.\* Whittock, however, remarked that in painting all the yellow marbles were usually known by the name of 'Sienna marble', and listed varieties from Syria, Aragon, and Siena, remarking that all three were nearly the same in appearance. Rather inaccurately he also described 'Sienna' as 'the part of Spain where this beautiful marble is found in great abundance'. Its imitation was, he indicated, 'used with good effect for door posts, halls, passages, and in furniture painting',\* and he gave methods for effecting this in both oil and distemper.

\*834  
\*835  
\*836 For the first medium, the ground was laid in pure yellow ochre, and the 'varied tints' that were first laid on it made from yellow ochre and white, raw and burnt sienna. These were put on very thickly with a brush and blended with the softener. Whilst still wet the 'veins that are more removed from the surface' were to be put on with a sable pencil, using Venetian red and Prussian blue, running the lines 'in the same direction as the shade'. The darker veins 'nearer the surface' were carefully drawn using lake, Venetian red, and blue 'mixed to the tint required', after which the work was allowed to dry. The original shading could then be improved if necessary, and the darkest veins added using 'lake and Prussian blue, letting them run in small threads over those previously put on'.\*

For distemper work, yellow ochre and whiting mixed with size were used for the ground, and separate basins provided containing raw and burnt sienna, Indian yellow ochre, whiting, lake, and damp blue, all ground in beer except for the whiting, which was instead 'mixed very thickly with milk'. Separate brushes were used with great freedom to paint on



large broad veins of yellow ochre mixed with a little white. Next to these, small areas of raw sienna were added, followed by 'a dash of white by itself, and near that some burnt sienna'. When one or two yards had been covered in this way, the brush used for the whitening was dabbed over the work in four or five places, and a large dusting brush dipped in size alone and squeezed out used to soften and blend the different shades together. Small veins of Indian red and blue, and a small vein of lake and blue were added while the work was still wet to complete the imitation.\*

\*837

Pyne mentioned the imitation of Siena marble in the Entrance Hall at Carlton House, London,\* and Laxton gave the price for the imitation of 'Sienna' as 6d. per square foot.\* Nicholson too gave the same figure, but Skyring suggested a rate of 7d., varnish being extra in all cases.\*

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Statuary marble

See White marbles below.

Syrian marble

Whittock included marble 'of Syria' in his list of yellow marbles which were, he said, usually 'known by the name of Sienna' (q.v.) in decorative painting, adding that all these 'have nearly the same appearance'.\* A yellow marble has been obtained from the Lebanon Mountains,\* and it may have been to this that Whittock was referring.

\*841

\*842

Touch

Croft-Murray notes an account of 1610-11 for the imitation of 'divers Culloured stones' on a fireplace at Somerset House, London, including an item for 'touch'. He suggests that this may be identified with touchstone (basanite).\*

\*843

Valencia

Vanherman described 'Valentia' as a violet marble, and it seems most probable he had the yellowish cream marble containing pink with reddish purple veins from Valencia, Spain, in mind.\*

\*844

Venetian marble

Laxton, Nicholson, and Skyring all referred to 'Venetian' marble, the first giving a price of 8d. per square foot, the latter two suggesting a rate of 7d.\* The

\*845

identification of 'Venetian' marble presents something of a difficulty, since, as Hull observed, it 'is scarcely necessary to add that all the stones used in Venice have been brought from long distances'. However, he also mentioned the extensive use of Verona marble at Venice,\* and, since this well known variety seems otherwise to be missing from the literature of the Regency period, it is quite possible it was to this that the term 'Venetian' was applied. Many varieties of Verona marble have been worked, but these are of two basic colours, being either red or yellow. Renwick described the former as a fossiliferous marble, brick red in colour, with small markings of lighter tone, whilst the latter, he indicated, is of similar character and formation, but has a more yellow colour.\* It is also possible, however, that the term 'Venetian' was used simply to imply a veined marble, since Skyring, whose price for 'Venetian' marble has been mentioned above, also quoted a rate of 3d. for 'Venetian marbling on dead white ground'.\*

Verde antico

Pyne mentioned the use of 'verd antique' together with other marbles several of which were imitated in the Entrance Hall at Carlton House.\* Whittock indicated that since it was scarce and expensive it was considered greatly desirable, and described it as containing fossils;\* but Vanherman simply observed that 'verde antique' had 'white and black patches, dark green, &c.'\* The true verde antico (of which, he observed, there were light, medium, and dark varieties) was described by Renwick as a 'brecciated serpentine of great beauty, made up of angular fragments of light and dark green serpentines and pure white marble. The colouring matter has', he continued, 'penetrated the white fragments during the process of cooling down, giving the marble its distinct markings'; and he also mentioned the rediscovery in 1886 of the ancient quarries worked by the Romans near Larissa in Thessaly.\* Wirting a few years before this event, however, Burnham had mentioned that verde antico had been quarried near Atrax on the river Peneus in Thessaly, describing one variety as having 'a foundation of lively green with spots of deeper shade passing to blue', whilst another, he said, 'exhibits marks of snow-white or clear black'. This so nearly resembled a green stone quarried in Piedmont, that it was, he said,

\*853

only with difficulty that the ancient was distinguished from the modern;\* and in earlier years it is clear many other green marbles were variously referred to as verde antico. Thus Hull wrote that 'vert antique' was 'probably of no special description, but the name applies to many varieties of green serpentinous rock used by the ancient Romans, sometimes brecciated, or variously veined, and derived from various sources, both those of Italy, Greece, and Egypt', on all of which he enlarged.\*

\*854

Whittock gave methods for the imitation of 'verd antique' in both oil and distemper. The ground, as for all green marbles, was prepared in black, and on this, using a hogs hair tool, white lead was scumbled 'so thin in places that the white is scarcely perceptible, and in others nearly opaque'. Whilst this was still wet, the colour was rubbed off with a piece of wash leather 'in the shape you wish the shells or other fossil remains to appear'. Other shells could be formed by pressing hard on the work with a square piece of cork notched in one or two places, and turning it between finger and thumb. A partly cut away goose-quill was then passed over the white, which would 'take it out in small irregular veins over the black'. By 'suddenly checking the hand, and making it take an angular direction', he indicated, 'the veins will break and curl as they do in nature, appearing with more freedom, fineness, and variety, than they would in some hours painting with the sable pencil, the usual mode of drawing veins in this marble'. The work was allowed to dry before localised glazing with Prussian blue and raw sienna, parts being left uncoloured. For this he recommended distemper colour, since this would dry quickly, although most painters, he intimated, used oil. When dry, a feather similar to that already used was dipped in whiting ground very finely in milk and used to add the light veins and thicker white veins; and a few dark veins of Prussian blue, 'made to curl lightly over the strong lights', added with a sable pencil. When this in turn was dry, a final oil glaze of Prussian blue mixed with a preponderance of raw sienna to produce a 'fine warm green' was applied overall.\*

\*855

\*Fig. 24

\*856

Where durability was unimportant, such as in the interiors of 'theatres, ball and concert rooms, &c. where pilasters of this elegant marble are introduced' it could, Whittock indicated, be imitated in distemper. Lamp black ground in size was first laid on in 'large veins or streaks' with a large brush, and a second brush used to 'dash in' white between these. A large dusting brush was used to blend these 'making the veins imperceptibly run into each other'. Smaller tools were used to dab white figures on the black, and black spots 'of various sizes, to represent the shells, &c.' on the white. The 'flat hog's-hair brush with the hairs separated' (the tufted brush he had illustrated)\* was then used to draw small irregular veins over the black; and, whilst the work was drying, a vein of pure black, 'formed in a zig-zag, wavy direction', 'laid over that part which has become grey from its incorporation with the white'. When dry, a thin glaze of king's yellow ground in thin size was to be laid on quickly 'with a light hand' in order to prevent the distemper colour from absorbing the varnish. This was to be the common spirit varnish in which a little Prussian blue and raw sienna had been ground to form a green glaze.\*

For tabletops or slabs which could be laid flat, a third method provided 'the most perfect imitation that can be produced'. The ground was laid in common stone colour in oil, and lamp black ground in thin size applied with a large brush 'leaving spaces in various parts of the work'. Whiting ground in milk was then 'poured upon the black in thin streams, and the table or slab... moved in various directions to let the white run in veins among the black, which by this means floats and branches out into more natural and foliated veins than it is possible to produce with a brush'. A wet feather could next be used to draw small threads from the wet masses of white over the dark parts that had dried, and when the whole had been allowed to dry the fossil figures were drawn in with a camel hair pencil. When again dry, a coat of spirit varnish was applied, on which a few bright lines and thin glazes 'of oil colour of various tints placed where required'. A green glaze of Prussian blue and raw sienna was then applied, and

\*857 the work finally varnished.\*

Laxton, Nicholson, and Skyring all listed imitations of 'verd antique' at rates of 1s. 6d., 1s. 2d., and 10d. per square foot respectively, exclusive of varnish.\*

Verde di Corsica

\*859

Whittock referred to verde di Corsica among the other green marbles,\* and a sample of 'Verde di Corsica moderno' is contained in a table-top of about 1820 in the Victoria and Albert Museum.\*

\*860

Verona marble

See Venetian marble above.

White marbles

\*861

Several instances of the use of imitations of white marble before the Civil War may be noted. At Sir Thomas Cawarden's house in Whitefriars, London, 253 square yards of 'whyt marbyll' were executed prior to 1544;\* parts of a chimneypiece in the Pergola at Somerset House, together with a doorcase, were painted 'like whyte Marble' in 1629-30;\* and at Oatlands, Surrey, in 1637-8 a chimneypiece was painted in a 'white marble cullo<sup>r</sup>'.\* All three examples have been destroyed together with an early eighteenth-century instance which occurs as an item in an account for work at St. Mary Redcliffe, Bristol, in 1710, when 'all the in Side of the Partition Windows in the Midle Chancill' was painted 'with White Marble Colour'.\* Such references may, however, imply a veined rather than pure white marble, since an item in the accounts of 1638 for painting at Ham House, Surrey, is for certain elements 'Likewise painted like white Marble', the preceding item having been varnished and 'veyned'.\* In an estimate dated 1705 for painting work at Stoke Edith, Herefordshire, on the other hand, an item for 'White in nutt oil' at a rate of 1s. 6d. per square yard appears between 'Black marble' and 'Green stone',\* suggesting perhaps that this too was seen as one of a number of 'marbled' finishes, and that plain white paint was indeed used in this context.

\*865

\*866

Writing in the early nineteenth century, both Whittock and Vanherman mentioned the imitation of the white Parian marble (q.v.) from the Greek island of Paros, whilst the

latter also mentioned the Italian white Carrara marble  
 \*867 (q.v.).\* White marbles occur in several other locations,  
 including France, but these two were undoubtedly the best  
 known for purity of colour. The early twentieth-century  
 author Renwick noted that although the term statuary  
marble was a general name given to all pure white marbles  
 free from markings, the name was generally understood as  
 meaning the best qualities of Italian white, the principal  
 supplies of which were obtained from Carrara, Massa, and  
 \*868 Seravezza.\*

White veined  
 marble

In 1638 the 'great Arch' through which the Staircase  
 at Ham House, Surrey, was entered was 'layde over twice  
 w<sup>th</sup> whit lead in Nutt Oyll and varnished and veined as  
 \*869 polished Marble';\* and references to 'white and veined'  
 may be found in several late seventeenth-century painting  
 accounts, including, for example, an item for 171 square  
 yards in the Priest's Lodging over the Ante-chapel at  
 \*870 Whitehall Palace in 1687,\* and another for 114 yards at  
 \*871 Hampton Court, Middlesex, in 1690\* at rates for 2s. and  
 1s. 6d. per square yard respectively. A number of similar  
 items occur also in the Kensington Palace accounts between  
 1692 and 1693 at rates of 1s. 8d. or 2s. per yard, the  
 first also being the rate for 'White & veined in nutt Oile'  
 and for 'White colo<sup>r</sup>: veined'; whilst another entry refers  
 to 'White & veined and varnished' at a rate of 3s. 3d. per  
 \*872 yard.\* In the early nineteenth century Laxton gave a rate  
 of 2d. per square foot for 'Veined on a dead white ground',  
 and Nicholson a price of 3½d. per foot for 'Veined' marbl-  
 \*873 ing.\* Suggesting a price of 3d., however, Skyring seems to  
 have adapted Laxton's text, quoting for 'Venetian marbling  
 \*874 on dead white ground'.\* It is possible, therefore, that,  
 as noted above in connection with Venetian marbling (q.v.),  
 the term may also have been applied in the trade to white  
 veined marbles besides that obtained from Verona.

The late seventeenth-century writers Stalker and Parker  
 described a method for imitating a marble of this type,  
 which, they claimed, 'if neatly done, well polisht, and  
 varnisht, will not only exceed any Marbling in oyl, but  
 will in beauty and gloss equal the real stone'. Their

method seems to have been conceived in terms of small boxes or furniture, a white gesso ground, the last few coats of which were based on white lead, first being provided. 'Two or three degrees' of vine black were then mixed with white lead and a very weak warm size to the colour intended for the 'clouds and veins', the work wetted, and the palest colour laid on with 'a great Camels-hair-pencil'. Whilst the work was still damp, but not too wet, a smaller pencil was used to touch in the lesser veins, using a colour one degree darker than the first, and lastly the deepest colour applied with a small, pointed feather, in such a way as to 'touch and break all your suddain or smaller veins, irregular, wild, and confused, as you have them in the natural Marble', the completed imitation eventually being varnished.\*

\*875

A comparable method for imitating 'marble color', this time in oil, was described by the American author Hezekiah Reynolds. The work was primed and undercoated in white paint containing half white lead and half Spanish white, the third coat being laid in pure white lead. Whilst this was still wet, one was directed to:

'Shade with Prussian blue, ground and mixed with oil, and laid on with a graining brush while the third coat is green; in imitation of clouded marble'.

\*876

The work was to be finished with copal varnish.\*

The early nineteenth-century writer Nathaniel Whittock, in discussing 'Cipolin, or white, veined marble' provided both oil and distemper formulae for its imitation. The ground for the former was to be white, prepared perfectly smooth and the first, broad, feint veins 'scumbled, or spread very thinly over the ground' using a mixture of white, black, and Indian red, since, he observed: 'The shadows of white always partake of a yellow hue, and thus the faint veins will appear of a reddish grey'. The veins nearer the surface were to be made a little more grey by adding black, and applied 'sometimes making them form angles, and then letting the lines seem to float away in a

zig-zag direction'. The veins 'nearest the eye' were, of course, he said, darker than the others, and it was necessary to add a little lake to the black and white, whilst in some specimens a little blue would be required. These were to be drawn sparingly 'with a fine sable pencil very thin, and made to take nearly the direction of the last veins'. In all cases the veins were 'put on one upon another while wet, and blended together with the badger-hair softener'.  
\*877 Once dry, the dark veins could be partially retouched.\*

To imitate white veined marble in distemper, the walls were first prepared in size and two coats of common white-wash, a third coat being added made from whiting mixed with milk. Lamp black, Indian red, and damp blue were separately ground in milk, and, everything being to hand, since, he indicated, the whole had to be finished while the work was wet, one commenced at the top of the room by laying at the most a yard or two with a very thin coat of the white ground in milk. Immediately, a little black, Venetian red, and whiting were quickly mixed using 'another brush kept on purpose for this tint' and the broad veins drawn on and softened with 'the large brush used for the white'. Slightly darker, narrow veins were superimposed on this, and then a few veins were drawn very thinly with the blue and Indian red 'always inclining the same way that the large vein is made to run'. Finally, using a camel-hair pencil, a thin white vein was 'made over the blue veins'. In conclusion, he stressed the need to keep the edges of the work always damp, and observed that if the work was varnished it would have the effect of oil colour, whilst if left unvarnished the milk would be quite adequate as a binder.\*  
\*878

Nicholson also provided a formula for the imitation of a marble of this nature, indicating that the ground was to be laid in white lead diluted in 2/3 linseed oil and 1/3 oil of turpentine, a mixture of blue black and a little Prussian blue being used for the veins.\*  
\*879

#### Other imitations

To complete this survey of imitations, four further subjects remain to be considered: Tortoise-shell; mother of pearl; bronze; and ceilings painted to represent a cloudy sky.



Tortoise-shell is obtained from the hawk's-bill turtle, Eretmochelys imbricata, found in most tropical and sub-tropical seas, and was used during the late seventeenth century for the inlay of such furnishings as mirror frames. Naturally enough it seems to have been pressed into use as an imitation in an architectural context, and a room at Tredegar House, Newport, Monmouthshire (now Gwent), was painted to represent 'gray Marble & Tortell shell' in 1688.\* In the same year, discussing the imitation of tortoiseshell, Stalker and Parker observed:

\*880

'House-Painters have of late frequently endeavoured it, for Battens, and Mouldings of Rooms; but I must of necessity say, with such ill success, that I have not to the best of my remembrance met with any that have humour'd the Shell so far, as to make it look either natural, or delightful.'

They therefore suggested two methods by which this imitation could be properly effected. Both required a ground of silver leaf, and may, perhaps, have been more appropriate to furniture than large areas of wainscot. In their first method, Vandyke brown finely ground and diluted with either common size or water in which gum arabic had been dissolved was used to 'spot the darkest of your Shell'. Once this was done, the reddish tones which appear on the edges of these areas, together with those which form streaks on the transparent parts, were put in with dragons blood. This was to be finely ground in gum water, and applied using a small pencil, 'flushing it in and about the dark places more thick, but fainter, thinner, and with less colour towards the lighter parts of the shells; sweetening it so, that by degrees it may loose its strength of red, being intermixt with, and quite lost in the silver, or more transparent part'. The work was next varnished using six coats of seed lac varnish, and a lacquer made from equal parts of dragons blood and gamboge applied, using as many coats as necessary to make the silver appear gold in colour. The work was finally polished.\*

\*881

Their second method called for the use of burnt umber,

Vandyke brown, brown pink, and lake, thickly ground in drying oil and placed on a palette. A coat of turpentine varnish was applied to the silver leaf, and the brown pink and lake thinly mixed with more varnish used to lay in all the 'faintest clouds or spots'. These could then be softened, and, once the work had dried, a second coat of varnish was applied. The umber and Vandyke brown were next used in the same way to lay in the 'clouds more warm and dark' than those at first applied, sweetening these 'so that you cannot perceive where either of them begin or end'. This could be repeated if necessary, and the work completed by glazing with brown pink to which, they observed, the addition of 'a little tincture of Verdigre' would not be amiss. Alternatively, the lacquer used in the first method could be substituted.\*

\*882

Mother of pearl

Mother of pearl may be obtained from many shells, but in Ure's Dictionary it was suggested that only the 'large oysters of the Indian seas' secrete a coat of sufficient thickness to be of commercial use.\* A method for the imitation of 'mother-o'-pearl' was described by Vanherman, who introduced it to his readers as 'a new ornament of decoration'. Its execution required, he indicated, an artist of no mean ability, so that, he warned, the employer would find such work was 'not performed for a trifle'. The ground was carefully prepared in the same way as for grain-  
ing, the outlines of the mother of pearl motifs next sketched on, and silver leaf applied to them using a gold-size. Lake, Prussian blue, and yellow lake ground in oil and thinned for use with mastic varnish and oil of turpentine were then to be laid on the surface of the leaf 'in masses, as you see them in nature', and their edges blended and softened, so that the red mass would 'unite with the blue imperceptibly, and the blue with the yellow, and the green and purple the same'. Artfully combined in this way the colours would, he said, 'produce that changeable appearance so much admired in this beautiful production of nature', but, he warned, the imitations could display a meagre, flat, and poor effect unless given shadows 'to relieve and raise them from the ground'.\*

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- Various qualities of metal powder were used in the reproduction of oriental lacquer-work during the later seventeenth century and beyond, but were also employed in connection with the imitation of bronze, both new and patinated. Stalker and Parker described the colours and varieties available, listing brass dust, silver dust, green gold, 'dirty' gold, powdered tin, and copper, noting the criteria for their selection together with details of their respective prices which ran from 4s. to over 16s. per ounce.\*
- \*885 Dossie too listed the range available, mentioning true gold powder, 'German gold' (which was made from Dutch metal), 'Aureum Mosaicum' (made from 'tin coloured and rendered of a flaky... texture by a chymical process'), silver powder, and copper powder.\*
- \*886 During the early nineteenth century, Lewis Berger had fairly substantial stocks of bronze powders, listing pale bronze, silver bronze, copper bronze, pale gold bronze, and deep gold bronze in his annual stocktakings at prices ranging from 10s. to 15s. 6d. per pound.\*
- \*887

Dossie described the process of bronzing as, 'colouring by metallic powders, plaister, or other busts and figures in order to make them appear as if cast of copper or other metals'. Although silver or gold powders could be used for the purpose, proper bronzing was, he said, of a deeper and redder colour achieved either by grinding red lead with the metals or by the use of copper powder. This finely divided form of the metal was prepared by the precipitation of copper from a solution of copper nitrate by the addition of iron. Although of old, the powder had been laid on in a size medium, he believed it was better to apply it to a japanner's gold-size in a tacky state.\*

\*888

D'Aviler too had remarked that bronze might be imitated, mentioning use of the technique on plaster, wood, iron, or lead, and described how its colour could be varied so as to have a reddish, yellowish, or greenish cast. Although the colour of the copper powder could be deepened by means of heat, he indicated that use of rouge brun in execution would also have this effect; whilst to make the bronzing of a yellowish colour, the undercoat should be made of pure yellow

\*889

ochre. For a greenish colour, yellow ochre was used with bone black.\*

The extent to which these techniques were applied to architectural ornament as distinct from sculpture in English interiors of the late seventeenth century and majority of the eighteenth is not very clear, but at the end of the latter century a fashion arose for the imitation of green, patinated bronze on such elements as doors and the enrichments of mouldings. Several methods by which this could be effected were published during the first half of the nineteenth century, including that for bronzing plaster figures suggested in the Painter's... Pocket Manual:

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'For the ground, after it has been rubbed down, take Prussian blue, verditer, and spruce ochre. Grind them separately in water, turpentine, or oil, according to the nature of the work, and mix them in such proportions as are required to produce the colour desired. Then grind Dutch metal in a part of this composition, laying it with judgement on the prominent parts of the figure, so as to produce the best effect.'\*

\*891

Two years later, Whittock described a means by which trompe l'oeil effects of light and shade could be achieved in the bronzing. Insisting on the use of a distemper medium, he directed the ground was first to be laid in a middle tint of king's yellow, blue, and black. On this the shades were to be applied using a mixture of black and red. The strong lights were then added using king's yellow and a little Indian red, and could be further heightened by dusting powdered bronze onto wet size applied to them.\* An additional refinement for such a distemper-based bronzed finish, this time composed of about fifty per cent pipe clay, with Prussian blue, patent yellow, raw umber, and lamp black, was described in the Painter's, Gilder's, and Varnisher's Manual. This lay in a final polishing of the surface after coating with a thin lather of castile soap, allowing this

\*892

to dry before it was rubbed off.\*

Clouded ceilings

\*Fig. 149

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Ceilings painted to look like a sky with clouds were extremely popular during the late eighteenth and early nineteenth centuries. Although Whittock described the disposition of colour to be adopted on an example\* intended for a concert room,\* it does seem that a 'trick of the trade' was often practised, since Vanherman, the only writer encountered to give more specific technical directions, remarked that one should use red orpiment and blue verditer for the 'shade tint', adding that these 'mixed either separately or together with whiting, constitute the whole of this process, which has been and is still accounted a great secret'.\* It is of some interest to note, therefore, that Watin observed that cendre bleue was much used in distemper, especially for painting skies in the theatre, thus providing a measure of confirmation for Vanherman's account of the technique.\*

## CHAPTER III

### COLOUR MIXTURES AND NAMES

#### Colour mixing in general

To complete this survey of house-painting from a technological point of view, attention may finally be turned to the preparation of coloured paints, and thence to the large number of names by which the various shades and tints of the hues in use were known. In doing so, one point must first be emphasised: in contrast to fine-art technique of the period, very little use was made of transparent glazes except in graining and marbling or in specialised decorative work such as arabesque. Instead, as will be appreciated from Chapter II, house-paints were generally opaque in character; and, unless solely containing coloured pigment in order to provide a particularly intense or dark colour, were made starting from a base of opaque white. The terminology adopted in the first sentence of this paragraph reflects this, hue being defined as the part of the spectrum to which any given colour belongs, tints being achieved by the mixture of the coloured pigment with white, and shades being produced by the addition of black or a complementary colour. The inherent nature of these definitions provides a method of considering colour which is immediately related to the practical means of its production, and may be contrasted with those used in modern methods of colour notation such as those of Munsell, with its more abstract hue, chroma, and value, or with the C.I.E. system with its completely impersonal Y, y, and x axes. This is not to say, of course, that the latter are not of considerable importance today in the recording of early colour, but simply that they are less helpful in understanding its use during the period covered by the present study.

An important implication of the almost universal practice of using coloured pigments to tint a white base is the distinction which must be made between pigment names and colour names. Hence, 'Prussian blue' is the name of a pigment which may be mixed with white to produce a whole range of blues to which names such as sky blue or Royal blue might be applied; and it is with the latter, subjective

names which were employed to describe paint colours that this chapter is concerned, rather than the pigments, or means of their production, discussed in Chapter I. The distinction between the two requires considerable emphasis, especially since in a number of instances pigment names have come to be applied to paint colours, a circumstance which may be confusing to the non-technical and obscure the clarity with which they must be separated. Thus today the expression 'Prussian blue' may also be used to describe a dark blue colour reflecting that of the pigment in dry powder form, and even during the period being considered subjective names such as umber colour or verditer green were used in the same way to describe colours rather than pigments. The use of such terms does not, however, imply that the pigment lending its name to the paint colour was necessarily used in its mixing; and, for example, Tingry and the author of The Painter's... Pocket Manual suggested a method for matching the colour of green verditer in distemper by the use of verdigris in oil.\* For this reason it will be noted that in Chapter I, with the particular intention of helping to avoid any confusion, pigments have been referred to as such, rather than by the frequently adopted alternative term 'colours'; and in the general text forming the remainder of the present chapter colour names will be constantly underlined. A particular instance in which this is of extreme importance is, of course, 'pink', a term used during the eighteenth century for a class of organic lake pigments many of which were yellow in hue, but at the same time the word was often used in painting accounts in its present-day sense of pink, a light tint of red.

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At the beginning of Chapter I, the imperfect nature of the pigments available to the eighteenth-century house-painter was mentioned, and a number of the major constraints this imposed both on him and, by extension, on architectural design enumerated. The serious impact of these will be clearly apparent from the detailed descriptions of the individual pigments which followed, and it will immediately be appreciated that even by the end of the period covered by this study there were still very great deficiencies in the

range of paint colours available. At the beginning of the eighteenth century, prior to the invention of Prussian blue, and the later introduction of such new pigments as Naples and patent yellows, Scheele's green, chrome yellow, emerald green, or French ultramarine, these were inevitably greater. In order to illustrate the point, a parallel instance drawn from another technology may be cited. In the early eighteenth century, for example, it would have been virtually impossible to produce a clear light pink in ceramics, but, as a result of technical developments which had taken place by the 1740s, famille verte Chinese porcelain, with its limited range of dull, copper-coloured reds, was supplemented by the famille rose in which that colour was pre-eminent. There is, moreover, an important corollary to this, since on that account before this date no ceramic artist could have produced a design to match pink paintwork, however much he may have wished to do so; and conversely, during the eighteenth century there were many colours available in ceramics, or for that matter in fabrics, which fell outside the range available to the house-painter. Thus, each material used in interior decoration had its own range of colours, and, although there was some overlap, these could not always be transposed from one to the other. To make use of the colour of an eighteenth-century silk brocade for wallpaper, or 'Wedgwood blue' for paint is therefore a most unsafe way of attempting to restore an eighteenth-century interior.

Even within the sphere of house-painting itself, however, the range of colours available was not always of universal application since each of the pigments in use had a character of its own. Most importantly, some pigments were suitable for use in one of the mediums employed, oil, distemper, or varnish, but not always in another; and, since each medium was more appropriate for certain parts of a room than others the range of colour which might be applied to the different elements was restricted. Oil, of course, was of universal application, but distemper was rarely applied to timberwork, and in eighteenth-century England varnish was generally used only on furniture. Thus, although patent yellow (sample 89), for example, provided



an important step forward in those areas of painting where a varnish medium was used, and after its introduction in the 1770s was no doubt seen daily on shiny coach bodies, the pigment discoloured rapidly in oil and distemper and is unlikely to have been greatly used in interior decoration when a flat finish was required. Furthermore, prior to the introduction of chrome yellow (sample 91) in the 1820s, to obtain a bright yellow in oil capable of even application over large areas without resorting to the unpleasant pigment King's yellow (sample 87) was attended with serious difficulty, although this was easy in distemper (sample 84). Hence, whilst large areas of yellow may be found on coachwork and in eighteenth-century rooms on wide expanses of plaster wall, it would be exceptional to find a bright yellow door, for which an oil medium was required, unless its owner was prepared to accept a glossy varnished finish. Limited areas of bright yellow glaze (samples 83, 90) could, however, have been used in oil on small decorative elements, such as arabesque or in the picking out of mouldings or enrichments.

For these reasons, certain colours came naturally to be restricted in their use to furniture, plastered surfaces, or decorative picking out. This position is illustrated with respect to distemper by the range of proprietary 'WATER COLOURS' sold by Pincot during the early nineteenth century, which included French green, green verditer, blue verditer, golden yellow, Dutch pink, and English pink, a series, it will immediately be realised, containing several colours which took their names from pigments appropriate to an aqueous medium.\* Nevertheless, having stressed the general point, there did exist a certain degree of overlap between many of the colours available in different mediums; and Pincot's range, for example, contained also French grey, whilst Nicholson gave directions for mixing straw colour, fine and inferior greys, pea greens, and fawn in distemper, all of which could be prepared successfully in oil.\*

Another, related, instance of the way in which the character of a pigment acted to constrain the way in which colour could be used must also be mentioned. During the

seventeenth century, smalt (sample 17) was used to provide brilliant blue grounds or highlights on comparatively small areas, but had to be applied by the special technique of strewing described in Chapter I and could not, therefore, have been applied evenly on large expanses of wall. For these, azurite or blue verditer would therefore have been employed, generally in distemper; but the colours the latter pigments provided (samples 15-16, 155-7) were very different in hue from that of smalt. It may thus be seen that, in contrast with today, by no means all of the already limited range of paint colours available could be used with equal facility on all parts of an interior, and the nature of the pigments provided a strict discipline to which the architect had, perforce, to submit. It was this, perhaps, which Sir Roger Pratt had in mind when he remarked of blues, greens, and yellows, 'naught which works in the panels etc.' \*

\*4

A further vital aspect of the framework for the use of colour imposed by the pigments in use resulted from their relative stabilities when exposed to daylight. The organic reds and yellows were particularly fugitive, but were more or less essential in the production of bright clean colours, and the prudent would have reserved their use for rooms not exposed to the sun or those which, being used only occasionally, were kept shut up for most of the time. Common corridor walls are therefore unlikely to have been painted very often in bright yellow or delicate pink; and in an analogous way John Rutter expressed surprise at the hanging of a room with windows to the south and west at Fonthill Abbey, Wiltshire, in yellow fabric on account of the amount of light to which it was thus exposed.\*

\*5

Intimately bound up with the question of physical practicality was the matter of cost. Even to the artist working on a limited area of canvas, the cost of a pigment such as ultramarine at several pounds per ounce was significant, but to the house-painter it virtually precluded its use. So large, moreover, were the areas with which he was concerned that cost differences between much cheaper pigments were of considerable significance, and the effect of

this may be seen in the earliest price-list for ready-mixed tints so far encountered, that of Alexander Emerton which was published in 1734:\*

\*6

<u>Pearl colour</u>	)	
<u>Lead colour</u>	)	
<u>Cream colour</u>	)	4d. and 5d. per pound
<u>Stone colour</u>	)	
<u>Wainscot or oak colour</u>	)	
<u>Chocolate colour</u>	)	
<u>Mahogany colour</u>	)	6d. per pound
<u>Cedar colour</u>	)	
<u>Walnut tree colour</u>	)	
<u>Gold colour</u>		8d. per pound
<u>Olive colour</u>	)	
<u>Pea colour</u>	)	8d. to 1s. per pound
<u>Fine sky blue mixed with Prussian blue</u>	)	
<u>Orange colour</u>	)	
<u>Lemon colour</u>	)	
<u>Straw colour</u>	)	1s. per pound
<u>Pink colour</u>	)	
<u>Blossom colour</u>	)	
<u>Fine deep green</u>		2s. 6d. per pound.

The extremes of price resulting from the cost and proportion of the staining pigments may appear surprising in the present day when it is possible to buy (if not to manufacture) an extremely wide range of paint colours at a uniform rate. Naturally this had a considerable impact on their use in interiors, the cheapest being used where expensive colours were unnecessary, whilst the latter had the capacity to imply wealth and status when used in important rooms or apartments. Undoubtedly the greatest use was made of colours from the most economical end of the scale, both in interiors and especially for exterior work; and lightfast varieties of these inevitably made up the everyday background against which the finer, more expensive, but often more fragile and fugitive colours were set, like an inlay of costly marble in a freestone monument. They were known, appropriately, as common colours, defined in late eighteenth-century editions of the Builders Price-Book as including all those listed by Emerton in his cheapest category together with chocolate, and, presumably, by extension the remainder of those in his second price

\*7 bracket.\* Such dull but stable browns, greys, and off-whites thus formed, together with white, the backbone of 'vernacular' colour, used ubiquitously on exteriors, discussion of which falls outside the scope of the present study. Nevertheless, it is important to recognise the fact as highlighting the contrast between the exterior elevations of town houses, the rustic landscape, and the interiors of humble dwellings, and the fine rooms of a richly appointed aristocratic house. In dealing with the painting of exterior work, the seventeenth-century writer John Smith, for example, mentioned the use of stone colour,  
\*8 timber colour, lead colour and Spanish brown;\* whilst in the early nineteenth century Pincot and Vanherman too mentioned similar colours in an exterior context, together  
\*9 with olive green.\* This is not to say, of course, that certain expensive colours were not also used externally on occasion, especially in connection with prestigious buildings on which, most importantly, blue ironwork was seen for a long period as a mark of status. A number of seventeenth- and eighteenth-century examples are described in Chapter VII below, although for various aesthetic reasons the fashion later gave way to a preference for the generally cheaper olive green already mentioned.

Both blue, made either from smalt or Prussian blue, and olive green, made from yellow ochre and black or Prussian blue (together with the greens discussed below made from verdigris or copper carbonate pigments and used in French gardens) were, of course, reasonably stable in eighteenth-century terms for exterior use, and could thus be employed in this situation; but the same did not apply to the majority of the other expensive colours available to the house-painter. Turning to these and considering their cost in more detail it is worth noting that in early nineteenth-century editions of the Builders Price-Book greys (i.e. the finer varieties), blues, and greens were described as 'rich colours', whilst Pincot ranged French grey, olive green, and buffs together in a middle category, including verdigrease green, vermilion, dark blue, and purples with 'very extravagant colours'; and Skyring mentioned French green, deep blue, and scarlet as 'superior

\*10 colours'.\* All three authors, together with John Phillips  
and Laxton, gave lists of the prices applicable to such  
special colours, ranging up to an extra 9d. per square yard  
\*11 over the cost of common colours;\* but the suggestions they  
made at a time of ever-changing monetary values were not  
entirely consistent, and it has proved impossible to reduce  
their rates to a simple table. Quite probably, in fact,  
every painter would strike his own bargain for such work,  
but in general, taking the examples given by the authors  
mentioned above, it can be seen that prices increased de-  
pending on the cost and proportion of the staining pigments  
required. This may be generally summarised in ascending  
order as follows:

- i. Colours in which the moderately priced staining pigments, such as the better quality ochres, were used, or tints in which only small quantities of those more expensive, such as Prussian blue or the more moderately priced red lakes, were needed. Examples would include olive green, buffs, drabs, fawn, warm tints, and French grey.
- ii. Deeper colours, such as light greens, lilac, and peach colour, needing a greater addition of the more expensive pigments, in particular the lakes, Prussian blue, or vermilion.
- iii. The most saturated colours of all, needing very large proportions of expensive pigment or the use of extremely costly varieties such as distilled verdigris or the higher grade lakes. These would have included verdi-gris greens, dark blue, purple, patent greens, and scarlet.

The colours mentioned above (all of which (q.v.) were cited as examples illustrating different costs in the early nineteenth-century lists of Pincot, Laxton and Skyring) do not, of course, exhaust the range available, and were simply instanced by these authors in order to convey the broad principles which lay behind pricing to those who, through familiarity with the implications of general practice, would

have an immediate grasp of their significance. The tradition is lost today, when this aspect of cost has ceased to be a factor in the design of a colour scheme, but throughout the period under consideration it was undoubtedly of major importance.

This broad outline of the constraints imposed by cost and the materials used for house-painting themselves may seem complex and difficult to grasp in an age accustomed to open a paint tin and apply the colour where fancy dictates. Above and beyond the underlying principles already formulated, however, there were further factors at work. Some pigments were incompatible with each other and could not be combined, so that King's yellow, for example, could not be used with white lead, nor Prussian blue with lime. These and the other factors discussed could, moreover, often be much more subtle, and in some instances pigments would lie on the borderline of suitability in any given situation. In some cases, therefore, slight imperfections in the properties of the paint would be tolerated; whilst for other applications the same pigment combination would have proved quite inadequate. In other cases great skill was required in choosing between different varieties of the same pigment; and between the red ochres, for example, lie great differences when they are used for tinting, samples which look identical in powder or paste form producing quite different effects when mixed with white. It is impossible to set down such subtleties in concisely tabulated form, but an assessment of the individual properties of each pigment has been made in Chapter I; and a true knowledge of eighteenth-century colour mixing practice can only be gained by first-hand familiarity with the pigments and mediums in use, coupled with practical experience and a slowly acquired working knowledge of the idiosyncrasies of each.

Altogether, therefore, exploitation of the often minutely graded limitations of the materials available to the house-painter with their different strengths and weaknesses resulted in a system of colour mixing in which certain tried and tested combinations played a prominent part,

\*12

whilst others were used in particular circumstances where a particular effect was required. Quite apart from other, quite artificial constraints on the choice of colour (such as that imposed on the plasterers, who often decorated plaster walls and ceilings, by the 1603 Act, which allowed them to use nothing except 'Whiting, Blacking, Red-lead, Red-oker, Yellow-oker, and Russet, mingled with Size only, and not with Oil')\* eighteenth-century colour mixing was above all not simply a question of mixing green, for example, by taking the first blue and yellow pigments to hand, but an art which required application, experience, and an eye to economy if success was to be achieved.

Before turning to review in more detail the methods advocated for the mixing of individual colours, a few general points must be made about the methods by which the colour charts illustrating them have been produced and the way in which they should be approached. The individual samples were prepared using a base of white lead in oil or chalk in size, made up to typical eighteenth-century formulae. As will be recalled from Chapter II, however, the degree of gloss with which oil paint dried could be adjusted within quite wide limits, and the present samples should not be taken as representing an absolute standard in this respect. Linseed oil was used in diluting the oil-based colours wherever possible, but in the case of those samples where its discolouration on storage would affect the hue, poppy oil was substituted. In the charts the two are distinguished by the suffix L.O. or P.O. as appropriate, whilst distemper samples are identified by the letter D. Where it was felt they were reasonably close in character to their historic counterparts, modern, commercially available pigments were used; but in the case of some obsolete pigments it was necessary to prepare samples specially, using early formulae. Full details of this and the precise way in which the samples were prepared is given in Appendix A.

In looking at the samples it is important to appreciate that the advice given on colour mixing in those books

forming the basis of the present study was generally couched in very broad terms. Only rarely were quantified formulae given, but even where this was the case it is vital to recognise that it is not possible to reproduce a 'colour' exactly. Different samples of white lead or chalk varied enormously in their whiteness and reducing power, and coloured pigments in their brilliancy of hue, tinting power, and even colour itself, so that even such apparently definitive formulae are of less absolute help than might at first be supposed. More often, in fact, directions for mixing would merely give the names of the pigments to be combined, or at best would indicate only in principle the quantities to be employed. Thus, for example, Vanherman suggested that French grey should be prepared by adding Prussian blue to white until a sufficient depth of colour was achieved, followed by as much organic red 'as will bestow on it a faint bloom' (cf. samples 28-36).\*

\*13

This state of affairs reflects, moreover, the essential nature of the eighteenth-century approach to colour and its mixing. In an age without universally laid down national standards, colours were inevitably conceptual in nature, and thus the various colour names listed below never represented exact tints or shades. The Edinburgh house-painter D.R. Hay, for example, remarked of pomona green that it took its name from the colour of an apple, 'and consequently admits of ample latitude as to variety of tone'.\* There was, therefore, neither a definitive pomona green nor French grey, but the terms were understood between architect and house-painter as implying an area of colour which the latter could mix, often within quite wide limits, to meet the particular circumstances in which it was required. At a time in which on-site mixing was the norm, account could thus be taken of the subjective colour shift present when such a colour as French grey was seen against red damask, for example, and more red added to the paint to compensate for this; whilst if the damask was blue, less red would be required to give the desired 'bloom'; and a parallel situation prevailed with other colours. Accordingly, the colours contained in the charts below

\*14



must be recognised as being only isolated examples within an infinitesimally graded range of possibilities; and, even where a series of samples illustrating the effect of using tinting pigments in a particular combination have been arranged in a group so as to indicate the breadth of effect to which a single colour name might have been applied, the samples provide only a few arbitrary points on the scale. It must also be borne in mind that the samples have been designed to convey the character of a particular combination on a small area, and in practice far paler tints than many of those illustrated may well have been used. This was particularly the case on large areas of ceiling or wall, and the examples given should not be regarded as if they were a colour range in the modern sense for literal copying and reproduction on site. Above all they should not be taken as absolutes for use in restoration work, for which on-site experiment and adjustment within the entire range available is vital. This is also necessary, of course, since different samples of pigment, in this case Prussian blue and an organic red, can vary quite widely in hue, so that rather than necessarily lying even on the simple 'two dimensional' chart provided, French greys might partake of a more purplish or orange 'bloom' than those samples illustrated.

Finally, although so far as can be seen on the evidence to hand all the commonly advocated mixtures are represented, it must be stressed that the combinations shown on the charts are not exhaustive and have simply been selected to illustrate common mixes suggested in the contemporary texts which have formed the basis of study. It is quite likely that others were used either regularly or on an experimental basis, and in addition many of those shown would not only be diluted further with white, but could also be shaded with black as circumstances required. It must be emphasised again, therefore, that the examples given are intended to illustrate the general characteristics of the pigments in use and the nature of the effects possible within the limitations of paint technology, rather than to be an exhaustive catalogue of definitive examples which have to be copied literally in redecoration

work. With this in mind, attention may now be turned to the common ways in which pigments were combined to prepare house-painting colours.

## Whites

The use of white in interiors was of profound importance throughout the period being considered. During the second half of the sixteenth century, William Harrison had commented on the 'delectable whitenesse' of plaster ceilings, a preference shared in the mid-seventeenth by Pratt;\* whilst, as will be shown in Part Two, by the second half of the eighteenth white had come to form the essential foundation for the use of colour in all parts of the interior. Although the white pigments available, most importantly chalk and white lead, were rather duller in tone than titanium white, which forms the basis of many paints today (cf. samples 1, 3, 4), the great defect of early whites was not so much the difficulty of obtaining a modern brilliance, but their tendency to yellow; especially in oil (cf. samples 3 and 5). Indeed, regarding distemper, only one author, Tingry's later editor, referred directly to a dullness of tone; and even then he merely observed in passing that whitening produced a duller colour than lime without suggesting this was any disadvantage (cf. samples 1 and 2).\*

Instead, writers from Watin onwards were significantly unanimous in condemning too great a brilliance in whites, so that Pincot, for example, recommended the addition of a little black to oil paint for interior work, observing that it 'takes off the rawness of the white', and the addition of a little blue black to distemper in order to make it 'cover better, and look sound'.\* Thus, dullness of tone, far from being a technical limitation, seems to have been considered advantageous, at least during the latter part of the period under review; but it is important to distinguish this from the tendency of white paint to yellowish discolouration, which could also be ameliorated by the addition of black and sometimes blue.

In recommending the addition of a little vine black, Vanherman remarked revealingly that white,

'by itself, has been of late years universally disused, for two principal reasons - first, its staring, glaring colour; second, its fugitive quality'.\*

\*18

To some extent his remark undoubtedly reflects the nineteenth-century preference, discussed in Chapter VIII, to avoid the use of white altogether; but the second objection he raised must surely refer to the tendency of an oil medium to yellow in interior conditions. At the beginning of the eighteenth century, as described in Chapter I above, walnut oil was sometimes used to minimise this, whilst 'whitening' in which no medium was present was often used on ceilings; but Watin, in remarking the tendency to yellow in whites, recommended the addition of a little blue or charcoal black to give the paint life, advice repeated twice by Nicholson who suggested the use of lamp black, ivory black, or blue black.\* In flatting, Pincot advocated 'a little tint of Prussian Blue', and Butcher recommended the addition of black or Prussian blue 'to clear the white';\* whilst Tingry remarked that white was usually 'heightened' with blue, and his later editor noted this was often done with Prussian blue in smoky towns such as London.\* At first, the common use of black rather than blue may seem surprising, but experiment (cf. samples 5, 6, and 7) has shown that it is sound, especially where large areas are concerned, and the phenomenon was no doubt responsible for the emphasis placed by many authors on the bluish qualities of charcoal blacks (cf. samples 8, 9, and 10).

\*19

\*20

\*21

Another option occasionally exercised in the case of distemper was the use of a better quality of size. Dossie, it will be remembered, suggested such a procedure;\* and Chambers recommended that the cove in the Saloon of the Casino at Marino, Dublin should be 'done with Izing glass & flake white' so that it would be more brilliant in colour than the dead white oil paint on the lower parts of the architecture.\* His suggestion is valuable, not only in showing that Dossie's advice was sufficiently practical to be put into effect when occasion demanded, but also that, even in an important interior such as that of the Casino,

\*22

\*23

finishes of this nature were reserved for special aesthetic purposes. The flatted oil finish on the majority of the paintwork in the Saloon, had itself, it has been suggested in Chapter II above, advantages in reducing any tendency to yellow; and there can be little doubt that for most purposes the whites obtainable by common means were generally acceptable for house-painting. Thus, unlike the majority of designers today, the eighteenth-century architect started, not with the most brilliant highlight in the room, but with a more subtle tone which could be darkened, tinted, or (occasionally) lightened as the composition demanded. This is not, of course, to imply that extended gradations of white were ever employed in the way popularised by some modern interior decorators, but simply that the potential to add simple emphasis to one major element of the architecture was there to be exploited if required. Further discussion of this lies outside the scope of the present chapter, but it must be emphasised that, apart from the suggestion made by Chambers to Charlemont, no direct evidence that use was made of this device has been encountered in the course of study to date, and the point remains otherwise speculative.

## Greys

Although exceptions, such as the suggestion made by Reynolds for mixing pearl colour (q.v.) by the combination of white with Prussian blue and yellow ochre, may be found, the formulae given for greys by the various authors noted fall generally into three groups: simple mixtures of white with black, to which blue might also be added; mixtures of blue and white; and mixtures of blue, white, and red. The first is the commonest method described, any of the categories of black listed in the section on black pigments in Chapter I being used, except that lamp black, being rather greasy in nature, was not so well suited to distemper (cf. samples 8, 9, 10, 12). The only oil formulae to include blue with black are those of Watin, who used either Prussian blue (in pearl grey - q.v.) or indigo (in silver grey - q.v.); whilst Tingry, no doubt basing his advice on Watin, suggested a mixture of blue and black could be used in pearl grey (which, he said, was otherwise known as silver grey). The author of The Painter's... Pocket Manual

repeated this, suggesting a combination of indigo and black for the same colours and a dark lead colour. Apart from Watin, who noted his formulae could also be used in distemper, the only author to make a similar suggestion for the latter medium was Nicholson, who proposed the use of indigo with black in inferior greys. All other writers noted suggested only simple mixtures of black and white, although it must be borne in mind that, as pointed out in Chapter I, commercial 'blue black' often contained Prussian blue. Typical tints of this nature using Prussian blue and charcoal black are illustrated (samples 24, 27).

\*24 Only two oil formulae employing blue alone have been encountered, both originating in the early part of the period being considered. John Smith's lead colour (in contrast to later suggestions for its mixing) contained indigo (samples 13, 14), and Bullet's gris perle, smalt. The latter combination (sample 18) has been found in one of the lower layers on a seventeenth-century doorcase now in the Banqueting Hall at Tamworth Castle, Staffordshire, and also formed one of the early finishes applied to the wainscot in the Marble Hall at Petworth, Sussex, which was first painted in 1692.\* At a later period, blue verditer seems to have been used for some greys in distemper, refiner's verditer being mentioned by Nicholson for the preparation of fine greys (sample 157), and verditer of unspecified type, but most probably blue, in connection with French grey by Skyring and another early nineteenth-century writer, A.G. Cook. As will be seen from the entry in the Glossary below, however, the latter were not giving complete mixing directions and may have intended the colour should also contain other pigments.

The most subtle greys were made by the third method described, generally in oil by the combination of white with Prussian blue and a carmine lake (samples 28-36 inclusive). Such mixtures seem absent from the early literature, but were described by Watin, Tingry, Nicholson (who also included ivory black), Butcher, the author of The Painter's... Pocket Manual, and Vanherman; and, although also called simply grey or flaxen grey, were generally known in

this country as French grey. In addition, Nicholson also gave a similar formula for pearl colour, substituting Indian red for the lake; whilst Whittock used Venetian red in a grey distemper. It seems possible too that especially in distemper rose pink was often used in this way.

See entries in the Glossary under: Ash colour; Dove colour; Greys (variously qualified); Iron colour; Lead colour; Pearl Colour; Slate colour; Steel colour; and White, French.

Black

From an early date, intensely black paints could be prepared, often in a varnish medium for application to ironwork; and detailed evidence for their formulation is reviewed in the Glossary below.

Bright purples  
and lilac  
colours

The first formula for a purplish colour in house-painting which has been encountered is that suggested by Watin, who gave directions for the preparation of violet. This and subsequently recommended formulae are virtually unanimous in the use of an organic red lake and (where a particular blue pigment is specified) Prussian blue with white (samples 37-45 inclusive); but the author of The Painter's... Pocket Manual suggested the employment of vermilion or red lead with black or blue for violet colour, and added dark red (presumably a red ochre) to this to make purple. The mixture of lake with Prussian blue is, of course, related to that for French grey discussed above (samples 28-36 inclusive); but obviously the more intense versions were considerably more expensive, and Pincot included purple in his list of 'very extravagant colours', whilst Laxton illustrated the costliness of lilac compared with other colours.

See entries in Glossary below under: Lavender colour; Lilac; Plum; Purple; and Violet.

Bright reds  
and pinks

In the sections dealing with red pigments in Chapter I it has been indicated that, of the durable colours, the iron oxides were generally dull in tone, whilst vermilion

was much more expensive; and red lead, although bright, was thought by some to blacken with age when used in oil (cf. samples 59, 60, 62, 63, 64). The organic pigments (samples 58, 61) were transparent in that medium, and even the very expensive grades were fugitive, the cheaper varieties being extremely so. The problem to be faced in the production of red and pink paint was therefore to reconcile these constraints and achieve a compromise between cost, the desirable brightness of colour, and durability. In general, this seems often to have been effected in oil by means of a mixture of vermilion and carmine lake (samples 46-54), the latter giving life to the otherwise heavy, though bright, red of the former, and the vermilion tempering the purplish tendency of the carmine whilst imparting greater stability to the depth of colour. In this connection the common manufacturing practice of precipitating carmine onto vermilion will be remembered. Against such mixtures the red ochres are very brown in colour, and dull reds containing them will be discussed in due course.

Reynolds mentioned the use of vermilion, red lead, and rose pink for interior reds, but the employment of such colours in European colour schemes seems to have been limited. Watin, for example, remarked of red pigments:

\*25                    'Les Peintres d'impression n'en sont guère usage, que pour les carreaux d'appartemens; l'uniformité d'une teinte rouge ne flatte pas assez la vue.'\*

\*26                    However, Tingry mentioned a varnish coloured red for buffets,\* and many architectural drawings of this period suggest small areas of ceilings or enrichment may have been picked in red, although generally one of the dull reds seems to have been used for this.

\*27                    With regard to the pigments used for red and pink mixtures in distemper, the inclusion of red lead, red ochre, and 'Russet' in the list the plasterers of the City of London were permitted to use in this medium under the 1603 Act, and exclusion of vermilion, is important.\* It is therefore suggested that distemper would not generally

have been used in situations where a bright, full-bodied red was desired; but for pink colours, red ochres or mixtures of red lead and the cheaper organic reds would have sufficed, the latter being employed in a way comparable with the vermilion and carmine lakes used in oil.

Turning to pinks in oil, only John Smith (and, repeating him, the author of The Painter's... Pocket Manual and Nicholson) recommended the use of lake alone with white, here to mix carnation. More general practice throughout the period under consideration was undoubtedly to produce a series of pinks such as apricot, flesh colour, peach, and rose by mixtures of carmine lake (or cheaper varieties), vermilion, and white in varying proportions (samples 46-54 inclusive). Although browner pinks can also be made by mixing red ochre and white (samples 55-7 inclusive), such a mixture being recommended by Nicholson for flesh colour, confirmation that the former was more usual seems to be provided by the price-lists of Emerton and the Builders Price-Book in which blossom colour and pink appear in the more expensive categories of colour.

See entries in the Glossary below under: Apricot; Blossom colour; Carnation; Crimson; Flesh colour; Lake; Peach colour; Peach-blossom colour; Pinks (variously qualified); Puce; Red; Rose; Salmon colour; Scarlet; Vermilion.

Duller reds,  
browns, and  
purples

In considering the bright reds and pinks in the last few paragraphs, reference was made to the duller brownish red of the ochres (see samples 62, 63, 64). The commonest of those in use was Spanish brown, whose name, like that of purple brown and other ochres came also to be applied as a paint colour. Often, however, the more expensive grades, such as Venetian red, were used in interiors where their qualities in producing a more delicate and subtle colour were important. Vanherman, for example, used the latter in a red he recommended for picture galleries, noting that used with white and a little black it would produce a dark blotting-paper colour (samples 65-7); and such combinations of ochre with black were common.



Alternatively the colour of red ochres could be heightened, Reynolds, for example, adding a proportion of red lead in a formula for an exterior red; and, as already mentioned, the author of The Painter's... Pocket Manual used red ochre with more expensive reds in a mixture for purple. In making dark browns such as chocolate, rather than use umber which was more expensive, red ochre would generally be combined with larger quantities of black, often without the use of white (samples 68-70, 71-3). For lighter tones such as chestnut, yellow ochre might also be added, instances noted in the Glossary below including both chestnut and walnut colour (see samples 74-82).

See entries in Glossary below under: Browns (variously qualified); Cedar colour; Chestnut; Chocolate colour; Cinnamon colour; Claret colour; Hazel nut; Liver colour; Mahogany colour; Oak colour; Pompadour; Princes-wood colour; Purple brown; Red; Timber colour; Umber colour; Walnut colour; and Wood colour.

## Yellows

The various strengths and weaknesses of the yellow pigments available have been reviewed in Chapter I. Yellow ochre used by itself with white was rather dull in tone (sample 85), but Tingry noted its employment for yellows, and both John Smith and Reynolds suggested it should be combined with white to make straw colour, although the latter author certainly had an exterior context in mind and it seems likely that for interior purposes a brighter colour than could be produced by this means was often prepared. For such purposes, the cheaper varieties of organic yellow assumed the greatest importance, but, although capable of use in an oil glaze to provide small areas of yellow on decorative motifs, could not be applied evenly over large spaces by this means and had to be used in distemper (samples 83, 84, 90). Thus Watin suggested their employment in the latter way to mix jonquille and citron (lemon), the first recommendation being repeated by Tingry and the author of The Painter's... Pocket Manual; whilst Butcher noted its use for fine yellows and Nicholson for straw coloured distemper.

\*28

Organic yellows were, however, extremely fugitive; but the alternative inorganic pigments each had other disadvantages. Although Watin suggested the use of orpiment in combination with realgar (samples 87, 92) for citron, a formula copied by Tingry and the author of The Painter's... Pocket Manual for lemon, the second of these writers noted that the combination was obsolete, and, it will be remembered, Vanherman warned against the use of king's yellow in the strongest possible terms. This suggests, of course, that these unpleasant pigments had been in use earlier; but examples have proved elusive, and it is possible their employment was often confined to small motifs. The other alternative available during the late seventeenth century was, of course, massicot; but the question of its later nature and uncertainty surrounding its use have been discussed in Chapter I, and Nicholson's proposal for its employment in straw coloured distemper seems exceptional. Lack of suggestions for its employment in house-painting by earlier writers, in particular John Smith (who illustrated its practical use only in connection with colouring prints),\* indicate that Nicholson may be misleading, especially if by the 1820s as seems likely the name was being applied to canary litharge (sample 86) which was of pale colour and had a marked tendency to blacken.

With the introduction of Naples and patent yellows in the 1770s the position was only partially ameliorated, since the former was again dull in tone and the latter discoloured rapidly in oil and distemper. Nevertheless, Watin used Naples yellow (sample 88) in citron, and Tingry mentioned its use in yellows amongst which gold colour was a particular example. There seems, however, to have been a tendency to strengthen its colour by the addition of other pigments. For couleur d'or Watin combined it with yellow ochre, and the author of The Painter's... Pocket Manual used it with realgar in gold colour; whilst the latter, no doubt copying Tingry, combined it with organic yellow in lemon distemper, although this may have reflected more of an attempt to add the stability of Naples yellow to the fugitive pink.

\*29

Patent yellow (sample 89), on the other hand, was also recommended by Tingry for yellows including gold colour. He was, however, greatly concerned with varnish paints and may not have intended the pigment to have been used in oil or distemper unless varnished in the way suggested by Vanherman.\* Nevertheless, Butcher recommended it for fine yellows, and, as will be seen from the entry in the glossary below, its name occurs applied to house-painting colours in several late eighteenth- and early nineteenth-century sources. Butcher, however, is not always a sound authority, and use of the pigment name to describe a colour, as already pointed out, does not necessarily imply it was used in its preparation, so that here it seems more likely patent yellow was not of great service in the mixing of yellow house-paint.

Apart from the combinations already mentioned of one yellow with another, and that which seems to have been made by Tingry for the use of realgar to give an orange tone to yellow ochre in mixing gold colour (a suggestion copied by the author of The Painter's... Pocket Manual with respect to the same colour, in which he substituted Naples and, perhaps misleadingly, massicot for the ochre), the overwhelming majority of formulae for mixing yellow made use only of a single yellow pigment with or without white. In general, therefore, it seems to have been recognised that, in contrast to the combination of vermilion with an organic red mentioned above, no amount of mixing could overcome the unsatisfactory nature of the yellow pigments available; and it was only in the 1820s, at the very end of the period being considered, when chrome yellow (sample 91) became cheap enough for house-painting that the problem of yellow paint was really solved. Vanherman was then able to recommend this pigment for mixing straw colour; but until then painters had only been able to accept the difficulty, and of all the colours-yellow undoubtedly illustrates best the way in which design was constrained by the materials at the disposal of the painter.

See entries in Glossary below under: Brimstone colour; Gold colour; Jonquil; Lemon colour; Pink, Dutch; Pink,

English; Straw colour; Yellows (variously qualified).

## Oranges

The basic method for mixing orange colours seems to have been by combining red lead and yellow ochre, with or without white (samples 96-104 inclusive). John Smith used this method for both orange and brick colour, a suggestion copied by the author of The Painter's... Pocket Manual and used too by Reynolds for exterior work. Exceptionally, Vanherman suggested the use of vermilion with ochre in his orange 'aromatic' paint for interiors. A mixture of red and yellow ochres does not seem to have been mentioned, and produces by comparison a rather brownish tone (samples 93-5); but there seems little reason why this should not have been employed, at least in distemper for external work where it might have been desired to reproduce the typical colouring of many Italian buildings.

Tingry alone proposed the use of orpiment, suggesting it should be slightly calcined to make marigold; but no author noted suggests another possible alternative, the combination of an organic yellow with one of the reds. After the introduction of chrome yellow, however, Vanherman suggested this newly popularised pigment could be mixed with an organic red to make brilliant orange; but it seems likely this combination would soon have been superseded in oil by the use of chrome orange.

See entries in Glossary below under: Brick colour; Marigold; and Orange.

## Off-whites

Little need be said here concerning the pale off-white colours, which undoubtedly formed, as today, the backbone of the decorator's trade; although, from the infinite subtlety of its composition, this group more than any other is the most difficult to illustrate. For making buffs, creams, drabs, fawns, quaker tints, and stone colours the earth pigments and black rank above all others in importance, although for particularly clean tints others, such as the organic yellows, might, perhaps, have been pressed into service. To anybody who has attempted the mixing of such colours to tone in with their more assertive neigh-

bours in a colour scheme, the part which is played by almost subliminal alterations in pale tints to be spread over a large area will be well known. Undeniably the major weakness of any commercial ready-mixed series of colours lies in this area, and especially here the majority can but envy the eighteenth-century architect and craftsman in his ability to adjust the colour on site to that precisely required for his purpose. It will be apparent from their very nature that there is a considerable overlap between the colours represented by the different names applied to them, some of which merge with the paler browns and yellows, or tend to a pinkish or greenish tint; and it is almost impossible to classify each as belonging to other than the general group. All in all, the colours illustrated (samples 105-9, 116-127) are only a starting point, and represent merely a basic indication of the tints available.

See entries in Glossary below under: Buff, Cream colour; Drab; Fawn; Quaker tints; and Stone colours (variously qualified).

#### Greens

Undoubtedly a good green was highly prized during the eighteenth century, but really bright greens were extremely difficult to produce on large areas except by the use of verditer in distemper, which was unsatisfactory on joinery. Although verdigris would provide a reasonable effect in oil, especially when combined with a little yellow to remove its bluish cast, it was unstable and tended to discolour; whilst terre verte and the copper carbonate pigments were unsatisfactory in this medium. Nor were mixtures of blue and yellow pigments always a good solution, since even after the problem of a suitable blue had been overcome by the introduction of Prussian blue during the first quarter of the eighteenth century there still remained the problem of a bright, stable yellow with which to combine it, a matter only resolved by the use of chrome yellow during the 1820s.

At the end of the seventeenth century, John Smith, writing in connection with oil paint, dismissed green bice (malachite - samples 149-151) and verditer as seldom used; and although he did mention that a mixture of blue verditer with yellow made a good green, the only practical application he gave for it was in connection with the colouring of prints. Such a combination is missing from his suggested list of 'Colours that arise from mixture' for use in house-painting. The best and most useful pigment was, he indicated, verdigris, which was, he said,

\*30

'a delicate Green inclining to a Bluish, but with a little Pink-Yellow, it makes the delicatest Grass-Green in the World'.\*

\*31

His greens for house-painting were willow green, which was pure verdigris (a light variety was made with the addition of white lead), and grass green, which included the organic yellow pigment, pink (samples 128-136 inclusive). These formulae were copied by the author of the Painter's... Pocket Manual, but other, more independent writers throughout the period being considered mentioned the use of verdigris; and as late as 1830 Tingry's editor remarked that it was used for green of the finest kind.\* Its expense has been mentioned in Chapter I, and the price of Emerton's fine deep green, which may have contained verdigris, will be remembered. Distilled verdigris may also be dissolved in oil to produce a transparent green copper resinate and could be employed in this way as a glaze (sample 146) or mixed with white lead to produce a paler green paint (samples 147, 148), which seems to have been used on furniture if not on large areas of wall; but, as will be remembered from Chapter I, the colour was difficult to control, and this would always have made the execution of colour schemes in which a delicate balance was needed a matter of some difficulty.

Apart from John Smith (together with Nicholson and the author of the Painter's... Pocket Manual, both of whom copied from his book) no English author encountered suggested the use of yellow with verdigris; but Reynolds com-

bined it with yellow ochre to make sea green oil paint for interiors and parrot green for exterior purposes; whilst, again in oil, Watin and Tingry suggested its mixture with yellow ochre and a little black to make olive; and the author of the Painter's... Pocket Manual provided a related formula for the same colour using organic yellow. Watin too suggested the combination of verdigris with organic yellow and Prussian blue to make vert-pomme and vert-Saxe, whilst Bullet used it with 'vert de montagne' and ceruse to make the green oil paint for garden furniture described under Green, garden in the glossary below. Undoubtedly, therefore, verdigris was of prime importance for the manufacture of bright greens in oil from early times, and its colour was often modified by the use of yellow and blue pigments.

John Smith's rejection of malachite and verditers in oil has already been mentioned, and although best green verditer is included in the list of prices for oil colours in the Builders Price-Book it will be remembered that Tingry and the author of the Painter's... Pocket Manual showed that its colour would be obtained by the use of verdigris rather than verditer. The only author encountered to mention the use of copper carbonate in oil is D'Aviler, who employed 'vert de montagne' in his finishing coat for garden furniture, but this seems to have been a specialised application which other evidence suggests became obsolete within a very short time. In distemper, however, verditers and related copper carbonate pigments (samples 152-4, 161) undoubtedly enjoyed considerable use throughout the period under review. Watin combined 'vert de montagne' and ceruse in vert d'eau, and Laxton listed pea green distemper 'with verditter'. Nicholson too mentioned 'pea green in distemper with French green', the latter being a copper carbonate pigment produced by Lewis Berger; whilst Pincot retailed French green and green verditer 'WATER COLOURS'. Combinations of blue verditer and organic yellow to make green distemper (samples 158-60) were recommended by Watin, who remarked that vert d'eau made in this way had more life than that made from pure 'vert de montagne', and was less likely to change colour with time. He also suggested the use of organic yellow

with Prussian blue in preparing vert de composition (compound green) which could be used in distemper, whilst to make olive green distemper both he and Tingry advocated the combination of yellow ochre with indigo.

\*32 Turning to the mixture of blue and yellow pigments available during the seventeenth century for use in oil, the employment of indigo with a yellow for house-painting was only mentioned by Tingry, who used it in a turpentine varnish medium with an organic yellow in one of his compound greens for rooms; although John Smith had suggested a similar combination to produce a French green for colouring mezzotints. Another possible combination, suggested only by a single author, Whittock, was that of blue with king's yellow; but this is likely to have been intended for distemper (in which he later recommended a mixture of verditer, king's yellow, Prussian blue, and whiting should be used to mix a light delicate green).\* Only one other mixture which could have been used successfully in oil for house-painting prior to the introduction of Prussian blue remains to be mentioned, that of yellow ochre with black (samples 137-145). This produced an extremely dull colour, called olive green by D'Aviler and mentioned in connection with drab greens by Vanherman, but seems nevertheless often to have been of some importance during the period being considered.

With the availability of Prussian blue, a new range of greens which did not have to rely on the use of verdigris became possible in both oil and distemper, but were probably more important in the former medium. They may be divided into two categories, the first that in which Prussian blue was combined with yellow and brown earth pigments (samples 162-170, 211-13), and the second that in which it was used with organic yellow (samples 171-9). The latter, brighter, but far less lightfast alternative was mentioned only by Watin and Tingry, the former suggesting it for vert de mer and vert de composition (translated into the English edition of Tingry as sea green and compound green); but it seems questionable how far these would have been used in oil, although Watin noted that the



latter colour could be used in oil or distemper. Both authors, however, seem to have neglected the use of ochre with Prussian blue, but English references to the latter combination are too prolific to mention here individually. They will be found in the glossary below, and, besides drawing especial attention to the entries for Green, inferior green, and olive, it will suffice to note for the present Vanherman's remarks concerning pea (probably a misprint for tea), sage, and drab greens. These were, he indicated, made from spruce ochre and Prussian blue, lowered with white. Raw umber could, he noted, be substituted for the yellow to give further varieties which were chosen 'on account of their repose to the sight, and their solid and quiet tone'.\* They were described by Tingry's later editor as inferior greens, and the combination was probably standard for the majority of applications in oil throughout most of the eighteenth century and the early years of the nineteenth.

\*33

From the 1770s it would have been possible to use Naples yellow or patent yellow with Prussian blue to mix greens, but no concrete evidence for the former combination (samples 180-8) has been encountered; and although the Long Bow Room at Gordon Castle, Morayshire, was painted in Naples green in 1786 this need not necessarily imply the use of Naples yellow. The use of patent yellow with Prussian blue to produce a good green (samples 189-197) was recommended by Butcher and Nicholson, but the results would have been quite unstable except in varnish, and common use of this combination seems uncertain. In addition, at about the same time Scheele's green (samples 198-200) became available, but the difficulties of evaluating the evidence for use of this extremely toxic pigment in both oil and distemper have already been discussed in Chapter I, and it will also be recalled that use of the copper chloride pigments remains enigmatic.

Once chrome yellow became available for house-painting, however, its advantages seem to have been quickly taken up. As will already be clear from Chapter I, Vanherman and Lewis Berger made extensive use of chrome yellow Brunswick

green, and in addition both combined chrome yellow variously with other pigments, including black (e.g. Berger's quaker green), copper carbonate pigments (Berger's Persian green), copper carbonate and Prussian blue (Vanherman's Berlin, olive, and Saxon greens), and with verditer and Scheele's green (Berger's American green). Examples of its combination with Prussian blue are shown below (samples 202-10). The other new pigment, emerald green (sample 201), seems also to have enjoyed application, Berger using it with chrome yellow to make permanent pea green, and adding to this Prussian blue to make aquatic and marine greens; whilst he substituted indigo for the Prussian blue in Chinese green.

See entires in Glossary below under: Greens (variously qualified); and Ice colour.

## Blues

Documentary evidence for the production of blue paint presents a reasonably simple picture for the greater part of the period under review. In distemper, blue verditer (samples 155-7) had been available from the start and seems to have enjoyed considerable use well into the nineteenth century; whilst, as suggested in Chapter I, once Prussian blue (samples 19-21) became available at an economical price for house-painting in the early eighteenth century there is little doubt it achieved such an overwhelming pre-eminence for general purposes in an oil medium as virtually to supersede all other blue pigments. Thus, Emerton retailed fine sky blue made using Prussian blue, and Watin recommended its use with ceruse for bleus tendre, de Roi, celeste and Turc (discussed in the glossary below under blue, royal blue, sky blue and turquoise respectively); whilst its employment for blues in general, together with navy blue, Prussian blue, and sky blue, was variously advocated by Reynolds, Nicholson, and Vanherman. The pigment could also be used in distemper if care was taken to avoid alkalinity, and Watin noted his formulae could be used in both oil and the latter medium; but new plaster was often strongly alkaline and this may have limited its employment. For this reason it seems likely that blue verditer played the dominant role in distemper, and it may be recognised

\*Fig. 26

\*34

in many wallpapers; whilst its typical hue is obvious in Pyne's early nineteenth-century illustration\* of an ante-room at Carlton House which was, he noted, decorated in blue distemper.\* However, direct technical evidence for its use is otherwise lacking, since although Pincot retailed a proprietary 'water colour' which he called blue verditer this cannot necessarily be taken as implying the use of the pigment in its manufacture. Nevertheless, it does seem likely in this case as it would have been difficult to reproduce the colour in any other way. Laxton's reference to blue verditer oil paint, however, seems suspect. The pre-eminence of blue verditer and Prussian blue may well have declined in the years immediately following those embraced by the present study when other blue pigments, most importantly French ultramarine, became available; but their outstanding importance until then is clear.

Prior to the introduction of Prussian blue, however, apart from distemper blues with a greenish cast made from blue verditer or azurite, unlimited areas of this colour would have provided a difficult problem. Indigo (samples 13-14), whilst rather expensive, was undoubtedly used to produce the rather greyish blue discussed above to which John Smith referred as lead colour; but, it will be recalled, he described the pigment as producing,

\*35

'a dark Blue, if workt by it self, to remedy which, whites are usually mixt, and then it makes but a very faint blue'.\*

\*36

It could, of course, also have been used in distemper, but would again have produced a dull colour; and blue verditer would often, no doubt, have been preferred. In oil, John Smith dismissed the latter as unsatisfactory on account of its tendency to turn green, and a second alternative, fine oil smalt, as working only with difficulty.\* Even if this was accepted, the latter pigment had either to be used with white lead, in which case it produced the extremely pale and greyish tint discussed above in connection with greys (sample 18), or had to be strewn (sample 17), something

\*37

impossible on large areas of wall or ceiling. The best of the bright blues used in common work was, Smith indicated, blue bice (azurite - samples 15-16),\* but no direct evidence for its employment in oil on such large expanses during the latter part of the seventeenth century has been encountered. It is, moreover, probably significant that D'Aviler did not mention blue of any kind in association with the colours used on large areas, and remarked only that the blue with which grotesques and ornaments were painted on a white ground was made with indigo, smalt, or

\*38

'cendre bleu'.\* The conclusion to be drawn from the technical literature is, therefore, that during the early part of the period under review large unlimited areas could generally only be painted in oil with the quite costly azurite, or with the same pigment or blue verditer in distemper; or with pale or greyish blues made using indigo or smalt. Frieze grounds or decorative elements could, however, have been picked out in purer and heavier blue colours. With the introduction of Prussian blue, the technical problems were largely overcome, and the use of blue as a general oil colour in house-painting became a satisfactory proposition.

See entires in Glossary below under: Aerial tints; Blues (variously qualified); Cerulean colour; and Turquoise.

Glossary of  
colour names

The Glossary below is designed to record all the colour names encountered in the course of research, and, as far as practicable, to define the nature of the hues, tints, and shades which they represented. In some cases this remains enigmatic, but in others it is possible to obtain a fairly good idea of the colour concept they conveyed, principally through the formulae recorded for their mixing. Sometimes, of course, colours were intended for exterior purposes, and authors did not always make the context in which they were to be employed clear. Examples of their use are therefore also mentioned. Pigment names are only included where used for colours or for a commercial blend.

The Glossary is arranged in alphabetical order, rather than by colour-groups, and where an ordinary name such as

green was frequently qualified, for example as pea green, this will be found under Green, pea. It should also be noted that, especially during the early part of the period under review, a colour such as pearl grey was often known as pearl colour, and for the majority of these the latter mode of expression has been used in the Glossary with a corresponding cross reference (in the instance above, for example, under Grey, pearl). In general, no account has been taken of adjectives such as bright, dark, deep, dull, fair, fine, finest, light, pale, rich, sad, superior, or superfine except where the qualification seems to have had implications for formulation.

Aerial tints

- \*39 In 1819 Pyne described the ceiling of the Lower Vestibule at Carlton House as painted in 'aerial tints', by which, his illustration shows, he meant a clouded ceiling.\* The term seems, on the other hand, also to have been used for ordinary paint colour since Vanherman recommended that in planning the colour scheme for a house, as one advanced
- \*40 higher in the building 'the aerial tint' should be adopted.\* This was, no doubt, an allusion to the aerial perspective of landscape painters, in which the receding planes of a composition are rendered successively more bluish to reproduce the effect of distance; and the term thus seems to have implied a bluish cast.

Amaranthe

- \*41 Rondelet noted that amarante was available with a matt finish in the range of couleurs lucidoniques which had been manufactured in Paris since 1803.\*

Apricot

- \*42 Nicholson suggested apricot (and peach) could be mixed in oil by the combination of lake, Chinese vermilion, and white (samples 46-54).\*

Ash colour

- \*43 John Smith described ash colour as a mixture of white with lamp black (sample 12).\* It could be made darker or
- \*44 lighter as required, and Nicholson copied his formula.\* By the early nineteenth century, however, such a mixture seems to have become known as lead colour (q.v.), although Smith had given a different formula for this. Similar mixtures went also under other colour names, including the

couleur de fer (iron colour - q.v.) of Bullet and the gris ordinaire (ordinary grey - q.v.) of Watin, the latter serving to illustrate its nature as the most basic and commonly used cheap grey.

## Black

Apart from Vanherman and Tingry's later editor, who suggested the use of mineral black and black wadd respectively in cheap exterior paints (to be discussed in a moment), writers from the late seventeenth century to the early nineteenth seem virtually unanimous in stating that lamp black (sample 11) was the pigment employed in making black paint. The single other exception noted is Butcher, who suggested that either lamp black or ivory black could be used,\* but the latter would have possessed less body in oil although it might have been better in distemper. Otherwise, Bullet, Stalker and Parker, Watin, Tingry, Reynolds, and Nicholson all stipulated the use of lamp black in oil and varnish formulae.\* In oil, Bullet combined it with a little white lead, which might have given the black a slightly greyish tendency; but Reynolds suggested the use of Spanish white, which would have acted merely as an extender. For a better colour and improved durability, however, he advocated the use of lamp black alone, and this too seems to have been Watin's invariable practice for finishes, although in a black undercoat for exterior ironwork he used a little umber, presumably as a drier. Bullet and Watin both stipulated the use of fat oil, the latter combining it with three parts of raw linseed oil for use, no doubt because this would add both to the gloss of the paint and to its speed of drying.

For both interior and exterior work a varnish medium could also be used. Stalker and Parker described the preparation of black japan (a product sold by the Ripon varnish-maker Williamson, during the eighteenth century)\* and black was also available in the range of couleurs lucidoniques manufactured in Paris from 1803, being one of the colours advertised as drying with a gloss.\* Watin's two formulae for black varnishes, spirit-based for interior work and oil-based for exteriors, have been described in Chapter II above, the latter being used on the black oil

undercoat already mentioned; and Vanherman's black varnish formula has also been discussed. The use of black distemper, however, can only be surmised from Gerbier's inclusion of a price of 1d. per square yard for: 'Walls done in faire black for a Tennis-Court' amongst others which relate to whitening and plasterwork.\* For exterior purposes, Vanherman gave directions for the preparation of a black 'IMPENETRABLE, OR ANTI-CORROSIVE PAINT' containing equal proportions of mineral black and crocia which he suggested was particularly suitable for the protection of ironwork, and Tingry's later editor mentioned that black wadd was used with tar for the same purpose.\* The London Patent Colour-Works advertised a black in their range of 'MINERAL, OR REFINED COAL-TAR PAINTS' for common outside work at a price of 20s. per cwt. a price which may be compared with that of the black in their range of 'IMPENETRABLE PAINTS IN LINSEED-OIL' at 52s. A second list printed by the same company gave the price of the latter as 56s., which coincides exactly with the rates given by two other early nineteenth-century paint manufacturers, Crease and Bentley, for black in their ranges of oil paint and 'ANTI-CORROSIVE PAINT' respectively.\* Vanherman, on the other hand, claimed that his black could be manufactured at a cost of approximately only 9s. 4d. per cwt.

For interior house-painting purposes black found particular use on chimney-backs, references to this being found, for example, in the accounts for Ditton Park in 1705, where fourteen were 'done black' in 1705.\* In 1748 a total of sixteen rooms on the ground and first floors and in the attics at Henry Pelham's house in Arlington Street had their 'Chimneys black'd';\* whilst in 1763 two chimneys at Egremont House (now the Naval and Military Club), Piccadilly, were 'plaister<sup>d</sup> and Blackt'.\* In all cases the unit cost was 12d., but in 1794 a price of 9d. for 'Chimneys prepared and blacked' was suggested in the Builders Price-Book.\* It is interesting to note that this entry is in the section on plasterers' prices, and the work at Arlington Street and Egremont House was performed by the plasterer: Although metal 'Backs of Chimneys' might be polished using a lead compound,\* the practice of blacking seems to

\*57 have persisted into the nineteenth century, and in 1827  
 it was ordered that the 'fire boards' in all the rooms  
 at Dunham Massey were to be painted black.\* Other small  
 elements in a room might also be coloured in this way.  
 Moxon suggested that 'the bottom, or lower parts of Rooms',  
 by which presumably he meant the skirtings or perhaps the  
 floors, were often painted black, a treatment seen in  
 Soane's 1823 perspective of the Old Board Room of the  
 Board of Trade in which the skirting riser and also the  
 \*58 door are shown in black;\* whilst a century later Pyne  
 recorded that the doors and window shutters in the Dining  
 Room, and the surbase, plinth, stiles of the doors, and  
 window shutters in the Lower Vestibule at Carlton House  
 \*59 were finished thus.\* In addition, Adam seems to have  
 contemplated the use of black, probably as part of an  
 'Etruscan' scheme, for the ceiling of the Lady's Dressing  
 \*60 Room at Mellerstain, Berwickshire, in 1778;\* and 212 ft.  
 run of 'cut fillet' at Osterley, Middlesex, was painted  
 \*61 black in 1787.\* No evidence has yet been encountered,  
 however, to suggest that in England interior ironwork  
 (other than that of chimneys) was commonly finished in  
 this way. Finally, the use of black in connection with  
 mourning formalities must be noted. The practice of hang-  
 ing rooms with black fabric and painting furniture within  
 the room black has been described in some detail by John  
 \*62 Fowler and John Cornforth,\* but it is clear that on such  
 occasions architectural elements too might be painted in  
 this way. When the Duchess of York died in 1671 her bed-  
 chamber was not only hung with black, but the doors and  
 \*63 doorcases were coloured black to match;\* and it seems  
 likely that the Amber Room at Nostell Priory, Yorkshire,  
 was similarly treated at some date during the nineteenth  
 century since a layer of black was found on cross sections  
 of paint from the joinery, but not on the entablature or  
 \*64 ceiling.\*

Blossom colour

\*65

Alexander Emerton's list of oil colours, which was  
 published by Salmon in 1734 contained blossom colour.\*  
 The price of 1s. per pound, against 4d. for white lead,  
 suggests that it was made using the expensive pigments  
 vermilion and/or a carmine lake (samples 46-54); and the



colour name again appears in an expensive category of oil finishes at 10d. to 1s. per square yard in the 1787 and 1794 editions of the Builders Price-Book.\*

Blue

Methods of mixing blue have been reviewed above, and the majority of the terms by which the colour name was qualified reflect the addition of different quantities of staining pigment, which was, in general, Prussian blue (samples 19-21). A good example of this is provided by Reynolds, who suggested that for interior work in oil to a basic quantity of 5 pounds of white lead,  $\frac{1}{2}$  ounce should be added to make sky blue, 1 ounce to make Prussian blue, and 2 ounces to make navy blue.\* Watin too indicated that a whole range of blues, including bleu tendre and others discussed below, could be made in this way but did not give quantified formulae.\* The price of the paint would obviously depend on the amount of this comparatively expensive staining pigment added to the white base, so that Phillips, for instance, listed a whole range of blues, probably made using Prussian blue, in ascending order of price. In 1812, fine sky blue cost 1s. 6d. per pound, a darker version 1s. 10d., another blue suitable for balusters and railings 2s. 5d., a darker variety 3s. 7d., and one still darker 4s. 9d.\* It is difficult, therefore, to make a detailed analysis of rates encountered for blue paintwork, but prices charged for several different blues are noted below; and Salmon indicated that the cost of fine sky blue paint making use of Prussian blue would vary between 10d. and 1s. per yard against 4d. for common colours.\* This figure was repeated in the 1787 and 1794 editions of the Builders Price-Book,\* and is roughly comparable with the rate of 9d. per yard charged for painting iron railings at Somerset House from 1785 to 1793 '3 times done finish<sup>d</sup> Blue', '3<sup>ce</sup> in oil Blue' and so on. In 1780, however, 'five times done finished Blue' had been priced at 2s. per yard,\* a rate roughly comparable with that of 2 $\frac{1}{2}$ d. per square foot for painting the staircase ironwork at Osterley fine blue in 1772-4.\* In the 1810 and 1813 editions of the Builders Price-Book the price of 'Twice in oil blue' was given as 1ld., 'Three times in oil ditto' as 1s. 1d., and 'Four times in oil ditto' as 1s. 5d. These rates may be compared

with the contemporary cost of two, three, and four coats of common colour at 8d., 11d., and 1s. 2d. respectively. Blue, as an expensive colour, could also be flatted, and prices for this are often given. 'Twice in oil and flated blue' cost 1s. 6d., 'Three times in oil ditto' 1s. 9d., and 'Four times in oil ditto' 2s., against 1s. 3d., 1s. 6d., and 1s. 9d., for two, three, and four times in oil 'flated dead white'.\* These prices are all more or less consistent with the suggestion made a few years later by Skyring that deep blue would cost an extra 4d. per square yard.\*

Besides its use on ironwork, which is discussed more fully in Chapter VII, blue oil paint, together with its equivalent tint in distemper, had come by the mid-eighteenth century to form one of the basic house-painting colours. References to its employment are numerous, and it may be found on many architectural drawings of the period. Manuscript notes indicating the use of blue occur, for example, on a number of the Adam ceiling designs at the Soane Museum,\* and it was also used to pick in the grounds of the pilasters in the Drawing Room at Osterley.\* In some cases, rather than oil, a distemper medium would be preferred, both Prussian blue and blue verditer (samples 155-157) being used for tinting. Only one quantified formula for a distemper blue has been encountered, calling for the addition of 6 ounces of Prussian blue (costing 9d. per ounce) to a stone of Paris white;\* but as in oil there is no doubt that widely varying quantities of staining pigment could be added to produce a whole range of tints. Information on prices too is limited, but in 1812 Phillips noted that blue distemper cost 8d. per yard (against 4½d. for common colours) and in 1821 revised this rate to 7d., although in 1818 Laxton had suggested a rate of 1s. 2d. (against 4d. for common colours).\*

Blue, ethereal

A colour of this name appeared in the list of 'IMPENETRABLE PAINTS IN LINSEED-OIL' designed for interior or exterior use sold by the London Patent Colour-Works in 1816 at a cost of 1s. per pound.\*

Blue, fair

A number of elements including the frieze, cornice, and door (with its jambs) in the Bedchamber, and entablature, door and its architraves, and wainscot 'under and about the Windoes' in the Dining Chamber at Ham House, Surrey, were painted fair blue in 1638. The majority of the work was varnished, and received two, three, or four undercoats. One item (the entablature in the Dining Chamber) is noted as having been executed in oil,\* but although recent analysis has shown that the pigment used in the work was blue verditer, the medium used on the remainder has not been investigated.\* Fair blue was also the term used to describe the colour in which the study of set No. 6 in the Gibbs building at King's College Cambridge was painted in 1733.\*

Blue, garter

In 1787 the ironwork of the staircase at Osterley was re-painted fine garter blue at a cost of 3½d. per square foot.\*

Blue, navy

Reynolds recommended that navy blue should be mixed for interior purposes in oil using 2 ounces of Prussian blue to 5 pounds of white lead, both in paste form (cf. samples 19-21).\*

Blue, Prussian

Although the term 'Prussian blue' was generally used to describe the pigment used, it appeared in the 1787 and 1794 editions of the Builders Price-Book to describe a variety of oil colour which was priced at 10d. to 1s. per yard.\* Reynolds recommended that Prussian blue should be mixed for interior purposes in oil by combining 1 ounce of best quality Prussian blue with 5 pounds of white lead. Both pigments were measured in paste form, but if the blue was of poor quality, he noted, more would have to be added (cf. samples 19-21).\*

Blue, royal

Bleu de Roi was included amongst the colours with a matt finish in the range of couleurs lucidoniques manufactured in Paris from 1803.\*

Blue, sky

Sky blue appears to have been made by the mixture of Prussian blue with white (samples 19-21). Emerton's fine

\*89 sky blue oil paint, sold at 8d. to 1s. per pound (against  
 \*90 4d. for white), was specifically noted to have been made  
 using Prussian blue;\* and Watin used the same pigment to  
 \*91 make bleu céleste in both oil and distemper.\* The term  
 seems to have been used to imply a fairly light tint,  
 and had been defined during the late seventeenth century  
 by Holme, for example, as 'a light welmish Blew'.\* Reyn-  
 olds's formula contained the smallest amount of Prussian  
 blue ( $\frac{1}{2}$  ounce in 5 pounds white lead paste) amongst those  
 \*92 forming his range of blues;\* and a comparatively small  
 quantity of staining pigment is implicit in the position  
 of fine sky blue as the cheapest of the blues listed by  
 Phillips in 1812 at 1s. 6d. per pound, deeper varieties  
 costing up to 8s. 8d. As with all colours, however, vari-  
 ation in strength was possible, and Phillips noted a darker  
 \*93 variety of sky blue was available at 1s. 10d.\* Bleu  
céleste was one of the matt range of couleurs lucidoniques  
 \*94 manufactured in Paris from 1803,\* and sky blue appeared in  
 the range of 'Anticorrosion paints' listed by Bennett in  
 \*95 1833 at a price equivalent to 3s. per pound.\* When applied  
 as an oil colour, the 1787 and 1794 editions of the Builders  
Price-Book indicated that sky blues (which were coupled with  
 \*96 Prussian blues) would cost from 10d. to 1s. per square yard.\*

The term sky blue may also be encountered in eighteenth-  
 century correspondence, accounts, and designs. It was used  
 by Chambers, for example, in writing to the Earl of Charle-  
 mont over alternative colour schemes for the Saloon in the  
 \*97 Casino at Marino, Dublin, in 1767;\* whilst Adam's design  
 of 1766 for the ceiling of the Library at Nostel Priory,  
 Yorkshire, has a manuscript note on it indicating the use  
 \*98 of 'Skie Blue'.\* It appears too in the accounts for paint-  
 \*99 ing the ceiling in the Drawing Room at Osterley,\* and from  
 the second quarter of the eighteenth century it was obvi-  
 ously an extremely popular colour.

#### Blue verditer

As already mentioned, blue verditer (samples 155-7)  
 is properly the name of a pigment particularly suited to  
 use in distemper. It was, however, used as a colour name  
 by Pincot, who marketed a blue verditer 'WATER COLOUR' for  
 \*100 house-painting,\* and by Laxton who appears to imply that

\*101 an oil medium was to be used.\* If so, it seems unlikely  
that blue verditer would have been used alone in its form-  
ulation, and, indeed, Phillips indicated that its colour  
could be reproduced 'by mixture', although he gave no clue  
\*102 as to the constituents.\*

Brick colour

John Smith recommended a mixture of red lead, a little  
white, and yellow ochre (samples 96-104) to produce brick  
colour in oil, a suggestion copied by Nicholson and the  
author of the Painter's... Pocket Manual a century and a  
\*103 half later.\*

Brimstone colour

Set No. 18 in the Gibbs Building at King's College,  
\*104 Cambridge was painted using brimstone colour in 1731,\*  
whilst jaune soufre ou pailé was one of the range of  
couleurs lucidoniques manufactured with a matt finish in  
\*105 Paris from 1803.\* Its tint may therefore have been seen  
as close to that of straw colour (q.v.).

Brown

Nicholson remarked that this colour contained no white  
lead whatsoever, and suggested that it was made using either  
raw or burnt umber (samples 110, 112), or by mixing red and  
\*106 dark ochres with black (samples 68-70, 71-3, 74-6).\* The  
latter method was commonly recommended for other browns,  
notably chocolate colour (q.v.), but Nicholson appears to  
stand alone in proposing the use of umber, which would have  
been comparatively expensive, for an ordinary brown.  
Seventeenth-century references to umber colour may be  
encountered, however, and these are discussed below. In  
another formula without parallel, Whittock suggested the use  
of Venetian red, yellow ochre, and a little Vandyke brown  
\*107 to mix a dark warm brown distemper.\*

Brown, often qualified as dark brown, was used by Adam  
\*108 in several ceiling designs;\* and a brown 'Coal tar' paint,  
presumably for exterior use, was priced by Bennett in 1833  
\*109 at 18s. per cwt.\*

Brown, cinnamon

See Cinnamon colour below.

Brown, clove

Nicholson mentioned clove brown in a list of common

- varieties of the colour, but gave no specific details of its particular shade or formulation.\*
- \*110
- Brown, Etruscan                      Etruscan brown appears (together with Etruscan yellow) as a colour name in a manuscript note on Adam's design of 1773 for the ceiling of the Second Drawing Room at Ashburnham House.\* It was also mentioned by Hay in 1828.+
- \*111                      +112
- Brown, London                      Nicholson mentioned London brown in a list of common varieties of the colour, but as with others he gave no specific details of its particular shade or formulation.\*
- \*113
- Brown, olive                      In 1808 Crease advertised a cheap olive brown paint, probably intended for exterior purposes, at 3d. per pound.\*
- \*114
- Brown, purple                      See purple brown, below.
- Brown, Quaker                      In 1771 Mrs. Powys described the stucco in the Eating Room at Fawley Court, Buckinghamshire, as painted quaker brown.\* For a discussion of quaker tints see entry below.
- \*115
- Brown, sad                      Nicholson mentioned sad brown in a list of common varieties of the colour, but as with others he noted gave no specific details of its particular shade or formulation.\* The adjective sad is discussed, however, under sad colour (q.v.) below.
- \*116
- Brown, Spanish                      Although properly the name of a red ochre (cf. sample 62), Spanish brown was included by Nicholson in a list of common varieties of brown;\* and a colour of this name was available in the range of 'IMPENETRABLE PAINTS IN LINSEED-OIL' advertised for interior or exterior use by the London Patent Colour-Works in 1816 at 32s. or 36s. per cwt.\*
- \*117                      +118
- Brown, tawny                      Nicholson included tawny brown in a list of common varieties of the colour, but as with others he noted gave no specific details of its particular shade or formulation.\*
- \*119
- Brown, warm                      See under Brown above.
- Buff                      John Smith, in a formula copied a century and a half

later by Nicholson and the author of the Painter's... Pocket Manual, described buff in oil as made simply from yellow ochre and white lead (samples 105-7);\* but later authors seem to have been unanimous in recommending the addition of a little red. Vanherman, for example, observed that vermilion was mixed with yellow to make buffs, elsewhere noting the use of spruce yellow in this connection (cf. samples 108-9);\* whilst Tingry suggested the employment of yellow and a little red lead to make buff or chamois in any medium.\* Watin, however, had based his mixture for chamois on Naples yellow, directing that one should combine 'ceruse, beaucoup de jaune de Naples, une pointe de vermillon & un peu de jaune de Berry', again in all media.\* Curiously, Butcher seems to have omitted yellow altogether, simply adding vermilion, orange lead, rose pink, or any other rose colour alone to white lead, a combination which would not produce buff as the term appears to have been generally understood during the eighteenth century or as thought of today.\*

In a letter of 1770, Sir William Chambers recommended to Gilbert Meason, a Leith merchant, that for a neat effect in his Parlours (i.e. the better rooms in the house) he could use buff colour amongst a number of alternatives;\* and in 1780 part of the interior stucco of Somerset House, London, was painted 'five times... finished Buff Colour' at a rate of 1s. 4d. per square yard.\* Pincot indicated that buff oil paint would cost 6d. per yard above the cost of common colours;\* the 1810 and 1813 editions of the Builders Price-Book indicated it would cost 4d. per yard in distemper against 3d. for common colours;\* and Laxton a few years later gave a price of 5d. for buff in the same medium against 4d. for common colours.\* It may also be noted that chamois was one of the colours available in a matt finish which was included in the range of couleurs lucidoniques manufactured in Paris from 1803.\*

#### Carnation

John Smith, in a formula copied by Nicholson and the author of the Painter's... Pocket Manual a century and a half later, indicated that carnation for house-painting in oil was made from lake and white (samples 46-8).\*

Cedar colour

- The term cedar colour could either imply graining or a plain paint finish, and, as pointed out in the section on imitations above, it is often difficult to know to which any given reference refers. However, Emerton sold cedar colour oil paint at 6d. per pound (against 4d. for white lead);\* and several late seventeenth-century references to the colour have been noted. In 1669 part of the interior of the Sheldonian Theatre, Oxford, was painted in cedar colour 'not being veined' at 1s. per square yard;\* various rooms at Dyrham Park, Gloucestershire (now Avon), were painted (or grained) cedar colour in 1694 at 10d. per square yard;\* Robert Abbott's tender for interior painting at Greenwich Hospital of about 1696 quoted a price of 8d. per yard for cedar colour and others 'Substantially Done 3 times in Oyle';\* about the same time Celia Fiennes noted that the Parlour at Broadlands, Hampshire, belonging to Sir John Barbe was 'wainscoated and painted a cedar coullour';\* and an estimate for painting at Stoke Edith, Herefordshire, of 1705 quoted a price of 1s. per yard.\* Although cedar colour appears in Leadbeater's re-print of Emerton's list in 1770, it seems fairly likely that the term had by then become archaic, and no later references to it have been encountered.\*
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Cerulian colour

- In the City & Country Purchaser & Builder, published in 1667, Stephen Primatt quoted a price of 1s.6d. per square yard for 'Painting the best Cerulian or Blew colour in Oyl' against 9d. to 1s. for a number of common colours including 'a fair Stone-colour laid in Oyl... being coloured over thrice' at 1s.\* (cf. entry under blue, fair above).
- \*139

Chestnut

- To mix marron foncé Watin recommended a combination of English red, 'ochre de rue', and ivory black in either oil or distemper, advice repeated by Tingry in the English translation of his book for chestnut colour.\* The author of the Painter's... Pocket Manual gave a similar mixture, suggesting that red ochre and black should be combined to make a dark chestnut, but added that yellow ochre could be added to make it lighter\* (cf. samples 74-82). Earlier, to make chestnut colour japan Stalker and Parker had used
- \*140
- \*141



Indian red or red brown ochre with lamp black and a  
 \*142 little white,\* and for colouring prints John Smith had  
 \*143 suggested the use of umber, lake, and white;\* but it is  
 unlikely that the latter combination would have been  
 used for house-painting.

Chocolate colour

Those authors who give mixtures for chocolate colour  
 are unanimous in making it from red ochre and black (sam-  
 ples 68-70, 71-3). Nicholson, for example, suggested a  
 mixture of Indian red and black, and stated that the col-  
 \*144 our contained no white lead whatsoever.\* Reynolds (in a  
 formula specifically for interior purposes), Butcher, and  
 the author of the Painter's... Pocket Manual all combined  
 \*145 lamp black with Spanish brown;\* whilst Tingry's later  
 \*146 editor mentioned also the alternative use of Venetian red.\*  
 Vanherman too used Spanish brown in making his chocolate  
 'IMPENETRABLE, OR ANTI-CORROSIVE PAINT' for exterior pur-  
 \*147 poses, giving the following alternative quantities:\*

i.	whiting	224 lb.
	Spanish brown	112 lb.
	mineral black	112 lb.
	crotia	224 lb.
ii.	whiting	56 lb.
	Spanish brown	56 lb.
	mineral black	56 lb.
	crotia	84 lb.

Altogether, therefore, it is clear that the colour was  
 generally darker than chestnut colour discussed above, and,  
 lacking the addition of yellow ochre common in this colour,  
 was colder in tone. Samples of chocolate paint from two  
 rooms at Somerset House painted in 1780 were close in col-  
 \*148 our to Munsell references 2.5YR3/2 and 5YR2.5/1.\*

Chocolate colour appears in Emerton's list at a price  
 of 6d. per pound (against 4d. for white lead), and was  
 described in the Builders Price-Book as one of the common  
colours, a category in which it was also included by Lax-  
 \*149 ton.\* A large part of its employment was for exterior

purposes, Pincot remarking that it was one of the five  
\*150 colours in general use for such work;\* and Vanherman  
advocated his own colour as particularly suitable for  
\*151 timber fences.\* The front gates of Egremont House (now  
the Naval and Military Club) in Piccadilly, London, were  
\*152 painted chocolate in 1760;\* and in 1808 Crease observed  
that it was preferable to Spanish brown for exterior  
\*153 items.\* Although 8d. per pound was paid for a quantity  
of chocolate paint supplied to Tredegar House, Newport,  
Monmouthshire (now Gwent), in 1793, Crease advertised his  
oil paint of this colour at a much cheaper rate equivalent  
\*154 to 42s. per cwt.\* This was matched by Lingard in his  
\*155 'Invulnerable Oil Paint' in 1825,\* although in 1816 the  
London Patent Colour-Works had sold the chocolate in their  
\*156 range of 'IMPENETRABLE PAINTS IN LINSEED-OIL' for 52s.\*  
Even cheaper varieties were, however, available for exterior  
use, including the chocolate in the latter's 'MINERAL OR  
\*157 REFINED COAL-TAR PAINTS' at 18s.;\* whilst Vanherman sug-  
gested his chocolate 'IMPENETRABLE OR ANTI-CORROSIVE PAINT',  
the formula for which has been given above, could be manu-  
\*158 factured for as little as 9s. 4d. per cwt.\* Bentley, on  
the other hand, had been selling his chocolate 'ANTI-  
CORROSIVE PAINT' for exterior purposes at 46s. in 1817,  
and Bennett noted in 1825 that chocolate 'Coal tar' paint  
\*159 would cost 52s.\* In addition, chocolate was available in  
the London Patent Colour-Works range of 'ANTIQUÉ ORNAMENTAL  
PAINTS' for interior and exterior application at 6d. per  
\*160 pound, the equivalent of 56s. per cwt.\*

In interiors chocolate had a very special use, being  
applied as an almost standard finish on softwood doors and  
often on skirtings during the mid-eighteenth century. Many  
of the doors in the Gibbs Building at King's College,  
Cambridge, for example were painted in this colour between  
\*161 1731 and 1734;\* whilst Phillip Yorke of Erddig directed  
\*162 that the door of a room should be painted chocolate in 1772.\*  
In this case the skirting was to be white, but investigation  
has shown that both the door and skirting in the rooms of  
the Royal Society's Housekeeper, and Secretary of the  
Society of Antiquaries at Somerset House were painted  
\*163 chocolate in 1780;\* and it seems most likely that these

- were the areas to which 9½ square yards of chocolate were applied in the Dining Room of Henry Pelham's house in Arlington Street, London, in 1745.\* In addition it may be noted that a staircase handrail at Osterley, Middlesex, was painted chocolate between 1772 and 1774.\*

Cinnamon colour

- In 1692 it was recorded that one of the rooms at Erddig was, 'but ordinary... and plane, ether a dark brown or sumewhat like a sinnimone color'.\* Over a century and a quarter later, Whittock directed that a light cinnamon brown coloured distemper should be made using Vandyke brown, king's yellow, Venetian red, and whiting. The result was, he indicated, a delicate orange-grey tint; and he illustrated the use of cinnamon on trellis work in his Chinese apartment.\* Within the previous decade two tints of 'cinnamon coloured brown' had been used in the Top Hall at Nostell Priory, Yorkshire;\* and the colour was later mentioned by the eminent Edinburgh house-painter, D.R. Hay.\*

Claret colour

- Reynolds recommended that a claret colour for interior use should be mixed using 3 parts of white lead with 1 of Spanish brown, tinged with a small quantity of lamp black (cf. samples 65-7).\* This may be compared with the red for the walls of a picture gallery advocated by Vanherman discussed below.

Common colours

- Common colours, an expression used by Salmon in 1734,\* were later defined in the Builders Price-Book as including white lead, stone colour, lead colour, cream colour, pearl colour, wainscot colour, and chocolate colour.\* The first six of these formed the cheapest range of paints sold by Emerton in the 1730s, whilst chocolate colour was only a little more expensive.\* Alongside it Emerton listed mahogany colour, cedar colour, and walnut tree colour, the last two of which seem to have gone out of use by the latter part of the century, but the first of which was also priced in the Builders Price-Book 'twice done' at 4d. per square yard, the same price as the other common colours there mentioned.\* Its inclusion in this class may therefore be presumed. In the early nineteenth century Laxton too instanced lead, stone, chocolate, and white as

- \*175 common colours.\* The term is frequently met in painting accounts, including, for example those for Henry Pelham's house in Arlington Street (1745-50); Egremont House, Piccadilly (1759); Osterley Park (1772-4); and Somerset
- \*176 House (1780).\* The last of these illustrates well the common practice of abstracting all the items for common colours throughout the entire building and placing them at the head of the account, more expensive items alone being listed room by room.

Copper colour

- The London colourman, Charles Hodgkin, advertised copper colour 'Anticorrosion paint' at 54s. per 100 pounds, a price repeated by Bennett who may have been quoting from
- \*177 Hodgkin's trade card.\*

Cream colour

- Alexander Emerton advertised cream colour in the cheapest range of his ready-mixed tints,\* and it was included with the common colours in the 1787 and 1794
- \*178 editions of the Builders Price-Book.\* For exterior purposes Reynolds indicated it was prepared by mixing 1 pound of spruce yellow or English ochre with 30 pounds of white lead prior to grinding (cf. sample 106), but, he observed,
- \*179 the tint could be altered by using more or less yellow.\*
- The lobby leading to the Old Parlour at Dyrham Park, Gloucestershire (now Avon), had been painted 'creami colour' in 1694, and the Library walls at Gordon Castle,
- \*180 Morayshire, cream colour in 1782.\*

Crimson

- Although Watin described cramoisi as made from carmine lake, carmine, and a very little white lead (sample 58),\*
- \*182 it could also be made by mixing these with other pigments, in particular vermilion (sample 59). Thus, whilst Waller too used carmine alone to define crimson in his chart intended to provide a set of colour standards for scientific use,\* suggesting that a purplish hue was generally
- \*183 implied by the term, John Smith, who mentioned crimson only in connection with colouring prints, directed it should be prepared using vermilion, lake, and white.\* Vanherman gave a similar formula, suggesting that a crimson for use in libraries should be mixed using 1 pound of rose pink, 1
- \*184 packet of Chinese vermilion, and  $\frac{1}{4}$  pound of satin white.

He gave this formula, which he noted 'agrees with books and their bindings', in connection with his 'AROMATIC PAINT' and observed interestingly: 'Some gentlemen prefer having the colour subdued, by the addition of a small portion of black'. It was applied over an undercoat made from rose pink and Venetian red.\* Fine dark crimson was used for the ground of the frieze in the Drawing Room at Osterley Park in 1772-4, and, amongst other colours, crimson was also used at the same date in the cabin of the 'San Pan' mentioned in the same account.\* In 1823 Rutter recorded that the ground of the vault in the Oratory at Fonthill Abbey was deep crimson;\* in 1817 it had been recommended that the walls in the Drawing Room at Towneley Hall, Lancashire, by Jeffry Wyatt should be crimson, gold, and white;\* and the colour was mentioned by Hay in 1828.+

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\*188 +189

Dove colour

In 1780 parts of the ceiling in the Council Room of the Royal Academy at Somerset House, London, were painted dove colour.\* No contemporary suggestion for mixing this colour has been encountered; and, although John Smith noted that it could be made from white, a little lake and a little smalt, his formula was given in connection with the colouring of prints and would in any case have been obsolete by the latter part of the eighteenth century.\*

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Drab

Vanherman remarked that spruce ochre combined with reds or brown produced countless tints of pleasant drabs (samples 119-121, 122-4), and that Venetian red 'with white and black, vermillion and ochre... produces a variety of tints, particularly of the drab kind, which are always admired, for their solid appearance and quiet tone'. For warm drabs he mentioned that burnt umber (sample 126) was employed.\* He also applied the adjective to greens (q.v.), whilst Hay later indicated that tints of citrine (a tertiary colour he defined as made by combining orange and green) were called drab. The samples he gave correspond roughly with Munsell references 2.5GY7/2, 2.5GY6/2, and 7.5Y5/3;\* and Laxton noted that drabs would cost 3d. per square yard over the rate for common colours.\* In 1823 an intention was expressed to paint the walls of five privies in the garden at Dunham Massey, Cheshire, drab.\*

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about the same time two tints of drab were used on the  
 \*196 walls of the Top Hall at Nostell Priory, Yorkshire;\*  
 in his Cabinet-Maker and Upholsterer's Guide published  
 in 1826 George Smith instanced the use of a very pale  
 \*197 drab in the decoration of the walls of a room;\* and in  
 1846 Bartholomew specified a light drab for the external  
 \*198 painting of window sashes.\* The term seems, therefore,  
 to be one generally associated with the early nineteenth  
 century, although a room at Erddig in which the wainscot  
 seems to have been grained in imitation of a variety of  
 timbers in 1691 was referred to the following year as  
 \*199 'the drab roome'.\*

#### Fawn

Nicholson described the production of fawn colour  
 distemper and fine yellow fawn oil paint from burnt sienna,  
 \*200 or burnt umber and white (sample 126).\* Butcher, and the  
 author of the Painter's... Pocket Manual (perhaps copying  
 him), however, described a rather different tint made by  
 combining white lead, stone ochre, and a small quantity of  
 \*201 vermilion (samples 108-9).\* The samples given by Hay in  
 1846 correspond roughly with Munsell references 7.5R7/2  
 \*202 and 7.5R6/2;\* and Laxton and Skyring respectively indicated  
 that fawn oil paint would cost an extra 5d. and 4d. over  
 \*203 the rate for common colours.\*

#### Flesh colour

John Smith (Butcher and the author of the Painter's...  
 Pocket Manual copying him) proposed a mixture of lake,  
 white lead, and a little vermilion to make flesh colour  
 (samples 46-54), but Nicholson suggested the combination  
 \*204 of Indian red with white (samples 55-7).\* Pincot des-  
 cribed a flesh colour for priming made from 14 pounds of  
 \*205 white lead and 1 pound of red lead;\* and couleur de chair  
 appears in the list of couleurs lucidoniques available in  
 a matt finish which had been manufactured at Paris from  
 \*206 1803.\*

#### Glass colour

In 1759 a blank window at Egremont House, Piccadilly,  
 \*207 was painted a dark glass colour.\* Earlier, Waller had  
 used a mixture of ochre and ultramarine to prepare the  
 sample of glass colour in his chart of standards for  
 scientific use, but such a combination would not have been

\*208 used for house-painting.\*

Gold colour

\*209 Watin indicated that couleur d'or was made in oil or distemper from ceruse, Naples yellow and 'ochre de Berry'.\* Tingry, however, altered this in his formula for golden yellow suggesting the alternatives of Naples or Montpellier (patent) yellows (samples 88, 89), with Spanish white, or the use of Realgar (sample 92) with ochre of Berri and white of Morat in all media.\* The author of the Painter's... Pocket Manual revised this in turn, suggesting the use of massicot or Naples yellow with a small quantity of realgar and very little Spanish white.\*

\*212 In the 1730s, Emerton was selling gold colour oil paint at 8d. per pound, but this could not, of course, have been made in any of the ways mentioned above, except by using massicot, realgar and yellow ochre.\* John Smith had, in fact, suggested the combination of red orpiment and white massicot in equal parts to imitate gold in the colouring of prints, but this need not necessarily imply that Emerton was using such a mixture in his gold colour.\*

\*213 Pincot's bright golden yellow 'WATER COLOUR', however, which he was retailing about 1811 at 1s. 6d. per pound, seems most likely to have been based on pink (sample 84).\*

\*214 Jaune d'or was one of the couleurs lucidoniques manufactured at Paris from 1803 with a gloss finish.\*

Green

\*216 Methods for mixing different types of green have been reviewed above. Details of the formulae will be found under the various qualified names for greens below, but the word was often used on its own, and as will be remembered formulae simply for green were given by Watin, Nicholson (a good green), Butcher, and Vanherman.\* Their methods ranged from the use of verdigris (samples 128-36), to the combination of blue verditer or Prussian blue with yellow ochre (samples 162-70), or employment of Prussian blue with patent yellow or chrome yellow (samples 189-97, 202-10). This wide variety of suggestions shows that the term green did not necessarily imply any particular mixing method, although it was suggested above that the most satisfactory for ordinary use in oil during the eighteenth

century would have been to combine yellow ochre with Prussian blue.

On account of the widely varying cost and proportion of the possible constituents, prices for different types of green covered a broad spectrum. Emerton, it will be remembered, retailed his olive colour and pea colour at 8d. to 1s. per pound against 2s. 6d. for fine deep green;<sup>\*</sup> and prices noted by Bennett a century later included common invisible green oil paint at 7d. per pound, olive at 9d., a good green at 1s., a superior green and pomona green at 1s. 6d., Roman green at 1s. 9d., Saxon green at 2s., Spanish olive green at 2s. 6d., and patent grass green at 3s.\* This makes comparative analysis of the prices encountered in painting accounts virtually impossible, but it is useful to note that in the 1794 edition of the Builders Price-Book common greens were priced at 10d. to 1s. per square yard against fine deep greens at 1s. to 1s. 2d.\* In later editions the distinction was dropped and the following prices were given:

Twice in oil green	1s.
Three times in oil ditto	1s. 2d.
Four times in oil ditto	1s. 6d.
Twice in oil and flatted green	1s. 7d.
Three times in oil ditto	1s. 10d.
Four times in oil ditto	2s. 1d.
Ditto with verdigris green	2s. 6d.

At this date prices for two, three, and four coats of common colours were 8d., 11d., and 1s. 2d. respectively; and for twice, three times, and four times in oil flatted dead white 1s. 3d., 1s. 6d., and 1s. 9d.\* These figures are more or less consistent with Laxton's suggestion that light greens would cost an extra 5d. per square yard over common colours.<sup>\*</sup>

It may also be noted that proprietary green paints produced in the early nineteenth century included the dull dead greens 'by mixture' which Phillips indicated were



sold in 1812 at 1s. 2½d. per pound, the deep green in the range of 'IMPENETRABLE PAINTS IN LINSEED-OIL' for interior or exterior application manufactured by the London Patent Colour Works in 1816 and sold at 1s. 6d. per pound, and the light and deep greens in their range of 'ANTIQUÉ ORNAMENTAL PAINTS' sold at 1s. 3d.\* Other greens in these ranges are referred to under the appropriate headings below.

An examination of building accounts suggests that in the mid-seventeenth century green paint was often varnished. At Ham House, Surrey, for example, elements such as the wainscot, a door, and a cornice in the Green Parlour and two passages were painted green or fair green varnished at a cost of 1s. 6d. per yard;\* the 1649 inventory of Wimbledon House, Surrey, noted that the wainscots in the Lower Spanish Room and Stone Gallery were varnished green;\* and in 1663 Gerbier gave a price of 1s. per yard for: 'Painting of the fairest green, that can be in distemper, and varnisht'.\* Varnish does not seem invariably to have been applied though, and the wainscot in the Buttery and entablature in the Closet of the Garden Chamber at Ham were finished in green and fine green oil paint respectively at a rate of 1s. 8d. per yard, the first having three and the second two oil undercoats;\* whilst later in the century limited areas of green at 2s. per yard appear without mention of varnish in the accounts for Hampton Court, Whitehall Palace, and Kensington Palace.\* The colour was also used on the Members' seats and a doorcase in the House of Commons at Westminster in February 1669/70;\* and seems too to have been popular for similar furniture externally. Items for painting garden furniture and rails green appear in the accounts for Boughton House, Northamptonshire, and Montagu House, London, in the 1700s at the lower rates of 1s. 4d. and 1s. respectively, suggesting a cheaper variety may have been employed in such situations.\*

References to green paint in the second half of the eighteenth century, when it had come to be used on all coloured elements in a room including ceilings, skirtings, walls, and shutters, are too common to mention individually,

- but an indication of its popularity is given by its occurrence, often qualified as dark or light green in over forty manuscript notes on the Adam ceiling designs in the Soane Museum.\* By this date, it was, of course, often flatted, and instances may be found in the accounts for Osterley Park (1772-4 and 1787), Somerset House (1781-93), and notes for redecoration at Dunham Massey in 1823.\* Undoubtedly, green was an extremely important and popular colour at this time, a circumstance reflected in the wide range of adjectives listed below by which it was qualified.
- \*230
- \*231
- Green, American
- \*232
- \*233
- Green, apple
- Green, aquatic
- \*234
- Green, Berlin
- \*235
- Green, bottle
- \*236
- Green, bronze
- \*237
- Vert Américan was one of the couleurs lucidoniques available in a semi-gloss finish which were manufactured at Paris from 1803;\* whilst in 1841 Lewis Berger noted a commercial recipe for American green containing verditer, chrome yellow, and Scheele's green.\*
- See Green, pomona below.
- In 1831 Lewis Berger noted a manufacturing formula for this colour which contained 92 lb. emerald green, 8 lb. Antwerp blue, and 1 lb. 'pale' chrome yellow.\*
- Vanherman suggested Berlin green should be made from 1 pound of wet refiners verditer, 1 pound of wet chrome yellow, 13½ pounds of wet blue, and 8 pounds of wet white lead. After passing the mixture through a 60 hole wire sieve and allowing it to dry it was ground into linseed oil for use.\*
- In 1808 Crease retailed a rich bottle green oil paint at 1s. per pound, although in 1812 Phillips indicated that a bottle green 'by mixture' would cost 3s. 7d. per pound, a price amended to 3s. 6d. in 1821.\*
- Vert bronze was one of the couleurs lucidoniques available with a semi-gloss finish which were manufactured in Paris from 1803.\* The colour was, perhaps, related to that imitating patinated bronze discussed in the section on imitations in Chapter II above.

Green, Brunswick

This pigment name was used by Vanherman to describe a colour in his range of 'IMPENETRABLE OR ANTI-CORROSIVE PAINTS'. It was made using equal parts of whiting, (chrome yellow) Brunswick green, and crocia, and could be manufactured, he claimed, for about 2d. per pound.\*

\*238

Green, Chinese

In 1844 Lewis Berger noted a manufacturing formula for this colour which contained 3 cwt. emerald green, 22 lb. indigo, and 8 lb. 'Super Pale' chrome yellow.\*

\*239

Green, compound

Watin gave a formula (later transcribed by Tingry and published in English as a compound green for rooms) under the heading vert de composition. It contained 1 pound of ceruse, 2 ounces of Dutch pink, and  $\frac{1}{2}$  ounce of Prussian blue, although, he indicated, the quantity of pink could be varied. It could be used in oil or distemper, and Tingry added also directions for its employment in varnish (cf. samples 171-9).\*

\*240

Green, drab

Vanherman discussed the preparation of drab greens from spruce ochre and Prussian blue with white, suggesting as variations the substitution of black for the blue and raw umber for the ochre (cf. samples 162-70, 211-13). The term drab (q.v.) has been discussed above, and Vanherman remarked that such greens were reposeful, solid, and of quiet tone.\*

\*241

Green, fine

The most expensive colour in Emerton's colour list of the 1730s was fine deep green at 2s. 6d. per pound against 4d. for the cheapest and 8d. to 1s. for other greens, and as suggested in Chapter I above it was probably based on verdigris (cf. samples 128-36, 146-8).\* As late as 1830 Tingry's editor indicated that green of the finest kind was made from that pigment,\* but whether the term fine green invariably implied its use seems uncertain. In the 1794 edition of the Builders Price-Book, fine deep greens were listed at 1s. to 1s. 2d. per yard, a price not much higher than common greens at 10d. to 1s. This suggests that constituents cheaper than verdigris may have been employed,\* whilst it will be remembered from Chapter I that Lewis Berger gave the name 'fine green' to a variety of Scheele's

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\*243

\*244

green manufactured between 1811 and 1815. Nevertheless, the term does seem often to have been used to imply one of the better quality greens, and Bennett, for example, suggested that fine deep green coal-tar paint (presumably for exterior use) would cost ls. 6d. per pound against 10d. for dark olive.\* The term may also be found in eighteenth-century manuscripts, including Adam's estimate of 1771 for painting the Council Room at the Shire Hall, Hertford,\* and the painting account for Gordon Castle where the beading of the window shutters and doors of the Duchess's Bedroom was painted fine green in 1782;\* whilst some of the grounds in the ceiling of the Drawing Room at Osterley Park were painted superfine green between 1772 and 1774.\*

Green, Fowler's patent      See Green, patent below.

Green, French                      The term French green was in use during the seventeenth century, John Smith recommending a combination of pink and indigo in its preparation for colouring prints.\* The first mention of it so far encountered in connection with house-painting, however, is the French green 'WATER COLOUR' retailed by Pincot about 1811;\* and in connection with this it is useful to recall that Berger manufactured a copper carbonate pigment he called 'French green' in 1816 (sample 161), whilst at the same date his 'second French green' was a variety of Scheele's green (samples 198-200). Both Laxton and Skyring referred to French green oil paint as costing an extra 9d. and 4d. over the price of common colours respectively, the latter listing it with 'other superior colours'.\*

Green, garden                      On the continent it seems the practice of painting garden furniture in green was well established from the beginning of the period under review, and two early eighteenth-century English instances of this have been noted under Green above. D'Aviler described the 'green with which one paints trellis work, doors, grilles and garden benches' as made with 'verd de montagne' (samples 149-51), the pure pigment being used for the finishing coat, which was laid on a ground made from equal parts of ceruse and 'verd de montagne'. The first coat was of pure ceruse.

The colour, he observed, became more beautiful with time and did not blacken like verdigris, which was, he said, cheaper.\* Bullet, on the other hand, recommended the use of equal parts of 'vert de montagne' and verdigris in the finishing coat, noting too that the addition of an equal part of ceruse would produce a beautiful colour.\* For vert de treillages Watin simply used 1 pound of ordinary verdigris mixed with 2 pounds of ceruse, but in town, recommended the use of 3 pounds of the latter on account of the blackening effect impure air had on it.\* This suggestion was endorsed by Tingry who copied his formula (cf. samples 128-30).\*

In 1808 Crease was selling garden green oil paint at 8d. per pound, a price which suggests that a far humbler green than those described by the French authors was commonly used in this country.\* This is apparent too from the 'Receipt for a Green Paint proper for Rails &c' discussed below under Green, invisible (q.v.) and the use of olive green (q.v. also) for exterior work.

#### Green, granite

In 1819 Pyne recorded that the walls of the Great Hall, Vestibule, and Staircase at Carlton House were painted granite green, a colour which, he remarked, 'accords admirably with the effect of the Sienna marble, the verd antique, porphyry, and the several imitations of these costly materials'.\*

#### Green, grass

John Smith described the combination of a little pink-yellow with verdigris (samples 131-6) as making a delicate grass green, a suggestion copied by Nicholson and the author of the Painter's... Pocket Manual.\* Elsewhere, however, Nicholson proposed only the use of verdigris (samples 128-30), whilst Reynolds indicated that a grass green for exterior use should be made from equal portions of verdigris and white lead.\* Smith, however, had regarded such a tint as willow green (q.v.). Vert pré appears amongst the range of couleurs lucidoniques available with a glossy finish which were manufactured at Paris from 1803;\* and in 1812 Phillips indicated that grass green, the most expensive of the greens he listed, would cost 4s. 10d.

per pound (presumably in oil), but in a spirit medium 6s. 10d., and in varnish up to 8s. 4d. It seems likely they contained verdigris since he preceded them with a

\*261 light verdigris colour at prices between 3s. and 4s. 3d.\*

In 1816 the London Patent Colour-Works patriotically marketed Waterloo grass green in their range of 'IMPENETRABLE PAINTS IN LINSEED-OIL' for interior or exterior use at 2s. 6d. per pound; again the most expensive colour

\*262 in their range;\* and in 1833 Bennett indicated that

\*263 royal grass green 'anticorrosion' paint would cost roughly the equivalent of 3s. 2½d. per pound (16s. per 5 pounds).\*

The expense of all these strongly suggests the use of verdigris, and as far as it is possible to link any particular green with a pigment, grass green does seem often to have implied its employment.

Green,  
 immarcissible  
 bright

The most expensive colour in Lingard's 1825 list of his 'Invulnerable Oil Paints' he called immarcissible bright green. It retailed at 2s. 6d. per pound (against about 4d. for invisible green) and he described it as,

'the most beautiful bright Colour ever yet offered for Ornamental Painting, such as Virandas, Garden-Chairs, Flower-Stands, Windows, Doors, &c. &c. It will keep its original colour, in the hottest sun, for a number of years, without blistering or fading, as may now be seen in London, where it has stood nearly seven years. Its brilliancy is also particularly adapted for beautifying the Interior of Public Buildings, or Private Drawing-Rooms.'\*

\*264

Green, inferior

Tingry's later editor described inferior greens as made from ochre and Prussian or other blues (samples 162-70).\* Presumably it was greens of this kind which were referred to in late eighteenth-century editions of the Builders Price-Book as common greens.\*

\*265

\*266

Green, invisible

Invisible green seems to have been the cheapest generally employed for exterior work, and appears in a large number of early nineteenth-century price lists. Crease described it as preferable to Spanish brown for exterior

use, and explained it,

'is so denominated, from its being proper for covering gates and rails, in parks, pleasure grounds, &c. by rendering them in a measure invisible at a distance, on account of its approximation to the hue of the vegetation.'\*

\*267

Earlier, in the English Garden, the poet William Mason had given a description in verse of how to prepare a dark green oil paint based on ochre and black with white lead (samples 137-45), whose 'shadowy hues / Tinging thy fence may lose it in the lawn'; and concluded on a triumphant note:

'The paint is spread; the barrier pales retire,  
Snatch'd, as by magic, from the gazer's view.'\*

\*268

Vanherman gave two formulae for mixing the colour in his range of 'IMPENETRABLE, OR ANTI-CORROSIVE PAINTS', remarking it was,

'one of the most pleasant colours for fences, and all work connected with buildings, gardens, or pleasure grounds, as it displays a richness and solidity, and also harmonises with every object, and is a background and foil to the foliage of fields, trees, and plants, as also to flowers.'

His formulae were:

i.	Whiting	112 pounds
	Bristol ochre	224
	Damp blue	112
	Crotia	112
	Mineral black	28
	English umber	14
ii.	Whiting	56 pounds
	Yellow ochre	56
	Mineral black	28
	Brunswick green	28
	Crotia	112

\*269 The first could, he claimed, be prepared for less than 2d. per pound, and the latter for not more than 1½d.\*

\*270 Nicholson too gave a formula for invisible green, recommending the combination of dark ochre, blue, and a little black (cf. samples 162-70);\* whilst a manuscript 'Receipt for a Green Paint proper for Rails &c so as to mix with Herbage or Trees', probably dating from the latter part of the eighteenth century, reads as follows:

\*271 'Take the palest yellow Oker, and mix it up with a small quantity of Ivory Black so as to produce a light Olive. - In finer Work use Prussian Blue in place of the Ivory Black which will produce a light Green Colour, - and in either case if a Light Colour is required add White Lead. - The proper Tint must be chosen by the Eye at a due distance'.\*

Prices for proprietary invisible green paints in oil given by Crease (1808), Pincot (c. 1811), the London Patent Colour-Works (1816), and Lingard (1817) ranged from 40s. to 56s. per cwt., although Bennett (1833) suggested 7d. per pound (equivalent to 65s. 5d. per cwt); whilst the London Patent Colour-Works 'ANTI-CORROSION' exterior paint was priced at 42s. and Bentley's 'ANTI-CORROSIVE PAINT' at 56s. in 1817. The London Patent Colour-Works also sold invisible green 'ANTIQUÉ ORNAMENTAL PAINT' suitable for interior or exterior use at 6d. per pound (equivalent to 56s. per cwt.), and 'MINERAL, OR REFINED COAL TAR PAINT' for exterior use at 20s. per cwt., although Bennett suggested that coal tar invisible green would cost £3 per cwt. Bentley noted his product should be applied on an undercoat of lead colour, and Pincot recommended his colour particularly for 'field fences, ha ha fences, Park Railings or Inclosures', noting that it was 'agreeable when relieved by verdure and vegetation'.\* Such dull greens as those represented by the formulae for invisible green described above may be compared with the greens for gardens recommended by Continental authors discussed under Green, garden above, and more particularly with those for olive green below to which family they seem often to have belonged.



Green, Japan

\*273

In 1833 Bennett noted that Japan green 'for fenders, &c.' would cost 1s. 9d. per pound.\* This may have been related to the green japan used on furniture during the latter half of the eighteenth century, such as the two bergères 'Japan'd Green & White' supplied for the Drawing Room at David Garrick's house in the Adelphi in 1772, and bedroom furniture in his house at Hampton made about 1775 by Thomas Chippendale which was similarly treated.\* A sample taken from one of the bergères suggests that a copper resinate (samples 146-8) was used to produce the green, which was close in colour to Munsell reference 7.5GY6/4.\*

\*274

\*275

Green, marine

In 1841 Berger noted a commercial production formula for a colour of this name which contained 150 lb. emerald green,  $\frac{1}{2}$  lb. Antwerp Blue ('Deep Chinese Blue'), and 1 lb. 'Super Pale' chrome yellow, and was extended with 50 lb. barytes.\* (Cf. Green, sea below.)

\*276

Green, mineral

Although the pigment Scheele's green was often known as mineral green, the name seems also to have been used to describe a paint colour. In his patent of 1812, Parker, for example, described the way in which 1 pound of mineral green could be combined with 1 pound of a copper carbonate pigment,  $1\frac{1}{2}$  pounds of refiners' blue verditer, and 3 pounds of white lead to produce a bright mineral pea green;\* whilst in the same year Phillips indicated that light mineral green would cost from 3s. to 4s. 10d. per pound or 5s. if in a spirit medium.\*

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\*278

Green, Naples

In 1786 the walls of the Long Bow Room at Gordon Castle were painted Naples green, but whether this was made using Naples yellow (cf. samples 180-8) is not clear.\*

\*279

Green, olive

Writing before the invention of Prussian blue, D'Aviler indicated that olive colour was made from yellow ochre, white, and charcoal black;\* and a manuscript formula of about a century later for 'a green Paint proper for Rails &c' directed that the palest yellow ochre should be mixed with a small quantity of ivory black to produce a light olivé. For finer work Prussian blue could be substi-

\*280

\*281 tuted for the black to produce a light green colour,\*  
 but by the early nineteenth century such a colour was  
 also known as olive green (cf. samples 137-45, 162-70).  
 Thus Nicholson combined Prussian blue with Oxford ochre,  
 although elsewhere he suggested the use of light ochre,  
 \*282 Prussian blue, and a little black;\* whilst the author of  
 the Painter's... Pocket Manual also gave a formula in  
 \*283 which black was combined with a little blue and yellow.\*  
 In 1824 Berger noted a formula for a compound 'olive  
 green' pigment in which Prussian blue was formed in the  
 \*284 presence of yellow ochre;\* and a little later Vanherman  
 gave the following three formulae, the first two of which  
 were intended for his exterior 'IMPENETRABLE, OR ANTI-  
 CORROSIVE PAINT', and the last to be ground into oil after  
 \*285 drying.\*

i.	Whiting	112 pounds
	Bristol ochre	224
	Damp blue	112
	Raw Devonshire umber	14
	Crotia	112
ii.	Whiting	28 pounds
	Yellow ochre	28
	Crotia	14
	Prussian blue: 'till the green is to your mind'.	
iii.	Refiners' verditer, wet	1 pound
	Chrome yellow	2½
	Wet blue	10
	White lead	16

Vanherman's use of chrome yellow is interesting, and provides an indication of the importance this pigment was to assume later in the nineteenth century.

Watin's formula for olive green oil paint may be compared with the earlier ochre and black mixtures. Both he and Tingry, who drew heavily on his book, suggested the colour should be made from French yellow ochre mixed with a little  
 \*286 verdigris and lamp black;\* but although the second pigment

would impart a noticeable brightening of tone, it seems possible it was being used more as drier than for this purpose. It is likely that it was Tingry's book which prompted the suggestion made by the author of the Painter's... Pocket Manual for the combination of yellow pink with a little verdigris and lamp black.\* In distemper, Watin and Tingry recommended the use of French ochre with indigo and white.\*

Olive was clearly one of the staples of the house-painter's trade. It occurs in Emerton's price list of colours ready-mixed and ground in oil published in the 1730s at 8d. to 1s. per pound,\* and in several early nineteenth-century lists. In 1816 the London Patent Colour-Works were selling 'IMPENETRABLE PAINT IN LINSEED-OIL' of this colour for interior or exterior use at prices from 1s. per pound upwards, whilst in 1825 Lingard marketed his 'INVULNERABLE OIL PIANT' at 1s. 3d. to 2s. In 1833, however, Bennett indicated that olive green oil paint could be obtained for only 9d. per pound, although he also listed Spanish olive green at 2s. 6d. The most expensive prices were given by Phillips in 1812, who listed light olive green 'by mixture' at 2s., a darker variety at 2s. 5d., and a good olive green 'by mixture, with Oxford stone ochre' at no less than 3s. This wide range of prices perhaps reflects not only a differing depth of tint, but also the alternative ways of mixing the colour suggested in the formulae reviewed above. Other proprietary varieties noted include the 'ANTI-CORROSIVE' paint of Bentley which he sold in 1817 at a rate approximately equivalent to 8d. per pound against the cost price of 2d. claimed by Vanherman for his variety a few years later; whilst Bennett indicated that fine olive green 'anticorrosion' paint would cost 1s. 8d. The London Patent Colour-Works also marketed an olive green 'ANTIQUÉ ORNAMENTAL PAINT' for interior or exterior application in 1816 at 10d. per pound, the same price, curiously, as that at which Bennett priced dark olive coal tar paint. Both Bentley and Vanherman indicated that their products should be applied on a lead colour undercoat.\*

Together with the price of the paint, rates for its

application also varied and analysis is difficult. It is worth recording, however, that for exterior work at Osterley Park between 1772 and 1774 6d. per yard was paid for 2 coats of oil, 9d. for 3, and 1s. for 4; whilst internally an area 'of Stucco Round foot of Stairs 2ce done Olive Color' cost 8d. per yard, and another '5 oil on Stucco finished olive Green flatted' was priced at 1s. 7d.\* In the 1794 edition of the Builders Price-Book olive colour was priced at 9d. or 10d. per yard against common greens at 10d. to 1s. and fine deep greens at 1s. to 1s. 2d., illustrating clearly the relationship it enjoyed with other colours.\* Pincot indicated that it would cost 6d. per yard above the cost of common colours, and Phillips 5d.;\* but this seems a little high and both Laxton and Skyring indicated a figure of 3d. which seems more in line with the other evidence.\*

The earliest instance noted to date in which olive colour was used in an interior is in the painting account of 1729 for the Mansion House in York, where the Best Lodging Room and doors in the Great Room or Gallery were painted this colour.\* A few years later, between 1731 and 1734, it was extensively used in the Gibbs Building at King's College Cambridge;\* whilst Mrs. Powys recorded in 1760 that the Saloon at Eastbury, Dorset, was painted olive, and in 1781 that the Ballroom at Wanstead, Essex, had an 'olive and gold' wainscot.\* As already noted olive colour was used in the Staircase at Osterley, and also in the Vestibule between 1772 and 1774,\* whilst an item for olive green on stucco appears in the Somerset House accounts for 1780.\* Vert olive was one of the couleurs lucidoniques manufactured with a semi-gloss finish at Paris from 1803.

Green, parrot

\*301

Reynolds gave a formula for preparing parrot green for exterior use. It contained 5 pounds of white lead, 1 pound of verdigris, and 4 ounces of spruce ochre.\*

Green, patent

Phillips indicated that patent green would cost an extra 8d. per yard, Laxton gave a figure of 9d., and Skyring 5d.; all three authors writing in connection with

\*302 oil paint.\* In 1816 the London Patent Colour-Works were  
selling patent light green 'IMPENETRABLE PAINT IN LINSEED  
\*303 OIL' for interior or exterior use at 2s. per pound,\* and  
in 1833 Bennett suggested that patent grass green oil  
\*304 paint would cost 3s.\* It will be remembered that Berger  
was manufacturing a copper carbonate pigment called  
'patent green' from 1811 until at least 1831, but refer-  
ences are also encountered to 'Fowler's patent green'.  
In 1812, Phillips indicated it would cost 5s. 5d. per  
pound; whilst Butcher later suggested its employment for  
\*305 making green.\* It is not clear, however, whether the name  
was being given to a pigment, or a proprietary mixture for  
a particular paint colour.

#### Green, pea

Documents relating to Somerset House suggest the  
colour names pea green and green verditer (q.v. for  
details) were interchangeable, although the latter is,  
of course, properly the name of a pigment. Indeed, in  
distemper pea green seems generally to have been made  
using green verditer (samples 152-4). Phillips, for  
example, gave a price of 1ld. per square yard for 'pea  
\*306 green, with verditor' in 1812, rising to 1s. in 1821,\*  
and Laxton, who priced it at 1s. 2d., included the same  
\*307 item in 1818.\* Nicholson noted that pea green was made  
in distemper with French green, a name used by Berger for  
a related copper carbonate pigment at about the same date  
(sample 161), but also suggested the use of olympian green,  
the name of a variety of the pigment Scheele's green (cf.  
\*308 samples 198-200) also made by Berger.\* It seems clear,  
therefore, that the colour would have been fairly bright  
in tone, a conclusion borne out by the sample of pea green  
in Hay's book of 1846 (which is rather yellowish but cor-  
\*309 responds approximately to Munsell reference 10GY7/5)\* and  
by formulae for its preparation in oil. To make pea green  
for exterior purposes in this medium, Reynolds proposed  
the use of 1 pound of verdigris with 10 pounds of white  
lead, a combination which, as Tingry and the author of the  
Painter's... Pocket Manual pointed out, could be used to  
match the colour of green verditer in distemper (cf. sam-  
\*310 ples 128-30).\* Nicholson, on the other hand, suggested  
the use of 'mineral green' (probably Scheele's green) or

the mixture of Prussian blue and white with 'fine yellow', perhaps one of the organic yellows or patent yellow (cf. samples 171-9, 189-97), although neither was very satisfactory used in oil and use of verdigris seems likely to have been more common.\* Curiously, Vanherman suggested pea green was made from spruce ochre and Prussian blue (samples 162-70), but it seems likely this is a misprint for tea green (q.v.), and a much brighter colour than this combination would produce seems generally to have been implied by the name.\* Thus, by 1831, Berger, taking advantage of developments in pigment manufacture, made a permanent pea green using 128 lb. emerald green and 1 lb. 'Pale' chrome yellow extended with 128 lb. barytes, the qualification 'Permanent' no doubt reflecting a tendency to discolouration in earlier oil formulae.\*

Pea colour was sold by Emerton in the 1730s at between 8d. and 1s. per pound of paste;\* whilst in 1816 the London Patent Colour-Works sold pea green 'ANTIQUÉ ORNAMENTAL PAINT' at 1s. 6d., a second variety specifically for interior purposes costing 2s.\* In addition, the London colourman, Charles Hodgkin, sold pea green 'Anticorrosion' paint at 2s. 6d. per pound.\*

In 1759 Lady Caroline Fox had her Dressing Room painted pea green,\* and in 1768 Lady Shelburne agreed with Adam that the furniture in the Painted Antechamber at Shelburne House, Berkeley Square, London, should be pea green.\* In the 1770s many references to the colour are made in accounts, letters, and diaries, including, for example, a letter of 1770 from Chambers to Gilbert Meason, a Leith merchant, in which he gave it among a number of alternatives for his parlours,\* and another of 1771 to Robert Gregory concerning his house in Berners Street where he again proposed to paint the Parlour in pea green with white mouldings and ornaments.\* In the same year, Mrs. Powys noted that the stucco in the Breakfast Parlour at Fawley Court, Buckinghamshire, was pea green with a gilt border, and James Adam estimated for its use in the Assembly Room at the Shire Hall, Hertford;\* whilst by 1772 the Gallery at Osterley was apparently painted this colour.\* In 1775 Chambers

- recommended the use of 'pea green in Oil' for an unidentified room belonging to the Earl of Charlemont,\* and in 1780 the colour was used as part of his scheme for the Ante-room shared by the Society of Antiquaries and Royal Society, and the Meeting Room of the latter body at Somerset House.\* It was also proposed for picking out enriched mouldings in a note on a drawing by Chambers which is now at Newby Hall, Yorkshire.\* Altogether, therefore, it appears to have been an extremely fashionable and popular colour.
- \*323
- \*324
- \*325
- Green, Persian
- In 1831 Berger was making a colour of this name by combining his copper carbonate pigment, French green, with chrome yellow.\*
- \*326
- Green, pistachio
- Vert pistache was one of the couleurs lucidoniques available with a gloss finish which were manufactured in Paris from 1803.\*
- \*327
- Green, pomona
- Pomona green was defined by Hay as 'the popular name of all full-toned greens in which yellow predominates. This of course means the colour of an apple, and consequently admits of ample latitude as to variety of tone'.\* Watin indicated that vert pomme was made from blue, distilled verdigris, and more yellow, and the colour was one of the couleurs lucidoniques available in a matt finish which were made at Paris from 1803.\* Bennet noted that pomona green oil paint would cost 1s. 6d. per pound.\*
- \*328
- \*329
- \*330
- Green, quaker
- In 1840 Berger noted a manufacturing formula for quaker green, which contained 1 cwt. 1 qr. 21 lb. 'Com<sup>n</sup> Orange'. chrome yellow, 2 cwt. 2 qrs. blue black, and 2 cwt. barytes.\* Quaker tints in general are discussed below.
- \*331
- Green, rainbow
- Rainbow green was the most expensive of the green oil colours manufactured by Crease in 1808 and retailed at 3s. 6d. per pound.\*
- \*332
- Green, rich
- Rich green appears in the list of 'ANTIQUÉ ORNAMENTAL PAINTS' manufactured for interior and exterior use by the London Patent Colour-Works in 1816 and was sold at 1s. 8d. per pound.\*
- \*333

Green, Roman                      Bennett indicated that Roman green oil paint would  
\*334                                  cost 1s. 9d. per pound.\*

Green, royal grass                See under Green, grass above.

Green, sage                        Nicholson indicated that sage green oil paint was  
\*335                                  made from white, Prussian blue, and 'fine yellow',\* the  
   latter perhaps implying the use of patent yellow or one  
   of the organic pigments (samples 171-9, 189-97). Neither  
   would have been particularly satisfactory, and Vanherman's  
   suggestion seems much more sound. He used spruce ochre  
   with Prussian blue and white, and noted that black could  
   be used instead of the blue or raw umber in place of the  
   ochre to produce further varieties (cf. samples 137-45,  
\*336                                  162-70, 211-13).\* Hay's sample of sage green corresponds  
\*337                                  approximately with Munsell reference 10GY7/2.\*

Green, Sardinian                 Crease listed light and deep Sardinian greens in his  
   range of proprietary oil paints and sold them at 2s. and  
\*338                                  1s. 8d. per pound respectively.\*

Green, Saxon                      Watin suggested that vert Saxe should be made from  
   white, distilled verdigris, yellow, and a preponderance  
\*339                                  of blue;\* whilst Vanherman gave the following formula for  
   an oil paint:

Refiners verditer, wet	1 pound
Chrome yellow, wet	2 $\frac{3}{4}$
Wet blue	24
White lead	16.

\*340                                  After screening and drying the mixture was ground into  
\*341                                  linseed oil.\* Bennett indicated that Saxon green oil  
   paint would cost 2s. per pound.\*

Green, sea                         To prepare vert d'eau in distemper Watin noted two  
   formulae. The first, transcribed by Tingry and translated  
   into English as sea green, called for the combination of  
   ceruse and 'vert de montagne'; but Watin also recommended  
   a mixture of ceruse, blue verditer, and pink as less liable  
   to change colour with time and more lively in tone (cf.



\*342 samples 152-4, 158-60).\* For vert de mer he suggested  
 \*343 the use of ceruse with Prussian blue and pink,\* whilst  
 Nicholson proposed a mixture of white with Prussian blue  
 and 'fine yellow' for sea green in oil (cf. samples 171-9,  
 \*344 189-97).\* Tingry, however, did not mention Prussian blue,  
 and merely listed mountain green, blue verditer, and Dutch  
 pink, together with verdigris, as being used in mixing  
 \*345 sea green.\* The last of these pigments had been reserved  
 \*346 by Watin for mixing vert d'eau in varnish,\* but Reynolds  
 indicated that a sea green oil paint for interior purposes  
 should be made from 1 pint of white lead, 1 tablespoonful  
 \*347 of verdigris, and 1 tablespoonful of spruce ochre.\* Vert  
d'eau was one of the couleurs lucidoniques manufactured at  
 \*348 Paris from 1803 and was available in a matt finish.\*

Green, Spanish olive      See above under Green, olive.

Green, stucco              Bennett noted that stucco green oil paint would cost  
 \*349 2s. per pound.\*

Green, superior          Bennett noted that superior green oil paint would  
 \*350 cost 1s. 6d. per pound.\*

Green, tea                Vanherman mentioned that spruce ochre was used in  
 mixing tea green, almost certainly with Prussian blue  
 (samples 162-70) since it seems most likely that his later  
 reference to the mixing of pea green by this means was a  
 \*351 misprint and that tea green was intended.\* In 1823 it was  
 proposed to paint the walls of the Map Gallery at Dunham  
 \*352 Massey tea green in oil.\*

Green, verdigris        The term verdigris green seems to have been used  
 generically to cover the whole family of greens made using  
 the pigment (samples 128-36, 146-8), and would thus have  
 included grass green and willow green (q.v.). Pincot  
 observed that he had known 7s. per pound given for verdigris  
 \*353 green,\* whilst Phillips priced light verdigris 'mixed' at  
 3s. and 4s. 3d. He also suggested that four coats of oil  
 finished with verdigris green would cost 2s. 6d. per yard  
 in 1812, a rate modified in 1821 to 2s. 3d. and probably  
 copied from an early nineteenth-century edition of the

- \*354 Builders Price-Book.\* In the 1810 and 1813 editions of  
this a price of 2s. 6d. per yard for 'Four times in oil  
\*355 [and flatted green] with verdigrease green' is given.\*

Green, verditer

- Green verditer (samples 152-4) occurs several times as a colour name in the 1780 accounts for Somerset House and formed part of the decorative scheme in the Library, Exhibition Room, and Ante-chamber to the Exhibition Room of the Royal Academy. It was used also in the cove of the common Ante-room shared by the Royal Society and the Society of Antiquaries, where, most significantly, it was described in the Deed of Transfer the following year as pea green (q.v.). The rates allowed seem generally to have been for four coats on stucco 'finished Green Verditer' 1s. 2d., five coats finished in the same way costing 1s. 6d.\*
- \*356 In 1782 the walls of the Duchess's Bedroom at Gordon Castle were painted verditer green,\* whilst in about 1811 Pincot
- \*357 was selling a green verditer 'WATER COLOUR' at 1s. 6d. per pound.\*
- \*358 Although, as will be remembered, green verditer is not suited to use in oil, Tingry remarked that its place in this medium could be taken by 2 or 3 parts of verdigris with 1 of white lead, a suggestion reiterated by the author of the Painter's... Pocket Manual (cf. samples
- \*359 128-30).\* At Somerset House, therefore, where the accounts suggest oil was employed, the colour green verditer could have been produced in oil by this means, unless a coat of distemper was applied to a series of oil undercoats.

Green, water

See Green, sea above.

Green, Waterloo grass

See Green, grass above.

Green, willow

- John Smith recommended the use of verdigris alone to produce willow green, adding that the addition of white
- \*360 would make a light willow green (samples 128-30).\* The latter suggestion was copied a century and a half later by Nicholson and the author of the Painter's... Pocket
- \*361 Manual.\* Willow green was defined by the late seventeenth-
- \*362 century writer Holme as a 'whitish Green'.\*

Grey

- Methods for mixing greys have been reviewed above and specific varieties are discussed below. The term was, however, used without qualification, and in such cases it is often difficult to assess the family to which the colour belongs. Thus Nicholson indicated that ceruse, Prussian blue, ivory black, and lake were used in mixing greys,\* although at a much earlier date D'Aviler had mentioned black pigments alone, listing bone black, charcoal black, and lamp black (cf. samples 8, 9, 10, 12, 21, 24, 27, 28-36).\*
- \*363
- \*364
- \*365
- \*366
- \*367
- Certainly by the second half of the eighteenth century it seems likely that the unqualified term could represent one of the finer varieties, in particular French grey or a derivative such as the pale grey distemper Whittock suggested should be made using a small quantity of Venetian red with Prussian blue or indigo and whiting.\* (This may be compared with Nicholson's formula for pearl colour - q.v.) On the other hand, this cannot always be assumed; and instances where reference is simply made to grey, such as the occasional manuscript notes on the Adam drawings at the Soane Museum or in the accounts for Somerset House, must be approached with an open mind.\* In the latter, however, the rates for both grey and French grey (q.v.) are identical suggesting at least that the former colour was one of the more expensive varieties. Again, early nineteenth-century editions of the Builders Price-Book list grey under 'RICH COLOURS IN OIL' and in the equivalent list for 'RICH COLOURS FLATED' qualify it as French grey. The price per yard for 'Twice in oil grey' was 10d., three times 1s., and four times 1s. 4d.; whilst 'Twice in oil and flated French grey' was 1s. 5d., three times 1s. 8d., and four times 1s. 11d. In the case of distemper, 'Wash stop and grey' would, it was indicated, cost 5d. per yard, a price revised to 7d. by Laxton a few years later.\*

Grey, fine

- \*368
- In distemper, Nicholson indicated that fine greys were made from white and refiners verditer (sample 157 - cf. Grey, inferior below).\*

Grey, flaxen

Watin indicated that gris de lin was made in oil or distemper from ceruse, lake, and a very little Prussian

- \*369 blue, a formula repeated by Tingry for flaxen grey.\*
- The author of the Painter's... Pocket Manual, however, indicated the use of white lead, Prussian blue, and a
- \*370 small quantity of lake,\* making the colour more akin to French grey (q.v.) as described by Vanherman (cf. samples 28-36).

Grey, French

The most explicit directions for mixing French grey were given by Vanherman in connection with his 'AROMATIC PAINT' to which, he directed, one should,

'put as much ground Prussian blue as shall make it to your mind, then add as much lake, or rose pink, as will bestow on it a faint bloom.'

- \*371 The colour should, he noted, 'neither be dark not yet too light, but a middle tint' (cf. samples 28-36).\* This formula is, of course, close to that given by Watin and Tingry for flaxen grey (q.v.), although this seems to have been more pinkish in tone, and for French grey Butcher regarded the addition of red pigment (he recommended lake or vermilion) as an improvement 'to make a more beautiful and pleasant colour' than that provided by blue alone (cf. sample 21).\*
- \*372 No doubt, therefore, the term might also be applied to the other greys Watin described such as gris argentin and gris perle (silver grey and pearl grey - q.v.), which contained blue without the red. Butcher indicated
- \*373 this could either be Prussian blue or blue verditer,\* but the latter (sample 157) was probably used more generally in distemper than oil. Watin noted his formulae could be used in either medium, but evidence that verditer was used in distemper is provided by two early nineteenth-century price-lists, those of Cook and Skyring, in which there are items for French grey 'with verditer' at 10d. and 9d. per
- \*374 yard respectively.\* The latter indicated that an ordinary variety would cost 5d. but did not state how it differed, and it is possible this was an inaccuracy or uncritical acceptance from an earlier text or edition. The 1794 edition of the Builders Price-Book suggested French grey distemper would cost 3d. per yard, a price reported by Phillips to have been current from 1760 to 1790, rising to

\*375 4½d. between 1790 and 1803, and 9d. in 1812, before falling back to 6d. in 1821.\*

Turning to look at prices for French grey in oil, 10d. per yard was charged between 1772 and 1774 for '3 oil on Stucco finished french Gray', and 1s. 4d. per yard for 'Stucco Walls 5 oil flatt french Gray' in the Gardener's House at Osterley Park.\* The latter is matched by the price for '5 times french grey [to Stucco]' at Somerset House in 1787, where in 1789 and 1790 1s. per yard was paid for 'Stucco 4 times French Grey' and '4 times in oil on [Stucco] flatted french Grey'.\* This is the same rate as that suggested in the 1787 edition of the Builders Price-Book for flatted 'French greys four times in oil', although this was modified to 10d. in 1794.\* In the 1810 and 1813 editions the comparable figure was 1s. 11d., representing together with those of 1s. 5d. for two and 1s. 8d. for three times in oil an extra of 5d. per yard over the cost of dead white, the figure given by Phillips.\* Pincot, however, suggested the slightly higher difference of 6d., but Laxton proposed 3d., and in 1831 Skyring gave 2d. which seems rather low.\* In conclusion it may be noted that a quantity of 'Dead French Gray' was supplied at Dyrham Park in 1781 at a cost of 1s. per pound, whilst Pincot marketed his French grey 'WATER COLOUR' at 1s. 4d. per pound.\*

In 1771 Mrs. Powys described the stucco in the Hall at Fawley Court, Buckinghamshire, as painted French grey,\* and the following year the walls of the Dining Room at Gordon Castle were painted this colour.\* Besides the item for the Gardener's House already mentioned, French grey was used on the shutter framing and panels and on the grounds of the friezes above the doors in the Hall at Osterley in the work done between 1772 and 1774, and also for the panel grounds in the soffit of the portico, providing an interesting exception to the general rule that common colours alone were used out of doors. In 1787 further items in the Hall, including the ceilings and plinth, were painted this tint.\* In 1775 Adam proposed its use for the ceiling of the Oval Room at Great Saxham House, Suffolk,\* and further instances of its intended

employment are found in connection with a staircase in  
\*386 Arlington Street, London, in the same year,\* and for the  
\*387 walls of the Best Staircase at Dunham Massey in 1821.\*  
Items in the accounts for Somerset House, where Chambers  
used French grey in the ceiling of the Ante-room shared  
by the Royal Society and Society of Antiquaries in 1780,  
have already been noted.

Grey, inferior

\*388 In distinction to fine greys (q.v.) Nicholson  
indicated that inferior greys were made in distemper  
using blue black or bone black and indigo.\* Such a com-  
bination is similar to that which Watin suggested for  
gris argentin (discussed under Grey, silver below) and may  
be compared with that for his gris ordinaire in oil or dis-  
temper which contained white and charcoal black alone  
(see Grey, ordinary below).

Grey, iron

See Iron colour below.

Grey, light

\*389 Tingry indicated that light grey was much used for  
rooms, especially those exposed to strong sunlight.\* He  
suggested the use of white lead and lamp black in oil  
(sample 8), a formula probably copied by the author of the  
\*390 Painter's... Pocket Manual.\* Soane intended the use of  
light grey on the ceiling of the Staircase at Pitzhanger  
\*391 Manor, Ealing, in 1802.\*

Grey, mouse

\*392 Gris souris was one of the couleurs lucidoniques  
manufactured at Paris from 1803 with a matt finish.\*

Grey, ordinary

\*393 Watin indicated that gris ordinaire was made in oil  
or distemper by combining charcoal black with white (sam-  
ple 10), a formula which may be compared with those for  
inferior grey given above.\*

Grey, Paris

\*394 In writing to Gilbert Meason, a Leith merchant, in  
1770 Chambers recommended the use of Paris grey amongst a  
number of alternatives for painting his parlours.\* It  
seems likely that this represented one of the French greys  
(q.v.).

Grey, pearl

See Pearl colour below.

Grey, silver

Watin indicated that gris argentin was made in oil or distemper from white and indigo or 'noir de composition' (the charcoal made from the residue from the manufacture of Prussian blue) or vine black (sample 10) in very small quantities.\* Tingry, on the other hand, observed that pearl grey (q.v.) made from white and blue (or blue and black - cf. samples 21, 24, 27) was also called silver grey;\* whilst the author of the Painter's... Pocket Manual suggested silver grey should be made from white lead, indigo, and a very small portion of black.\* In 1786 the panels of the windows and dado in the Drawing Room at Gordon Castle were flatted silver grey with white mouldings.\*

Grey, slate

See slate colour below.

Hazel nut

Noisette claire ou foncée appeared in the range of couleurs lucidoniques manufactured at Paris from 1803 with a matt finish.\*

Hydrangea

Hortensia was one of the couleurs lucidoniques manufactured at Paris from 1803 with a matt finish.\*

Ice colour

Reynolds gave the following formula for ice colour oil paint intended for interior use: 'To one pint of white lead, add one teaspoonfull Rosin; one teaspoonfull Verdigris; and half a teaspoonfull of Lamp-black'. As usual the pigments were combined in paste form.\*

Iron colour

Bullet indicated the couleur de fer for ironwork was made from ceruse and lamp black (sample 12).\* In 1694, amongst other exterior items, four doors and two arbours at Dyrham Park were painted iron colour at a cost of 9d. per yard.\* Couleur de fer was one of the couleurs lucidoniques manufactured at Paris from 1803 with a glossy finish.\*

Jonquil

Tingry, copying Watin's formula, noted that jonquil was mixed from white lead and Dutch pink, adding that it

\*405 was used only in distemper or occasionally in varnish.\*  
The author of the Painter's... Pocket Manual also repeated  
the suggestion, but remarked it was 'only proper in dis-  
\*406 temper' (sample 84).\*

Lake

Although properly the name for a type of pigment,  
generally red (cf. sample 58), and used in this sense by  
\*407 John Smith,\* Laxton mentioned that lake colours would  
\*408 cost an extra 9d. per yard over the cost of common colours.\*  
Laque carminée also appears amongst the list of couleurs  
lucidoniques manufactured at Paris from 1803 in a matt  
\*409 finish.\*

Lavender colour

In interesting contrast to the method for making  
French grey (q.v.), in which the blue was added first,  
Vanherman indicated that lavender colour was made by  
mixing 'lake, or rose pink, with a good portion of white,  
to bring it to a peach-blossom colour; you then add a  
little Prussian blue, sufficient to give it a cast' (cf.  
samples 37-45). It was, he noted, an elegant tint for a  
drawing room, and would add an illusion of height to ceil-  
\*410 ings on account of its 'retiring appearance'.\* Light  
lavender tint was used in the ground of the cornice and  
\*411 architrave in the Circular Room at Carlton House.\*

Laylock

See under Lilac below.

Lead colour

Mentioned in late eighteenth-century editions of the  
Builders Price-Book and by Laxton as one of the common  
colours, and appearing in Emerton's range of the 1730s  
in the cheapest range of colours at 4d. or 5d. per pound,  
lead colour was often mentioned by authors throughout the  
\*412 period being examined.\* By the early nineteenth century  
it seems clear it was made by a simple mixture of white  
and black (usually lamp black - sample 12), and was  
therefore a neutral grey similar to ash colour (q.v.)  
as defined by John Smith in the late seventeenth century,  
or iron colour discussed above. Formulae employing lamp  
black were given by Pincot (who included it as one of the  
five colours used for finishing exterior work and advocated  
it as an undercoat for olive, chocolate, and invisible



\*413 green), Butcher, Nicholson, and Tingry's later editor.\*  
Vanherman, however, used mineral black in his 'IMPENETRABLE,  
\*414 OR ANTI-CORROSIVE PAINT', giving the following formulae:\*

1.	Whiting	224 pounds
	Dry white lead	224
	Mineral black	56
	Crotia	112
2.	Whiting	56 pounds
	Dry white lead	56
	Mineral black	28
	Crotia	14.

Earlier, however, John Smith had advocated a mixture of  
white with indigo, which would have produced a rather  
\*415 bluish grey (sample 14);\* and his formula was repeated  
by Butcher, Nicholson, and the author of the Painter's...  
Pocket Manual, all of whom copied, often uncritically, from  
\*416 his by then obsolete work.\* In the late seventeenth cen-  
tury therefore, lead colour probably reflected more accur-  
ately the bluish tinge of metallic lead, although indigo  
was a comparatively expensive pigment and it is possible  
black was often substituted or mixed with the indigo in  
the way mentioned by the author of the Painter's... Pocket  
Manual, who recommended this as a way of mixing dark lead  
\*417 colour.\*

Primatt mentioned that lead colour would cost 9d. or  
\*418 10d. per yard in oil,\* whilst a century and a half later  
Crease and Lingard sold their lead colour oil paints at  
\*419 42s. per cwt.,\* and the London Patent Colour-Works theirs  
\*420 at 52s. and 56s.\* Vanherman noted his 'ANTI-CORROSIVE'  
paint would cost the equivalent of 18s. 8d. per cwt. to  
manufacture; Bentley sold his at 46s. per cwt.; and  
\*421 Hodgkin his product at the equivalent of 60s. 6d.\* The  
latter price was repeated by Bennett, who also mentioned  
a lead colour coal-tar paint, indicating it was available  
\*422 at 52s. per cwt.\*. Lead colour was used for painting two  
\*423 barrels at Montagu House, London, in 1704,\* and in the  
back stairs of the east wing of Somerset House (probably

\*424 on the ironwork) in 1780;\* whilst a very light lead  
colour is mentioned in an alternative scheme for a ceiling on the reverse of an undated design by George Dance  
\*425 the Younger.\*

Lemon colour

Lemon colour appears in the most expensive category  
\*426 of Emerton's ready-mixed oil-paints at 1s. per pound,\*  
whilst jaune citron was one of the couleurs lucidoniques  
available in a glossy finish which were manufactured in  
\*427 Paris from 1803.\* To make jaune citron Watin advocated  
the use of more or less yellow and red orpiment (samples  
87, 92), adding that the mixture was generally only used  
in oil. As a substitute avoiding the use of these extremely  
unpleasant pigments he proposed ceruse with an organic  
yellow or Naples yellow (cf. samples 83, 84, 88), a method  
repeated by Tingry for making lemon yellow in distemper  
and varnish. The mixture of yellow and red orpiment was,  
\*428 he indicated, the way in which the colour was made of old;\*  
but both were repeated by the author of the Painter's...  
Pocket Manual, who again stated that pink and Naples  
\*429 yellow mixtures were used only in distemper.\*

Late eighteenth-century editions of the Builders  
Price-Book suggest a price of 10d. to 1s. per yard for  
lemon colour in oil. 'Distemper on stucco with enriched  
mouldings, grounds... lemon... and the mouldings white',  
\*430 however, would cost 6d. per yard.\* For lemon colour dis-  
temper Laxton indicated a rate of 6d. per yard, and  
\*431 Skyring 5d.\* 'Limon Colour' is mentioned on a drawing by  
\*432 Chambers now at Newby Hall, Yorkshire;\* and he used lemon  
colour in the oval surrounding the central area of the  
ceiling of the Royal Academy Exhibition Room at Somerset  
\*433 +434 House.\* It was also referred to by Hay in the late 1820s.+

Lilac

Watin suggested that lilas should be made by combining  
\*435 lake, carmine, and a little blue (cf. samples 37-45).\* The  
colour appears in the list of couleurs lucidoniques with a  
\*436 matt finish which were manufactured in Paris from 1803,\*  
and Laxton indicated that lilac oil paint would cost 5d.  
\*437 per yard above the price for common colours.\* In late  
eighteenth-century England it seems often to have been

called laylock, since this term was used in the Somerset  
\*438 House accounts\* to describe the paint applied to parts of  
the ceiling of the meeting room of the Royal Society  
itemised the following year in the Deed of Transfer as  
\*439 'light purple'.\* Laylock was also used on the ceiling  
of the Antique Academy of the Royal Academy in the same  
\*440 building,\* and laylock appears as a manuscript note on  
drawings by Adam (dated 1768 and 1770) and George Dance  
the Younger, the latter noting that a faint laylock was  
\*441 to be used.\* In 1819 Pyne recorded the 'small stiles'  
surrounding the door panels in the Throne Room at Carlton  
\*442 House were painted lilac.\*

#### Liver colour

The wainscot in the Marble Parlour at Wimbledon  
House was described as varnished liver colour in the  
\*443 inventory of 1649,\* and Pratt observed that burnt umber  
\*444 was almost of this hue.\*

#### Mahogany colour

No formulae for mahogany colour have been encountered  
in the course of research, although methods for imitation  
of the timber have been reviewed above. It is clear, how-  
ever, that as with similar colour names, graining was  
quite often not implied, and Emerton sold a mahogany  
\*445 colour paint at 6d. per pound in the 1730s.\* Eighteenth-  
century editions of the Builders Price-Book indicated that  
two coats would cost 4d. per square yard, putting it firmly  
\*446 in the realm of prices for common colours;\* but Phillips  
gave prices for two qualities in 1821, a good mahogany  
colour costing 3s. per pound, and a better, brighter  
variety 5s., rates well above those for the majority of  
\*447 browns he listed.\* In the early 1730s mahogany colour  
had been used on doors in several of the sets in the Gibbs  
Building at King's College, Cambridge, including in one  
\*448 instance the shutters also;\* and was applied too to the  
stair rail at a house associated with the Osterley Park  
\*449 estate between 1772 and 1774.\* Acajou was one of the  
couleurs lucidioniques manufactured at Paris from 1803  
\*450 with a semi-gloss finish.\*

#### Marigold

Tingry indicated that marigold was made using slightly  
\*451 calcined orpiment. (cf. sample 92).\*

- Morocco  
 \*452 Maroquin was one of the range of couleurs lucidoniques manufactured at Paris from 1803 with a semi-gloss finish.\*
- Mouse colour  
 See Grey, mouse above.
- Myrtle  
 \*453 The mid-nineteenth-century writer Hay illustrated a sample of myrtle which approximates in colour to Munsell reference 5G4/4.\*
- Oak colour  
 \*454 John Smith indicated that a colour resembling new oak timber was made from umber and white,\* but Watin included ochres in his formulation. Bois de chêne was, he suggested, to be mixed in oil or distemper using  $\frac{1}{4}$  part of ceruse combined with  $\frac{1}{4}$  part of a compound made from 'ochre de rue', umber, and yellow ochre of Berry. By varying the proportions of the last three pigments, the colour could be adjusted to the tint required (cf. samples \*455 122-4, 125, 126).\* Tingry and the author of the Painter's... Pocket Manual repeated his formula.\* \*456 Wainscot colour was presumably more or less the same as oak colour, but the only information on mixing is given by Nicholson, who suggested it contained no white lead and gave no further \*457 details.\*
- Prices encountered for wainscot colour during the late seventeenth century vary widely, probably depending on the number of coats applied in any given instance. Only in the account of 1705 for Ditton, where three are specified at a cost of 9d. per yard, is a number mentioned.\* \*458 Neve merely remarked that wainscot colour on new work would \*459 cost 8d. per yard and on old work 7d.,\* but it seems likely that new work would have required three coats including the primer, and old work probably two with an allowance for preparation. Figures of 8d. and 9d. were quoted in \*460 the tenders for Greenwich Hospital about 1696;\* 8d. was \*461 charged at Montagu House, London, in 1706;\* and 10d. was \*462 paid at Kensington Palace a few years earlier.\* Both here and at Dyrham in 1694, however, other items are priced at \*463 1s. 2d. suggesting that more coats were involved;\* whilst for painting the doorcase on the best staircase in the Mansion House, York, oak colour in 1729 6d. per yard was

paid, a rate suggesting this may have been a redecoration  
\*464 job.\*

Emerton sold his wainscot or oak colour oil paint at  
\*465 4d. or 5d. per pound in the 1730s\* showing that, as indi-  
cated by the author of the Builders Price-Book later in  
\*466 the century, it was one of the common colours;\* and in  
the early nineteenth-century Bentley sold oak colour  
'ANTI-CORROSIVE PAINT' for exterior purposes at 46s. per  
\*467 cwt.\*

Besides its use on wainscot which the majority of the  
accounts already noted seem to indicate, wainscot and oak  
colours were often used on doors. At Dyrham, for example,  
the doors of the Hall and Pavilion, and sashes of the for-  
\*468 mer were painted wainscot colour in 1694;\* whilst at  
Montagu House, London, the hinges and bars of five windows  
\*469 were similarly coloured in 1705.\* In addition to the other  
instances of its use mentioned in connection with the re-  
view of prices above, an intention was expressed to paint  
the Great Stairs at St. James's Palace wainscot colour in  
\*470 1723;\* and the first-floor Lodging Room at the Mansion  
\*471 House, York was painted oak colour in 1729.\* Almost a  
century later, in 1821 it was decided to paint the wainscot  
in the Hall at Dunham Massey rather light oak, in 1823 the  
woodwork of five privies in the garden oak, and in 1829  
\*472 the wainscot of the Billiard Room new oak colour.\*

Olive colour

See Green, olive above.

Orange

John Smith suggested that yellow ochre should be mixed  
\*473 with red lead to make an orange colour oil paint.\* His  
brick colour (q.v.), on the other hand, contained these  
pigments with white, as indeed did Reynolds's formula for  
an orange colour for exterior purposes (cf. samples 96-104).  
The latter called for the addition of 1 pound of red lead  
to 10 pounds of a straw colour made from 10 pounds of white  
lead and 1 pound of spruce or English ochre, the constitu-  
\*474 ents being mixed dry before being ground into the oil.\*  
Smith's formula was repeated by Nicholson and the author  
of the Painter's... Pocket Manual and was probably in

\*475 common use,\* but Vanherman noted in connection with his  
'AROMATIC PAINT' that vermilion and yellow should be com-  
bined to make orange, a rather more expensive method  
which probably offered few advantages. In addition, he  
also suggested that brilliant oranges of various grada-  
\*476 tions could be made from lake with chrome yellow.\*  
Although no distemper formulae have been noted, it is  
clear from the priced items reviewed below that orange  
was often prepared in this medium, and it will be recalled  
that both yellow ochre and red lead were contained in the  
list of pigments the plasterers were permitted to use under  
\*477 the 1603 Act.\* There seems to be no reason, therefore, why  
the same formula as that for oil paint should not have been  
used; whilst to produce a duller and cheaper colour, red  
ochre might be substituted for red lead (samples 93-5).

In the 1730s Emerton sold his orange colour oil paint  
at 1s. per pound, and in 1821 Phillips noted that orange  
colour 'by mixture' would cost 1s. 2d., the same price  
\*478 being charged for a reddish variety.\* Orange was also  
available in the range of couleurs lucidoniques manufact-  
\*479 ured at Paris from 1803 with a glossy finish.\* In oil,  
the compiler of the late eighteenth-century editions of  
the Builders Price-Book suggested that orange would cost  
from 10d. to 1s. per yard; whilst in distemper the same  
\*480 colour on stucco would cost 3d.\* Phillips showed how the  
price of the latter had risen to 4½d. by 1803, rose further  
\*481 to 9d. in 1812, and fell back to 6d. in 1821.\* By 1831  
\*482 Skyring indicated it stood at 5d.\*

The way in which orange was used in interiors is un-  
clear, and it is possible the items for distemper of this  
colour on stucco were intended for exteriors. It seems  
doubtful that it can always have been a very popular col-  
our on large areas of wall in rooms, and the only eight-  
eenth-century reference to its use encountered to date is  
a note on Adam's design dated 1778 for the ceiling of the  
Lady's Dressing Room at Mellerstain, Berwickshire (prob-  
ably painted in 'Etruscan' colours) where it was to be  
\*483 applied to the central flower.\* Later, however, both  
Whittock and Vanherman used orange in colour schemes

\*484 reflecting contemporary ideals of colour harmony.\*

Party colours

Laxton defined the term party colours as being applied 'where the framing is of one colour, and the pannels another'.\* It was used in the 1755 account for Norfolk House, where many interior items including ceilings, shutter panels, window soffits and architraves, and an entablature were picked in with 'Party colours'.\* In 1831, Skyring indicated this treatment would cost an extra 3d. per square yard.\*

Pea colour

See Green, pea above.

Peach colour

In 1688 Holme indicated that peach colour was 'a more light bright coloured Violet';\* and in the early nineteenth century Nicholson suggested peach should be mixed using lake, white, and Chinese vermilion (samples 49-54).\* Laxton noted that in oil it would cost 5d. per square yard more than common colours, but Skyring quoted 2d. a rate which suggests it was often light in tone and much the same as peach blossom colour (q.v.).\*

Peach-blossom colour

In giving directions for the mixing of lavender colour, Vanherman indicated that the first stage was to prepare a peach-blossom colour by combining lake or rose pink with a good portion of white (cf. samples 46-8).\* This suggestion may be compared with that made by Nicholson for making peach colour (q.v.) which may have been identical in concept. A few years later, Hay illustrated a sample of peach blossom which corresponds approximately with Munsell reference 2.5RP7/5.\* George Smith suggested the use of peach blossom on the walls of a room reflecting a 'very chaste style of decoration';\* whilst Pyne recorded that the areas of wall surrounding the velvet panels, the doors, dado, and skirting in the Blue Velvet Room at Carlton House were painted in a light peach-blossom.\*

Pearl colour

French formulae for pearl colour suggest it was seen as having a bluish cast. In distemper, Bullet suggested that indigo should be combined with Spanish white, and in oil that as much smalt as necessary to produce the colour

\*495 required should be added to white lead (sample 18).\*

The latter combination has been found on a mid-seventeenth-century doorcase now in the Banqueting Hall at Tamworth Castle, Staffordshire; and in one of the lower layers on the late seventeenth-century wainscot in the Marble Hall at Petworth, Sussex.\*

\*496 By the second half of the eighteenth century, these methods seem to have been superseded, and in both oil and distemper Watin advocated the use of Prussian blue with white, suggesting also the addition of the charcoal pigments 'noir de composition' or vine black (samples 21, 24, 27).\*

\*497 Tingry too indicated that white was mixed with blue or a blue-black mixture.\*

\*498 The author of the Painter's... Pocket Manual, however, returned to the use of indigo and white, with or without the addition of a small proportion of black.\*

\*499 This formula, it will be remembered, Watin had reserved for silver grey (q.v.) but Tingry had since remarked this was synonymous with pearl grey. In contrast to all these formulae, the American author Reynolds seems to have had a greenish tinge in mind, directing that for interior purposes pearl grey should be made from 1 pint of white lead, a teaspoonful of Prussian blue, and a similar quantity of spruce ochre.\*

\*500 Nicholson too gave it a variant tint, suggesting a mixture of black, blue, white, and a little Indian red, a combination which would have resulted in a colour rather similar to French grey (q.v.), but, perhaps, lacking its refinement.\*

\*501

Emerton sold pearl colour oil paint in the 1730s at his cheapest rate of 4d. or 5d. per pound,\* and in the Builder's Price-Book it was indicated it was one of the common colours.\*

\*502 It was also available in the range of couleurs lucidoniques manufactured at Paris from 1803 in a matt finish.\*

\*503 In 1706 an appreciable yardage in an apartment at Montagu House, London, was painted pearl colour at 9d. per square yard, suggesting it was applied to the wainscot;\* and it was also used in the early 1730s in eleven of the sets in the Gibbs Building at King's College, Cambridge, no doubt for the same purpose.\*

\*504 In 1759 Chambers mentioned its use on ceilings, and in 1770 wrote to one of his clients suggesting it could be used among a number of alternatives for painting his Parlours if he

\*505

\*506



\*507 intended them to be 'very heat'.\* A few years later it  
was used in the Hall and Staircase together with rooms  
on the 'bedchamber story' of a house attached to the  
\*508 Osterley Park estate.\*

Pink

Although one of the most commonly encountered colour  
names, only one specific formula for mixing pink, that  
for a delicate pink distemper made, Whittock suggested,  
\*509 from lake and white (cf. samples 46-8), has been noted.\*  
Not to be confused with the organic yellow pigment, pink,  
the term seems to have been in use in its modern sense  
of rose pink by the beginning of the eighteenth century,  
and Emerton was selling pink oil paint at 1s. per pound  
\*510 in the 1730s.\* The price suggests, of course, that it  
contained one or both of the comparatively expensive tint-  
ing pigments, lake and vermilion, and the colour was prob-  
ably mixed using these in the way discussed in connection  
with general method for mixing pink and bright reds above.  
Late eighteenth-century editions of the Builders Price-Book  
indicate pink would cost 10d. to 1s. per yard in oil, and  
mention also its use in distemper 'on stucco... and the  
\*511 mouldings white' at 6d.\*

The name appears in manuscript notes on a large number  
of the Adam ceiling designs at the Soane Museum dated  
between 1766 and 1773, often qualified as light or dark  
\*512 in colour;\* and in their Works in Architecture the fact  
that pink was used as part of the colour scheme for the  
ceiling of the Library at Kenwood was specifically men-  
\*513 tioned.\* It also appears in James Adam's estimate of 1771  
for painting the Assembly and Council Rooms in the Shire  
\*514 Hall at Hertford,\* and was used in ceiling grounds in the  
Drawing Room at Osterley between 1772 and 1774. At the  
same time the stucco frames surrounding the wall panels in  
the Dining Room at the latter were painted '5 oil finished  
Pink Colour' at 1s. 6d. per yard; and later, in 1787,  
items appear in connection with the house for 'three times  
in oil & flatted fine pink' at 1s. 9d., and for picking  
\*515 panel grounds in a ceiling.\* Naturally, Chambers too used  
pink, the Deed of Transfer of 1781 showing that it was  
employed as part of the colour schemes in the common Ante-

- room shared by the Royal Society and Society of Antiquaries, and in the ceilings of the Meeting Rooms of the two bodies at Somerset House.\* It was used too at Font-hill, since Rutter recorded in 1823 that it was to be seen in the South Entrance Hall, on the ceilings in the Oak Parlour and Vaulted Library, and on the walls of an Ante-chamber.\*
- \*516
- \*517
- Pink, Dutch
- Although properly the name of a yellow pigment, Pincot sold one of his proprietary 'WATER COLOURS' as Dutch pink in the early years of the nineteenth century. Its price was 1s. per pound (cf. sample 84).\*
- \*518
- Pink, English
- Again properly the name of a yellow pigment, Pincot sold a 'WATER COLOUR' called English pink, this time at 6d. per pound suggesting it was paler in colour than his Dutch pink (cf. sample 84).\*
- \*519
- Pink, red
- A red pink was used by Adam in a design for the Drawing Room ceiling at Whitehaven dated 1769.\*
- \*520
- Plum colour
- Whittock suggested that a light plum colour distemper should be made from Indian red, blue, a little lake, and whiting. Both he and Vanherman illustrated its use in colour schemes reflecting contemporary ideals of colour harmony.\*
- \*521
- Pompadour
- Tingry's later editor indicated that the pigment commonly called purple brown was a purple iron oxide (cf. sample 64), and noted it was used to make pompadour.\*
- \*522
- Portland stone colour
- See Stone colour, Portland, below.
- Princes-wood colour
- In 1694 the joinery in the Tapestry Bedroom at Dyrham Park was painted princes-wood colour at 1s. 2d. per square yard.\* It is possible, however, that the finish was grained.
- \*523
- Puce
- Puce foncé was one of the couleurs lucidoniques manufactured at Paris from 1803 with a glossy finish.\*
- \*524

Purple

- \*525 Pincot observed that purple was an extravagant colour and would cost 8d. per yard over the cost of common colours.\*
- For interior applications in oil, it was made, Reynolds indicated, by combining rose pink and Prussian blue in equal parts; and Nicholson used a similar method, mixing lake with blue and white, whilst Vanherman observed that lake would harmonise with Prussian blue to produce a variety of beautiful purples (samples 37-45).\*
- \*526 The name appears in nearly a score of manuscript notes on ceiling designs by Adam at the Soane Museum dated between 1768
- \*527 and 1780,\* and dark purple was used in some of the grounds of the Drawing Room ceiling at Osterley Park between 1772
- \*528 and 1774.\* Chambers too advocated the colour on a ceiling he had designed for the Earl of Charlemont, suggesting in
- \*529 1775 that a little purple might be introduced in some areas.\* In 1780, he employed it too at Somerset House in the ceiling and frieze of the Royal Academy's Exhibition Room, and
- \*530 in the ceiling and wall panels of their Library.\* In the Deed of Transfer of the following year, parts of the ceiling of the Meeting Room of the Royal Society (mentioned in the accounts as 'Laylock' - described under lilac above) were noted as being light purple, for pale tints of which
- \*531 the latter was an obvious synonym;\* whilst in 1766 the Duchess of Northumberland had recorded the use of light purple in the ground of the ceiling of the Dining Room at
- \*532 Kedleston Hall, Derbyshire.\*

Purple brown

- Although properly the name of a dark iron oxide pigment (cf. sample 64), the term purple brown was also applied to a paint colour, no doubt of a dark purple hue and probably identical with pompadour (q.v.). In 1816 the London Patent Colour-Works marketed a purple brown 'IMPENETRABLE PAINT IN LINSEED-OIL' for interior and
- \*533 exterior use at 42s. per cwt.,\* and thirty years later Bartholomew specified the colour for painting sashes
- \*534 externally.\*

Quaker tints

In 1828, Vanherman noted that mixture of raw umber with white (sample 125) would produce a number of pleasant quaker tints. The addition of a little black would provide more, whilst if any of the reds was mixed in this would

\*535 increase the number still further.\* It seems likely, therefore, that quaker tints were seen as dull off-whites; and by extension that quaker brown and quaker green mentioned above were similarly subdued in tone.

## Reds

Methods for mixing reds in general have been reviewed above in two categories, the bright colours (samples 58, 59, 60, 61) and the darker tones (samples 62, 63, 64, 65-7). As far as the first of these are concerned, crimson and scarlet (which are separately discussed in this glossary) seem to stand at the boundaries of the range, carmine lakes forming the basis of the former, and vermilion that of the latter. Butcher, however, noted that vermilion might be combined (or, perhaps, sophisticated) with red lead to make a red; but observed that otherwise these two pigments and lakes were generally used on their own.\* Reynolds too listed red lead, vermilion, and rose pink for use internally in a way which suggests he saw them as alternatives.\* Against this, Nicholson (having noted that lakes had to be mixed with white for use, since unlike red lead, vermilion, purple brown and Indian red, they were not body colours) recommended that vermilion too might be added according to the tone desired.\* It will be remembered too that Watin proposed a similar mixture for crimson and was often used in the case of pink colours; whilst for a dark red distemper Whittock combined Venetian red, vermilion, lake, and a little whiting.\*

In general, the expensive pigments such as vermilion or lake were not used for red paint externally. Vanherman, for example, gave the following formulae for red in his 'IMPENETRABLE OR ANTI-CORROSIVE PAINT' intended for exterior use:

1.	Spanish brown	224 pounds
	Crotia	224
2.	Whiting	56 pounds
	Spanish brown	56
	Crotia	84.

This colour was, he indicated, 'a most excellent and durable covering for barns, sheds, cart and waggon wheels, implements of husbandry, tiles, &c.'.\* Reynolds too used Spanish brown in his red oil formula for exterior use, combining 8 pounds of it with 4 pounds of red lead before grinding the mixture into oil. Venetian red on its own would, he indicated however, provide a richer colour and be more durable.\* Occasionally such reds could also be used internally. Vanherman, for example, gave directions for mixing a colour for a picture gallery which would, he observed, harmonise with paintings and gilt frames. It was made from Venetian red, white, and a little black with the addition of a little turpentine varnish (cf. samples 65-7). The tint needed was, he indicated, 'the dark blotting-paper colour', and experiment\* has shown it can be extremely subtle for the purpose, the small quantity of black playing a vital role in removing any tendency to crudeness.\* It may be compared with the claret colour (q.v.) mentioned by Reynolds.

\*Fig. 163

Vanherman observed that his red 'ANTICORROSIVE PAINT' would cost about 9s. 4d. per cwt. to manufacture,\* but prices charged commercially seem to have been much higher. Bentley sold his equivalent product at 37s. in 1817 and Bennett indicated a rate equivalent to over 71s. 8d. in 1833, although he listed dark red coal tar paint at 42s.\* Lingard sold his dark red 'INVULNERABLE OIL PAINT' in paste form at 26s. in 1825 (35s. diluted ready for use), and a bright red at 32s. (39s. diluted).\* Such relative terms must, of course, be approached with caution; and it will be appreciated that bright red in an outdoor context would be very different from the colour the term could imply internally.

Adam indicated his intention to use red on part of the ceiling for the Library at Kenwood in 1767, and dark red on two other ceilings three years later.\* In 1827 John Britton recorded that a 'deep red colour, in imitation of the walls at Herculaneum and Pompeii' had been used in the Library and Dining Room at Sir John Soane's house in Lincoln's Inn Fields;\* whilst Prince Pückler-

- \*548 Muskaud described the colour on the walls in the Gallery of John Nash's house in Regent Street as 'pale red'.\*
- Red, French  
\*549 In 1802 Soane noted his intention to paint the upper part of the Staircase at Pitzanger Manor, Ealing, French rouge.\*
- Red, Pompeian  
The term 'Pompeian red' has not appeared in any of the literature examined in connection with the present study; but Soane's use of a 'deep red colour, in imitation of the walls at Herculaneum and Pompeii' at Lincoln's Inn Fields has been mentioned in connection with Reds in general (q.v.).
- Red walnut  
See Walnut below.
- Rose  
\*550 Watin recommended a mixture of a little carmine, 'une pointe' of vermilion, and ceruse to make couleur de rose (cf. samples 49-54).\*
- Sad colour  
\*551 In 1706 the Sad Colour Room at Montagu House was painted in this shade.\* References to sad brown, sad green, and sad stone colour will be found elsewhere in this Glossary, all no doubt reflecting the association with dark or dusky tones with which sad colour was aligned  
\*552 in Henry Henham's Dutch/English Dictionary of 1648.\* Today, the term survives in connection with the dyeing of cloth, successive immersions in an iron mordant serving to dull the colour and increase its resistance to fading; but it seems otherwise to have passed from common usage.
- Salmon colour  
\*553 Whittock indicated that a light salmon colour distemper was made using Venetian red, a small quantity of yellow, and whiting;\* and in 1826 an intention was expressed to colour some of the passages at Dunham Massey  
\*554 in distemper of a warm salmon colour.\*
- Scarlet  
\*555 In connection with his 'AROMATIC PAINT' for interior application, Vanherman noted that vermilion with lake (cf. samples 58, 59) made a bright scarlet.\* As might be expected, therefore, it was not a cheap colour, and was

indeed included in the most expensive category of hues by Laxton, who indicated in 1818 that it would cost 9d. per yard above the rate for common colours.\* In 1831, however, Skyring reduced this figure to 4d., including it nevertheless in his list of 'superior colours'.\* In 1774 Lady Louisa Conolly coloured the ceiling of the Gallery at Castletown, Co. Kildare, which dated from the 1730s, 'scarlet & grey & white & gold';\* and in 1826 Buckler described the walls of the Dining Room at Eaton Hall, Cheshire, as being scarlet, though whether painted or hung with fabric is not clear.\*

Slate colour

Reynolds indicated that a slate colour oil paint for exterior purposes was made by adding a 'paper' of lamp black to 10 pounds of white lead and 10 pounds of Spanish white (cf. sample 12).\* Gris ardoise was available with a glossy finish in the range of couleurs lucidoniques manufactured at Paris from 1803;\* Lingard sold slate 'Invulnerable Oil Paint' at 42s. per cwt. in 1825;\* and in 1833 Bennett suggested that coal-tar paint of this colour would cost 56s. per cwt.\*

Steel colour

In 1638 eight large double casements at Ham House were painted steel colour.\* It seems likely this would have been similar to iron colour (q.v.).

Stone colour

Stone colour seems generally to have been used to describe a fairly pale off-white, standing in contrast to the darker shade which today might be expected. John Smith described it as made from spruce ochre and white (sample 107),\* a suggestion copied by the author of the Painter's... Pocket Manual,\* although Nicholson substituted stone ochre.+ Vanherman, however, used spruce ochre in his 'AROMATIC' paint for interior application, but Bristol ochre in the first formula for his 'IMPENETRABLE OR ANTI-CORROSIVE' paint for exterior purposes. Significantly, the quantity of ochre in this formula was very small, the ingredients being:

Dry (white) lead	224 pounds
Whiting	224

Crotia	112
(Bristol) yellow ochre	8

In his second formula he omitted even this small amount, combining:

	Dry (white) lead	56 pounds
	Whiting	56
*568	Crotia	28*.

\*569 It is therefore of great interest to recall John Smith's remark that when posts and rails (in an external context) were painted white, the finish was called stone colour.\* For the type of oil paint he had in mind, boiled oil would probably have been used in its dilution, imparting a slight yellowing to the paint; whilst in Vanherman's formulae, the crotia would probably have had the same effect. Thus, stone colour was clearly not far removed from white; and, indeed, George Smith specified the use of a variety 'decreasing in force to almost a white, and approaching

\*570 nearly to a cream colour'.\* This is borne out by samples taken from two rooms at Somerset House which were close in

\*571 colour to Munsell references 2.5Y9/1 and 5Y9/1.\*

In other instances stone colour may have been given a slightly warmer tint. Nicholson, for example, suggested the use of umber with white (cf. samples 125, 126) for its

\*572 preparation,\* although this combination was employed by John Smith for oak timber colour, and by other authors for fawn, warm drabs, and quaker tints (q.v.). Pincot used both umber and stone ochre in stone colour, adding  $\frac{1}{2}$  pound of the former and  $\frac{1}{2}$  pound of the latter to 28 pounds of white lead (all in paste form). He observed that it was one of the colours commonly used for finishing outside work, adding, 'it covers better than White has a warm and finished

\*573 look and lasts clean longer than a white',\* a remark which may be compared with Chambers's sentiment that in rooms for

\*574 common use, stone colour would last best and was cheapest.\* Butcher and the author of the Painter's... Pocket Manual, probably copying him, also used umber with yellow ochre,

\*575 calling the result Portland stone colour.\* White lead,



stone ochre, and burnt umber, the first of these authors directed, should be 'mixed by degrees to the colour required' (cf. samples 122-4); and Vanherman too suggested the use of umber to make a warm stone colour, combining it with white and spruce ochre. It was, he said, an excellent colour for entrance halls and staircases, having a cheerful appearance and solid texture.\*

\*576 Two further formulae for stone colours were given by Reynolds, both for interior use. Dark stone colour contained 6 pounds of white lead, 8 ounces of yellow ochre, and  $\frac{1}{2}$  gill of lamp black, a combination which, as its name implies, would produce a much darker colour than those so far reviewed, and which may have had something in common with the sad stone colour (q.v.) encountered in early eighteenth-century documents (cf. samples 116-18). His light stone colour, on the other hand, contained 1 pint of white lead, 2 teaspoonsful of Prussian blue, 4 teaspoonsful of spruce yellow, and a teaspoonful of umber.\*

\*577 Such a greenish tinge finds no parallel in the English formulae mentioned above. No formulae specifically for distemper have been encountered, but it seems likely that the same tinting pigments would have been employed in such cases (these included, perhaps, the walls of the Great Stairs at Kensington Palace, which, it was directed in 1723, were to be 'whitened with stone colour in the size').\*

\*578 In oil, stone colour was occasionally flatted, an instance being found in the 1787 accounts for Osterley Park, where 'Twice in oil. & flatted Stone colour' appears at a rate

\*579 of 1s. per yard.\*

With the curious exceptions of Watin and Tingry, stone colour is mentioned by the vast majority of authors, and is a common item in painting accounts. It was clearly one of the most frequently employed and basic tints, and was indeed instanced in the Builders Price-Book together with that of Laxton as being one of the common colours.\*

\*580 Emerton sold his stone colour oil paint at 4d. or 5d. per

\*581 pound in the 1730s,\* the latter (equivalent to 46s. 8d.

\*582 per cwt.) being also the price charged by Crease in 1808.\* The London Patent Colour-Works sold their stone colour

\*583 'IMPENETRABLE PAINT IN LINSEED-OIL' at 56s. per cwt. in  
 1816,\* and Lingard his 'Invulnerable Oil Paint' at  
 prices from 42s. to 56s. depending on its quality and  
 \*584 readiness for use in 1825.\* The 'ANTI-CORROSION' paint  
 of the London Patent Colour-Works retailed at 42s. per  
 \*585 cwt.,\* whilst Bentley sold his 'ANTI-CORROSIVE PAINT'  
 \*586 at 46s. in 1817;\* although Vanherman later claimed his  
 'IMPENETRABLE OR ANTI-CORROSIVE PAINT', the formulae for  
 which have been described above, could be manufactured  
 \*587 for as little as the equivalent of 18s. 8d. per cwt.\*  
 Hodgkin sold his stone colour 'Anticorrosion' paint at the  
 \*588 equivalent of 60s. 6d. per cwt.,\* a figure repeated in  
 1833 by Bennett who indicated also that stone colour coal-  
 \*589 tar paint would cost 56s. per cwt.\* Teinte de pierre was  
 one of the couleurs lucidoniques manufactured at Paris  
 \*590 from 1803 with a matt finish.\*

Naturally the rates encountered in accounts and ref-  
 erence books for stone colour in oil are generally consist-  
 ent with its status as a common colour. In 1667, for  
 example, Primatt indicated that three coats would cost 1s.  
 per yard, the rate mentioned by Gerbier in 1663 without  
 specifying the number of applications, and found too in  
 the 1669 accounts for the Sheldonian Theatre in Oxford,  
 \*591 although other items there were priced at 1s. 2d.\* In  
 the early eighteenth century, however, prices had fallen  
 slightly, three coats of sad stone colour at Ditton Park  
 \*592 costing 9d. in 1705, and two coats 6d.\* At Egremont House,  
 Piccadilly, about 1764, four coats of stone colour cost  
 \*593 8d. and two 5d.;\* whilst at Somerset House rates of 9d.  
 and 10d. per yard were paid for four coats on stucco be-  
 tween 1780 and 1790, and 1s. for five coats on stucco in  
 \*594 1785.\*

Stone colour was a tint of such general application  
 throughout the period covered in this study that it is  
 needless to list all the instances in which it is known  
 to have been used. References to special varieties will  
 be found below, but, leaving aside its application to  
 wainscots and walls, the following are of particular inter-  
 est in illustrating the variety of ways in which it was

used. In the early 1690s it was employed on two 'raised figures' at Kensington Palace,\* and about 1700 on six chimneypieces at Boughton House.\* In 1775 Adam proposed the use of 'Stone Colours of a Yellowish cas[t]' on a ceiling for the Eating Room at Great Saxham Hall, Suffolk;\* and in 1786 the dome ornaments of the Register House, Edinburgh, were painted white picked in with stone colour.\* In 1821 an intention was expressed that the Hall chimney and window at Dunham Massey should be painted a good stone colour, whilst the wainscot in the Tea Room was to be painted stone colour and white.\* It was used too on the ceilings of the Oak Library, Vaulted Library, and St. Michael's Gallery at Fonthill Abbey;\* and in 1836 it was recorded that the walls and woodwork of the Library at Audley End, Essex, were painted stone colour.\*

Stone colour,  
brown

\*602

In 1705 an appreciable area of brown stone colour totalling 220 yards was used at Ditton Park in several unidentified rooms.\*

Stone colour,  
dark

\*603

The formula given by Reynolds for dark stone colour oil paint for interior application has been discussed under stone colour above.

Stone colour,  
fine

\*604

In 1771 James Adam provided an estimate for painting work at the Shire Hall, Hertford, which included the use of fine stone colour in the Ante-room;\* and in the same year Chambers wrote to Robert Gregory concerning his house in Berners Street, 'if you have any Particular fancy about the Painting your principal Rooms be pleased to let me know[.] my intentions is to finish the whole of a fine stone colour as us[u]al excepting the Eating Parlour'.\*

Stone colour,  
light

\*605

The formula given by Reynolds for light stone colour oil paint for interior application has been discussed under stone colour above. A very considerable area of light stone colour amounting to 2,545 square yards was used in a number of rooms at Montagu House, London, in 1706, wheretwo years later it was also used in Mr. Antonies Room.\*

Stone colour,  
Portland

The formulae given by Butcher and the author of the Painter's... Pocket Manual for Portland stone colour have been discussed under stone colour above.

Stone colour,  
sad

\*606

At Ditton Park in 1705 the rooms adjoining the Saloon and Vestibule, certain rooms, stairs, and passages on the north side of the house, the Writing Room next to the Duke's Bedchamber, and another 'Where the Billiard Room was' were painted sad stone colour, the total area running to nearly 2,000 square yards of work.\* This may, perhaps, have been comparable with the dark stone colour discussed above.

Stone colour,  
warm

\*607

Vanherman's formula for warm stone colour and his comments on its general character have been discussed under stone colour above. In 1819 Pyne recorded that the framework of the ceiling in the Great Hall at Carlton House was 'a warm stone colour'.\*

Stone colour,  
white

\*608

In 1705 several window boards at Ditton Park were painted white stone colour, and the same was used in the passage next to the Duke's Closet at Montagu House in 1706.\*

Straw colour

\*609

John Smith recommended a mixture of white with a little yellow ochre to make straw colour,\* and Reynolds directed that for an exterior oil paint 10 pounds of dry white lead were to be mixed with 1 pound of spruce yellow or English ochre (sample 105).\* Whittock spoke of yellow 'subdued' to a straw colour,\* and such mixtures would conform well with Holme's definition of straw colour as a 'weak or imperfect Yellow'.\* However, Emerton sold his straw colour oil paint at 8d. or 1s. per pound, suggesting it contained a more expensive tinting pigment; and it seems likely that a rather cleaner colour than ochre would provide was sometimes implied.\* Vanherman, for example, proposed the use of chrome yellow;\* and in distemper Nicholson recommended the use of massicot or Dutch pink, the latter, perhaps, the more reliable suggestion.\*

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\*616

Phillips indicated that straw yellow would cost 1s. 10d. per pound in 1812,\* and jaune paillé appears in the

list of couleurs lucidoniques manufactured at Paris from  
\*617 1803 with a matt finish.\* In 1785 ls. per yard was paid  
for four coats of oil paint on stucco at Somerset House  
\*618 finished straw colour;\* and in late eighteenth-century  
editions of the Builders Price-Book it was indicated  
that straw colour oil paint would cost 10d. to 1s. per  
yard, whilst prices also appear for straw colour in dis-  
\*619 temper.\* In the 1810 and 1813 editions the rate per yard  
\*620 for the latter was given as 4d.,\* but in 1812 Phillips  
suggested the much higher figure of 9d., recording earlier  
that the rate had been 3d. between 1760 and 1790, and 4½d.  
from then until 1803. By 1821 he indicated it stood at  
6d., whilst in 1818 Laxton quoted 5d., and the same rate  
\*621 was given by Skyring in 1831.\*

Straw colour is fairly commonly encountered in designs  
and accounts dating from the second half of the eighteenth  
century. A note on the reverse of a ceiling design by  
George Dance the Younger, for example, shows his intention  
to use a bright straw colour in the guilloche of the mem-  
\*622 bers forming a frame to the panels;\* and on four of the  
ceiling drawings at the Soane Museum Adam proposed the use  
\*623 of straw colour.\* In 1771 James Adam provided an estimate  
including its use in the Grand Jury Room at the Shire Hall,  
\*624 Hertford,\* and in 1782 the walls and parts of the ceiling  
and cornice in the Hall at Gordon Castle, together with  
the ground of the frieze in the Staircase, were painted  
\*625 straw colour.\* It is also mentioned in the 1787 account  
\*626 relating to Osterley Park.\*

#### Timber colour

John Smith's colour resembling new oak timber made  
from umber and white has been described above (s.v. 'Oak  
colour'), but he also included light timber colour in his  
list, made from spruce ochre, white, and a little umber  
\*627 (cf. samples 110-15).\* The end product seems, therefore,  
to be similar to some of the suggestions for mixing stone  
colour (q.v.) but may have been much darker in tone.  
Smith's formula was copied a century and a half later by  
Nicholson and the author of the Painter's... Pocket Manual,  
\*628 by when it was probably obsolete.\* In contrast, Bullet  
suggested the combination of ceruse and a little umber with

either red or yellow ochre, according to the different colours desired.\*

\*629

Gerbier, who mentioned its use as a ground colour for gilding, noted that timber colour would cost 10d. per square yard in 1663, but in 1667 Primatt gave a rate of 9d.\* Timber colour was used in a number of rooms in the Lodgings of the Duke and Duchess of York (now Apartment 29) at Hampton Court in 1674, the total yardage being 1,639½ charged at 1s. per yard;\* whilst in 1638 the wainscot in the Little Hall and Passage at Ham House was 'twice coloured over with Umber in Oylle, and then with light Timber cullo<sup>r</sup>' at 1s. 4d. per yard.\*

\*630

\*631

\*632

Turquoise

Watin indicated that bleu turc was made in oil or distemper using ceruse and Prussian blue (samples 19-21),\* and bleu Turquoise appears in the list of couleurs lucidoniques manufactured at Paris from 1803 with a matt finish.\*

\*633

\*634

Umber colour

In 1694 four rooms in the Nursery, the Servants Hall and Parlour, and the Common Waiting Room at Dyrham Park were painted umber colour at 9d. per yard.\* Whether this contained umber (samples 110, 112) is not clear, but the undercoat of 'Umber in Oylle' applied beneath the light timber colour (q.v.) at Ham House in 1638 suggests this may have been the case.\* Terre d'ombre appears in the range of couleurs lucidoniques manufactured at Paris from 1803 with a glossy finish.\*

\*635

\*636

\*637

Virgin tints

The author of the Painter's... Pocket Manual noted: 'Compound colours which are formed by the mixture of only two colours are called by the Painters virgin tints'.\*

\*638

Vermilion

Vermillon pur was one of the couleurs lucidoniques manufactured at Paris from 1803 with a glossy finish.\* Vermilion is, of course, properly the name of a pigment (sample 59).

\*639

Violet

Watin advocated a combination of lake, Prussian blue, a little carmine, and a very little white lead to make violet in oil or distemper (cf. samples 28-36).\* Nicholson,

\*640

on the other hand, merely suggested it was made by mixing  
\*641 red and blue pigments;\* but the author of the Painter's...  
Pocket Manual gave vermilion or red lead as the red pig-  
ments, expressing a preference for the former, and indi-  
\*642 cating that these were to be mixed either with blue or  
black and a very little white.\* Adam proposed the use of  
violet in his ceiling design of 1773 for the Second Draw-  
ing Room at Lord Stanley's in Grosvenor Square, and  
violáceo in 1770 for that in the Drawing Room at Luton  
\*643 Hoo, Bedfordshire.\* Violet foncé was one of the couleurs  
lucidoniques manufactured at Paris from 1803, and was  
\*644 available in a matt finish.\*

Wainscot colour

See oak colour above.

Walnut colour

Watin proposed a combination of ceruse, 'ochre de rue',  
and umber with red and yellow Berry ochre to mix bois de  
\*645 noyer in size or oil.\* Tingry repeated this for walnut  
tree wood, noting that 2 parts of white lead should be  
\*646 added to 1 part of the combined tinting pigments.\* The  
author of the Painter's... Pocket Manual repeated this,  
but omitted any reference to the particular varieties of  
\*647 ochre (cf. samples 110-115).\*

Gerbier noted that 'Wainscot put into a Wale-nut red  
\*648 colour, in distemper' would cost 6d. per yard in 1663.\*  
In the 1730s Emerton was selling his walnut tree colour  
oil paint at 6d. per pound, a rate slightly higher than  
\*649 that for the cheapest colours in his range;\* and widely  
varying prices may be found for paintwork. Neve, for  
example, remarked that walnut tree colour 'is worth 10d.  
\*650 say some, others say 16 or 18d. per Yard'.\* Perhaps the  
most likely explanation is that the term could often imply  
graining, as was probably the case in the Duchess of York's  
Lodging (now Apartment 29) at Hampton Court, where Streeter  
was paid 1s. 6d., 2s. and 2s. 6d. per yard in 1674 and  
\*651 walnut graining has recently been found.\* At Kensington  
Palace too rates of 1s. 6d., 1s. 8d., and 2s. were paid in  
the early 1690s, graining being mentioned in one or two  
\*652 instances.\* In 1694 the Pavilion, Family Parlour, Slope  
Room, Great Parlour, Great Stairs, Slope Chamber and Closet,

- the Chamber over the Servants Parlour, and the Dressing Room at Dyrham Park were painted walnut colour at 1s. 2d. per yard;\* but tenders for Greenwich Hospital of about 1696 quote only 8d. or 9d., three coats of oil being specified in the first instance.\* An estimate for work at Stoke Edith, Herefordshire, of 1705 gives a figure of 1s.;\* whilst at Montagu House, London, 9d. was charged for a smallish yardage in the following year.\* Altogether, walnut tree colour seems to have been fashionable during the second half of the seventeenth century, but like other similar colours had probably gone out of fashion in England by the latter part of the eighteenth. Significantly, it is not mentioned in the Builders Price-Book; although in France Watin provided a formula for its preparation, and couleur de bois de noyer was one of the couleurs lucidoniques available with a matt finish made at Paris from 1803.\*
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- \*657
- Warm tints                      Laxton and Skyring respectively priced warm tints at 5d. and 2d. above the cost of common colours.\*
- \*658
- White                              White paint and special methods for its preparation to minimise any tendency to yellow or to remove its harshness have been described in the first part of this chapter. Rates for its application have been exhaustively analysed in Chapter II. Both the author of the Builders Price-Book and Laxton noted that it was one of the common colours, and Pincot included it in the group for general use externally;\* whilst Pratt remarked that it had the particular advantage of reflecting the sun and keeping its heat from tearing timberwork.\* Such was its ubiquitous application on ceilings, wainscot, and plastered walls that it is needless to note here all the instances in which it has been encountered, and its universal nature will be shown in Part Two below.
- \*659
- \*660
- White, blue                      See White, milk below.
- White, dead                      The term dead refers not to the nature of the white itself, but to its matt finish and is synonymous with flatting discussed in Chapter II above.



- White, fair  
 \*661 In 1686, 509 square yards of fair white were applied in Lord Tyrconnel's Lodging at Whitehall Palace at a rate of ls. 2d. per yard.\* It seems possible that the use of walnut oil was implied by the term.
- White, fine  
 \*662 The term fine white is to be found in the 1772-4 and 1787 accounts for Osterley Park, perhaps implying a special finish.\*
- White French  
 \*663 In a remark repeated by Tingry's later editor, Hay defined French white as the lightest 'shade' of purple, a comment which indicates it belonged to the same family as French grey (q.v.).\* Vanherman also used the term to describe one of his proprietary paint mediums, observing that it was not a pure white, but inclined to what was  
 \*664 called a French white.\* The London painter and gilder, George Hutchison, advertised that he 'finishes French White in a peculiar and new Method in Varnish, so that the Lustre is little inferior to the best Japanning'.\*  
 \*665
- White, milk  
 \*666 Blanc de lait ou azuré was one of the couleurs lucidoniques with a matt finish manufactured at Paris from 1803.\* In 1688 Holme had defined milk white as  
 \*667 'a blewish White'.\*
- White,  
 rose tinted  
 \*668 In 1833 an intention was expressed to paint the ceilings in the Dining Room, Drawing Room, and Breakfast Room at Dunham Massey in a rose tinted white.\* This could have been prepared in the way suggested by Watin for rose (q.v.).
- White, Royal  
 This was not a colour, but a type of distemper advocated by Vanherman which, together with Watin's blanc de Roi, has been described in Chapter II.
- White, silver  
 \*669 Watin indicated that blanc argentin for his special 'chipolin' distemper should be made using indigo and vine black with the white.\* It must, therefore, have been a pale version of his gris argentin (silver grey - q.v.).
- White stone colour  
 See Stone colour, white above.

Willow colour

See Green, willow above.

Wood colour

The London painter and gilder George Hutchison indicated that he 'perform'd' wood colour 'in the Highest Perfection'.\* No doubt it was similar to timber colour (q.v.).

Yellow

Methods for mixing various types of yellow paint have been reviewed above. Tingry indicated that Naples yellow, Montpellier (patent) yellow, or yellow ochres could be used in distemper or varnish;\* whilst Butcher suggested the use of patent yellow and a small quantity of white lead, or alternative employment of Dutch or English pink, to make fine yellow.\* The difficulties attending use of either of these pigments in oil have already been discussed, and it is not clear how sound this suggestion was (cf. samples 83, 84, 85, 88, 89).

Yellow was used on the ironwork of the Great Staircase at Henry Pelham's House in Arlington Street, London, in 1748, although this may have been intended as an undercoat for gilding.\* Its use was proposed too in manuscript notes on four of the Adam ceiling designs in the Soane Museum dated between 1768 and 1773,\* and in 1782 the walls of the Barrack Room at Gordon Castle were painted yellow in distemper.\* Between 1789 and 1791 the mouldings and two members of an enriched cornice in one of the rooms at Woburn Abbey were picked in yellow,\* and in 1823 Rutter described the ceiling of the Oak Parlour at Fonthill Abbey as having pale yellow mouldings.\* In 1817 Bentley was selling his yellow 'ANTI-CORROSIVE PAINT' for exterior purposes at 46s. per cwt.,\* and in 1833 Bennet quoted a figure equivalent to 7ls. 8d. per cwt. for 'Anticorrosion paint' of this colour.\*

Yellow, Etruscan

In 1773 Adam proposed the use of Etruscan yellow in a manuscript note on his design for the ceiling of the Second Drawing Room at Ashburnham House.\*

Yellow, golden

See Gold colour above.

Yellow, Italian

\*681

Jaune d'Italie was one of the couleurs lucidoniques available in a glossy finish which were manufactured at Paris from 1803.\*

Yellow, lemon

See Lemon colour above.

Yellow, Naples

\*682

Between 1772 and 1774 certain elements in the Dining Room of Mr. Mainwaring's House at Norwood, relating to the Osterley Estate, were painted in Naples yellow. Whether this implies use of the pigment of that name (sample 88) is not, however, clear. '4 oil finished naples yellow flatted' cost 1s. per square yard, and 'Stucco walls 5 oil naples yellow flatt' 1s. 4d.\*

Yellow ochre

\*683

Although properly the name of a pigment (sample 85), ocre jaune was one of the couleurs lucidoniques with a glossy finish which were manufactured in Paris from 1803.\*

Yellow, patent

\*684

\*685

\*686

An item for 'once in oil & twice patent yellow' appears in the 1787 account for Osterley Park at a rate of 1s. per yard, together with another relating to a plinth (i.e. skirting).\* In 1816 the London Patent Colour Works were selling patent yellow 'IMPENETRABLE PAINT IN LINSEED-OIL' at 1s. 6d. per pound;\* whilst Laxton and Skyring indicated that patent green or yellow oil paint would cost 9d. and 5d. per square yard respectively over the cost of common colours.\* In view of the instability of patent yellow (sample 89) in oil, it may be questioned whether it was actually used in preparing such finishes, and it is quite possible its colour was reproduced by other means.

Yellow, sulphur

See Brimstone colour above.

PART TWO

THE ARCHITECTURAL USE OF COLOUR IN INTERIORS

COLOUR BEFORE  
THE CIVIL WAR

For many years prior to the seventeenth century paint had provided a convenient means of adding colour to walls and ceilings. The Liberate Rolls of Henry III (1216-1272) show, for example, that besides the whitewashing of such interiors as that of St. John's Chapel in the Tower of London (1240), the Great Hall at Clarendon, Wiltshire, (1249), and the King's Hall, King's Chapel, Queen's Chamber and Chapel, and Queen's Great Wardrobe at Guildford, Surrey, (1256) he ordered wainscots in a large number of his and his Queen's chambers to be painted green, often enriched with gilding. These included those in the King's Great Chamber at Woodstock, Oxfordshire, and the King's Painted Chamber at Winchester Castle, Hampshire, (1233), the King's Chamber at Geddington, Northamptonshire, (1250 and 1252), the Queen's Chapel at the same (1252), and the New Chamber at Windsor, Berkshire, (1261). In addition, the ceiling of the King's Chamber at Guildford was to be painted 'of a green colour becomingly spangled with gold and silver' (1256).\*

\*1

Marbling too was practised at this date, two architectural instances again being found in the Liberate Rolls of Henry III. The piers of the aisled hall at Ludgershall, Wiltshire, were ordered to be painted a 'marble colour' in 1246; and the pillars and arches in the King's Hall at Guildford (whose contemporary whitewashing has already been noted) were similarly treated in 1256.\* Later, in the reign of Edward I (1272-1307), Richard de Assheby was paid 32s. 'for preparing with white, covering with ochre, and varnishing the King's Chamber'.\*

Besides such straightforward work, walls were often lined out in imitation of jointed ashlar (the King's Chamber at Guildford, whose green ceiling has just been mentioned, was an example);\* and figurative wallpaintings, such as that finally obliterated just prior to 1783, depicting Sir Lancelot de Lake and Sir Tarquin, in the Banqueting Hall at Tamworth Castle, Staffordshire, were also employed in domestic situations.\*

\*2

\*3

\*4

\*5

Altogether, it may be seen, great richness was often displayed in important mediaeval interiors, and in the early

years of the English renaissance the tradition continued. At Hampton Court, Middlesex, the early sixteenth-century room known as Wolsey's Closet provides a notable example of the way an expensively conceived classical interior was treated. The ornamental work of the frieze and ceiling (made from a composition containing sawdust, goat hair, and glue) corresponds interestingly in the arrangement of its panels with one of the ceiling plans given by the Italian architect, Serlio, in his fourth book, first published in Venice in 1537.\* The mouldings and raised ornaments are gilded and set on a ground of deep blue distemper (made, analysis in connection with the present study has shown, using azurite)\* whilst the panel frames are painted brown. This colour scheme may be of particular significance since it also appears to correspond closely with advice Serlio gave in connection with his ceiling plans:

\*Fig. 27

\*6

'if a man will beautifie it [a ceiling] with Paynting, it must bee well done, and... made of light and browne colours: and in the middle of the field you must set a gylt rose: but if a man will colour it, then the field must be blue'.\*

\*7

Nevertheless, white also appears to have been used, probably quite commonly, on English ceilings in the sixteenth century, and William Harrison, whose 'Historicall Description of the Island of Britayne' was printed in Raphael Holinshed's Chronicles (1577), noted with approval the 'delectable whitenesse' of ceilings finished in plaster of Paris.\*

\*8

\*Fig. 28

\*9

At this period a few rooms were provided with elaborately inlaid wainscot, the best known example probably being that now in the Victoria and Albert Museum dated to about 1575 from Sizergh Castle, Westmorland (now Cumbria).\* Its general construction is of oak, and the inlay is executed in poplar and bog oak.\* It has been suggested too that such inlay was imitated in paint by John Paynter in the Long Gallery and other rooms at Hardwick Hall, Derbyshire, although the accounts published in support of this contention do not seem to afford conclusive proof.\* Nevertheless, two pounds of varnish, the same weight of lamp black, and a like quantity of yellow ochre

\*10

\*11 were purchased in February 1599 'for ye seeling in ye high  
 great chamb<sup>r</sup>.',\* and the smallness of the quantities does  
 seem to imply that it was work of this scale which was in  
 hand. Graining on larger areas was certainly practised at  
 this date, and at Oatlands, Surrey, Leonard Fryer was paid  
 £103 in 1597-8 for 'pryming and stopping with white leade  
 all the wenscott about the gallery, and, after leying the  
 pannells and battens of the same with soundry cullours  
 \*12 curyously grayned w<sup>th</sup> a grayne called flother woode'.\*

Marbling too remained in use during the sixteenth century,  
 236 panels and 74 pillars in Sir Thomas Cawarden's house,  
 Whitefriars, London, being painted like jasper some time before  
 1544 by Bartolomeo Penni, who also executed 253 square yards of  
 \*13 'whyt marbyll'.\* In the first half of the seventeenth century  
 examples of marbling on particular elements seem common, and  
 probably include the (restored) marbling on the columns in  
 \*Fig. 29 the Great Staircase at Knole, Kent,\* thought to originate  
 \*14 from about 1605.\* Certainly in 1610-11 the chimneypiece in  
 the Queen's Attiring Chamber at Denmark House (i.e. Old Somer-  
 set House, Strand, London) was 'garnished with divers Culloured  
 stones as rance touch[stone] white & blacke marble serpentine  
 \*15 & purfrire [porphyry]';\* whilst at Oatlands the two columns  
 and pedestals in the Chapel were marbled black and white in  
 \*16 1613-14.\* In 1637-8 a chimneypiece at the same house was  
 \*17 painted 'in a white marble color',\* and in 1629-30 Matthew  
 Gooderick had painted the frieze in the Queen's Bedchamber at  
 St. James's Palace, London, 'with foliages like Marble, and  
 \*18 the ground of the worke fair blewe'.\*

In 1639 Charles I purchased Wimbledon House, Surrey, for  
 his Queen, the French Princess Henriette Marie (1609-69), who  
 had arrived in England in 1625 and was forced to leave in  
 1644 by the political disturbances of the Civil War. Exten-  
 sive works, which included the general re-planning of the west  
 wing, were undertaken, and, although the building was demol-  
 ished in 1720, it is possible to obtain a vivid impression  
 of the interiors from the Inventory taken in November 1649  
 following the execution of the King. How far the finishes it  
 records reflected Continental tastes it is impossible to say,  
 although it is known that the Queen employed a French gardener;

but the document, published by John Caley in 1792, is nevertheless of considerable interest.\*

Two rooms on the floor beneath the Great Hall, the Lower Spanish Room and the Stone Gallery, had wainscots which were 'varnished' green and 'spotted with starrs of gold', a decorative scheme which seems to have had much in common with the mediaeval examples described above. On the main floor, however, different colours and a great deal of unpainted timber were used. One entered the Great Hall, for example, through screens in the normal way and found an interior wainscoted to a height of eight feet. The upper parts of this were again 'spotted with starrs of gould' and the fireplace was of black marble. The Marble Parlour (possibly the room in the south-east corner of the building lying behind the dais end of the Hall), by contrast, was described as,

'waynscotted round with oaken waynscot, colored with livor color and varnished, the uppermost partes of the pillers of the waynscot, and three of the highest panes [i.e. panels] round are well guylded, and spotted with stars of gould, above which is a border of fret or parge [plaster] worke wrought, having therein set eleven pictures of very good workmanship, the seeling is of the same fret or parge worke, in the very midle wherof is fixed one well wrought landskip, and round the same, in convenient distances, seven other pictures in frames are fixed for ornaments unto the whole roome'.

The Organ Room was next described, and had an oak wainscot 'varnished' white and 'filleted' with green. Mention is later made of some unused 'waynscot border varnished blue and whyte' stored in the Great Chamber on the first floor. Of the remaining rooms on the ground and first floors, fourteen, including the Queen's New Chamber, appear to have had unpainted wainscots, although the majority were enriched with gilding. Nine of the wainscots were specifically described as oak; and, of these, three were designed so as to cover part of the walls only, the remaining space being intended for hangings (which seem to have been absent at the date the Inventory was made). In one of the rooms completely wainscoted in oak, the Lord's



Closet, the panelling is described as varnished, but the finish, if any, employed elsewhere is not mentioned.

It may be seen, therefore, that the use of paint colour in the house was fairly limited, and much of the wainscot with which the majority of the more important rooms were lined appears to have been left with its natural grain exposed. No reference is made to any colouring in the ceilings, and hangings and pictures were undoubtedly of major importance in providing colour in many of the rooms. It is especially interesting, however, that the green, umber colour, and white mentioned were all described as 'varnished' implying a glossy finish.

Many similar elements are found in the decorative work carried out by William Murray (later first Earl of Dysart) at Ham House, Surrey, in the mid-1630s, although much of the wainscot was grained in imitation of walnut rather than allowing its own natural grain to be seen. The edifice had originally been built by Sir Thomas Vavasour in 1610, and Murray's work involved the extension of the Great Hall, entered at the lower end through opposed doorways on the axis of the H plan. Beyond the new high end, to the East, he provided a new staircase giving access to a Dining Chamber and Withdrawing Room on the first floor, forming a grand apartment above the Great Hall and Buttery.\* Matthew Gooderick's bill for painting work in connection with this is dated April 1638\* and contains, besides items for those interiors affected by the changes, a number in the way of repairs and touching up in existing rooms. Several of these involved the use of green, which, on the cornice of the Green Parlour and the doors in two passages, was varnished as at Wimbledon. The wainscot in the Buttery, however, was simply painted 'greene in Oylle'; and the majority of the other rooms were much more restrained in tone. The wainscots in the Little Hall and Passage, for example, were finished in light timber colour, and the paintwork in the Chamber to the Garden and also probably in the Chamber on the Court Side (lying south and north of the remodelled staircase respectively) was grained in imitation of walnut and varnished. In the Closet to the former, the cornice alone was painted green, suggesting this was a repair.

\*20

\*21

The main interest of the account, however, lies in three rooms directly affected by the alterations, the Great Hall, Great Staircase, and the Dining Room. Visiting the house after 1638, one would have entered the Great Hall from the Court, having approached on the main axis of the house. Inside, the door to the garden was opposite and the high end of the Hall to the left. The entire wainscot was 'Layde Walnuttree coullor<sup>r</sup> in Oyll and vayned' (i.e. grained in imitation of walnut), whilst the fireplace was painted 'lyke gray Marble'. The plasterer's account\* shows that the ceiling was whitened. One thus stood in a fairly subdued interior, but entering the Great Staircase through the archway at the left hand end of the east wall (closing the high end) a note of increased richness was immediately struck. The joinery, including the window architraves and doors, was again grained in imitation of walnut and the ceilings were whitened, but all the doorcases (except those on the second floor landing) were marbled, being 'Layde over twice w<sup>th</sup> waitlead in Nutt Oyll and varnished and vayned as polished Marble'. The joinery of the staircase, the window architraves, the doorcases, and the doors themselves, moreover, was all lavishly gilded.

\*22

Having gained the first-floor landing, one thence entered the Dining Room which lay above the Great Hall. In place of the dull walnut imitation, the greatest opulence was displayed, the entablature, wainscot, architraves, and doors all being painted a deep 'fair blew' reminiscent of Wolsey's Closet but executed, analysis has shown, using blue verditer.\* Every part was probably varnished, and, to increase the richness of all these elements still further, they were gilded with 'fine gould' and the room was almost certainly hung with tapestry.\* Altogether the effect must have been overwhelming to the seventeenth-century visitor, and the status of this room is shown, not merely by the richness of its hangings (which continued in the Withdrawing Room beyond), but also by the expense of its paintwork at 3s. 6d. per square yard against 1s. 6d. or 1s. 8d. for the graining and green elsewhere, an important aspect of architectural colour which remained paramount for virtually the whole of the period considered in this study. Such lavish expenditure had obviously been involved too in Wolsey's Closet at Hampton Court over a century before,

\*23

\*24

and no doubt also in the Chambre Bleue of the Marquise de Rambouillet (1588-1655) at the Hôtel de Rambouillet in Paris which she completed in about 1620. This room, whose paint and hangings were both blue (the latter either velvet enriched with gold and silver, or brocatelle with white and gold scrollwork on a blue ground), may, indeed, have provided Murray with his inspiration, since the Hôtel was well known for its décor and was said to be much imitated 'dans tous les logis propres & superbes'.\* Ham, therefore, may well sum up the height of English fashion on the eve of the Civil War, and, following careful restoration by the Victoria and Albert Museum, the impact of the blue paint and gilding in the Dining Room (now the Round Gallery)\* may be vividly appreciated.

\*25

\*Fig. 30

PAINT COLOUR  
AFTER THE  
CIVIL WAR

After the miseries of the Great Rebellion which disrupted English life for nearly two decades, the restoration of the Monarchy in the person of Charles II was greeted with relief and enthusiasm. The Diarist, John Evelyn, recorded the arrival of the King in London on 29th May 1660, the people,

\*26 'shouting with inexpressible joy; the wayes strew'd with flowers, the bells ringing, the streetes hung with tapistry, fountaines running with wine'.\*

\*27 Within a short time refurbishment works were in hand at Whitehall Palace, and the accounts for November 1662 show, for example, that white, blue, and yellow were employed in connection with the ceiling and carved cornice in the King's New Closet.\* Precisely how these were disposed is, unfortunately, not clear, but in general the use of such colours on large areas as at Ham seems to have declined during the closing four decades of the seventeenth century and become minimal even in the most sumptuous inner closets of the wealthy. Indeed, the overwhelming majority of references, even in Royal palaces, are to the employment of the duller colours of timbers together with stone colour and white. It is also significant that Sir Roger Pratt (1620-1684), a gentleman architect whose notebooks are preserved at Ryston Hall, Norfolk, dismissed all blues, greens, yellows, and similar colours with the remark, \*28 'naught which works in the panels etc.';\* and few examples even of green, which had hitherto occupied such an important place in house-painting, are to be found in painting accounts of the period. Those noted in the Wren Society volumes include, for instance, only a mere 36-2/3 square yards at Whitehall \*29 +30 Palace in 1687,\* and 64 yards at Hampton Court in 1691-2;+ whilst the Kensington Palace Pay Book, covering work from 1690 to 1694, records but 10-2/3 yards in 1692 together with an item \*31 for painting a lock.\* The uniform rate of 2s. per yard for all these, it may be observed, indicates that expensive pigments such as verdigris were probably being employed. Sir Balthazar Gerbier's advice of 1663 that: 'Painting of the fairest green, that can be in distemper, and varnisht' would cost 1s. per square yard, and Stephen Primatt's assertion in 1667 that the 'best Cerulian or Blew colour in Oyl' would cost 1s. 6d. seem, \*32 therefore, to reflect obsolete or obsolescent taste and practice;\*

and whilst in the 1680s in The Art of Painting John Smith, as will be recalled from Chapter III, gave directions for mixing such bright and often relatively costly tints as willow green, grass green, flesh colour, carnation, orange, and brick colour, these (with the possible exception of brick colour, which may have been used externally) appear to have  
\*33 been generally intended only for application to small elements.\*

Special  
treatments

Before looking in some detail at ordinary house-paint, it will be useful to examine first the more special finishes used in interior decoration during the second half of the seventeenth century, in particular japan, marbling, and graining. These will, in any case, be more familiar to most readers since their exceptional character has meant that they were commented on and thus recorded for posterity. In their employment too will be found underlying principles to which more ordinary work can be related.

Japan

Chief amongst these decorative techniques was the incorporation or imitation of panels of oriental japan, and this was undoubtedly regarded as one of the most prestigious of finishes in an intimate closet. Such panels were used in a closet at the Huis ten Bosch in Holland in the 1650s,\* and after the Civil War examples were to be found in England. At Chatsworth, Derbyshire, for example, are pieces believed to survive from a now dismembered closet (possibly the Duchess's Closet, to which Celia Fiennes referred in 1697 as 'wanscoated with the hollow burnt japan');\* and such was the shortage of genuine pieces of lacquer that imitations were often provided. So great, indeed, was the demand, especially for japan furniture, that in 1688 John Stalker and George Parker felt drawn to publish their Treatise of Japanning and Varnishing. This provided drawings of oriental motifs suitable for use on 'Furniture, Tables, Stands, Boxes, and Looking-glass-frames' together with technical directions for the imitation of lacquer in such detail that 'if done by able Hands, it may come so near the true Japan, in fineness of Black, and neatness of Draught, that no one but an Artist should be able to distinguish 'em'. Their directions could, they implied, also be used in architectural decoration; and, since japan provided a method for the protection of both furniture and houses from decay, they  
\*34  
\*35

exclaimed:

'What can be more surprizing, then to have our  
Chambers overlaid with Varnish more glossy and  
reflecting than polisht Marble? No amorous Nymph  
need entertain a Dialogue with her Glass, or  
Narcissus retire to a fountain, to survey his  
charming countenance, when the whole house is  
one entire Speculum.'\*

\*36

Reputedly contemporary examples of such work survive on  
the stiles of wainscot at Hill Court, Herefordshire; Great  
Hundridge Manor, Buckinghamshire; 'Swangrove', Badminton,  
Gloucestershire; and Old Battersea House, London;\* but the  
Japan Closet at Dyrham Park, Gloucestershire (now Avon), has  
been destroyed. This was painted in 1694 by a 'Mr Hauduroy',  
possibly Mark Anthony Hauduroy who was the son or brother of  
the architect for this part of the house, at a cost of 5s. per  
square yard.\* This was an extremely high price for decorative  
paintwork, and it is a great loss that we are unlikely ever to  
know what the room looked like and whether, as seems likely,  
the panels as well as the stiles and rails were decorated in  
this manner. The same is true of the slightly earlier closet  
in the Water Gallery at Hampton Court, Middlesex, a Tudor  
structure converted into a maison de plaisir for Queen Mary  
but demolished in 1700. The alterations were completed by the  
end of 1690 and Celia Fiennes, who visited and noted details  
of many houses in the late seventeenth century, recorded the  
room as 'pannell'd all with Jappan'.\* In the Palace proper it  
was clearly envisaged at one stage that Queen Mary's Closet  
(a room which still survives, though with an unpainted oak  
wainscot) might be enriched with decorated panels; and two  
sets of coloured designs for this survive in the Hampton Court  
volume at the Soane Museum. One of these\* proposed the use of  
panels painted in an oriental style surrounded by framing  
mouldings coloured green and set within a wainscot tinted  
grey with white mouldings. The ceiling too was probably  
intended to be painted white, but the enrichments of frieze,  
cornice, and architrave were to be picked out in green. This  
drawing is a most important survival and provides a remarkably  
clear indication of the way the most intimate room of a

\*37

\*38

\*39

\*Fig. 31

monarch might be treated.

\*Fig. 32

\*40

The same is true also of the alternative design for the room, although the style of the painting is different. All four elevations survive, that for the fireplace wall\* showing panels of flower painting set within what probably seems intended as a white painted wainscot and gilded framing mouldings. The elevation for the wall opposite, however,\* (corresponding with the elevation for the japan scheme illustrated) shows a landscape in the large panel between the windows, whilst the wash on the frames, now grey and tarnished, must originally have been intended to indicate the use of silver.

Marbling and  
other painted  
imitations

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\*42

\*43

\*44

\*45

\*46

Both these Hampton Court designs are clearly of the very highest quality and would have been executed to the very best standards the decorative painter could provide. He was not limited, however, to Japan or flower painting, and there are, for example, references to imitations of the motifs from Delft tiles at Hurley Priory (or Lady Place), Berkshire, which may have been executed around this date.\* More commonly, though, his skill would have been called upon in marbling wainscot (a technique mentioned both by Pratt and John Smith)\* in one or more of a number of varieties of figure. Pre-Civil War examples have already been mentioned, showing the practice was well established; and after 1660 there are many references to complete wainscots being treated in this way. In 1662, for example, the King's Supping Room at Whitehall Palace was painted 'white marble varnisht and veined in distemper';\* and in the same year the walls of the Duchess of York's Bed-chamber at St. James's Palace were painted to look like 'white marble' with lavishly gilt mouldings.\* In 1676 the wainscot and carving in the 'Paradise' at Hampton Court Palace were painted 'white veined in nut oyle',\* whilst in 1680 'all ye wainscott worke carveing & window shutters' in the Duchess of York's Privy Chapel at St. James's Palace were painted to resemble 'lapis lazuli & Raince marbell & white & black marbell'.\* Celia Fiennes visited two marbled rooms in the mid-1690s, recording at Newby Hall, Yorkshire, Sir Edward Blackett's House, that 'the best roome was painted just like marble'; whilst at Barmston, in the same county, there was a parlour

\*47 'with plaine wanscoate painted in veines like marble dark  
and white streakes'.\* In 1694 John Cooke was at work 'paint-  
ing the marble Closet at the water gallery', Hampton Court,  
\*48 for which he later received £50;\* and the same year Hauduroy  
painted the Summer House at Dyrham 'marble colour' at 1s. Od.  
\*49 per yard,\* the same price as that given by Richard Neve in  
his City and Countrey Purchaser of 1703 for 'ordinary Marble-  
\*50 colour, on new Stuff'.\* Here, therefore, it was probably the  
simplest, white marble with grey veins; but prices could rise  
to several times that amount for coloured varieties such as  
the 'Green stone', 'Rock stone' and 'Lapus Lazure' which  
Isaac Bayly priced at 2s. Od., 3s. 6d., and 5s. Od. respect-  
ively in connection with his estimate for work at Stoke Edith,  
\*51 Herefordshire, in 1705.\*

Examples of late seventeenth- and early eighteenth-century  
marbling are believed to survive in several rooms at Ham House,  
and in the Cedar Stairs at Dyrham Park; and illustrations of  
others which Edward Croft-Murray suggested as authentic  
(including those at Hill Court, Great Hundridge Manor, and  
the Old Parsonage at Stanton Harcourt, Oxfordshire) have also  
\*52 been published.\* Most of the latter combine the imitation  
with Japan or graining; whilst the Ham examples are all white  
with grey veining, and the Dyrham instance is restricted to  
large 'blocks' imitating marble on the plaster walls above the  
\*Fig. 33 dado. In the Balcony Moom at this house,\* however, technical  
investigation by the use of microscope cross-sections in con-  
nection with the present study has revealed the existence of  
a complete scheme of elaborate marbling below the existing  
\*53 graining on the wainscot.\* The 1694 account for this is ex-  
tant, showing the 'marble Colour' was executed at 3s. Od. per  
\*54 yard;\* and, although (since the graining is itself of consid-  
erable interest in its own right) it was not desirable to  
expose the marbling, it was nevertheless possible to recon-  
struct the scheme in some detail.\* The entablature, pilasters,  
and mouldings of the dado, pedestal, and large panels imitated  
porphyry; the panels, stiles, and rails were marbled in imita-  
tion of what was probably a single variety of pinkish orange  
marble with a bright pink, grey, dull pink, and pinkish white  
figure; and the skirting was in grey. The gilding, much of  
which has been covered with gold paint, is also mentioned in



the account and the latter follows its original lines. Since the figuring of the marble (which was not varnished) cannot be determined without exposing a fairly large area, it has, of course, been necessary to render it in a plain colour in the restoration drawing.

This scheme is of very great interest, and may usefully be compared with the almost contemporary advice offered by the French author A.C. D'Aviler which is contained in his Cours d'architecture published in Paris in 1691. Hauduroy, the painter of the room, was most probably of French extraction, and the discernably French feel of the west front of the house is also worth remark. Discussing the imitation of various materials in paint, D'Aviler noted,

'la Peinture... imite aussi les Marbres au sujet dequoy il faut observer de ne point feindre de marbre ce qui n'en peut pàs estre effectivement comme les Ventaux des Portes, & les Guichets des Croisées. Il faut varier les marbres selon les parties de l'Architecture, en sorte que l'Architrave & la Corniche estant d'un couleur, la Frize soit d'une autre: Comme dans les Lambris le batti doit estre different des quadres, & les quadres des panneaux; & aux cheminées le chambranle est d'un marbre different de la Frise & de la Corniche.

\*55 'On doit prendre garde en variant les marbres que les couleurs ne se détruisent point par un trop grand contraste; & que les parties remplies de moulures soient peintes de couleurs tendres pour en mieux distinguer les profils.'\*

\*56 The avoidance of strong contrasts seems to have been of particular concern to D'Aviler; and in the use of natural stones or marbles to differentiate architectural elements, a practice of which he warmly approved, he stressed particularly the need to eschew the placing of white against black. Instead he preferred the use of white, grey, or reddish stones; and for the fields of panels he particularly recommended as appropriate in this respect the employment of 'brèche' or of white marble with grey veins.\* The marbled paintwork of the Balcony Room is clearly consistent with the spirit of this advice; and,

were also possible, and, he continued:

\*57 'The Friezes and Columns may be White; the Bases and Capitals, Gold; and so may also the Ornaments be, to wit, Triglyphs, little Blocks and Foliage; the rest may remain as before'.\*

\*58 Similarly ordered systems may be seen in much of the trompe l'oeil architecture by such contemporary artists as Antonio Verrio, Louis Laguerre, and James Thornhill; and this way of looking at architectural colour formed the solid foundation upon which artist and architect alike approached the organisation of colour in architectural composition, whether painted or real. Even in rooms where there were no columns, their implied presence between dado (equating with the pedestal) and entablature was strongly felt, and their architectural relationship reflected in the colours and tones employed. This point, which Isaac Ware later made explicit in his Complete Body of Architecture published in 1756\* will be mentioned again in connection with the developments of the Palladian era discussed in the next chapter, but was vital too in seventeenth-century work, whether this was of a basic nature employing plain paint colour or was executed in marbling, the matter presently under discussion.

\*59 Another characteristic of such work during the later seventeenth century was that marble and its painted imitations were almost completely interchangeable. This was, perhaps, especially the case on columns, and many references to the marbling of such elements therefore exist. In 1669, for example, the columns in the Sheldonian Theatre, Oxford, an early building by Sir Christopher Wren, were 'don like Rance wth. a high varnish';\* and in the mid-1690s Celia Fiennes recorded that in the Hall of Sir John St. Barbe's house, Broadlands, near Romsey, Hampshire, were 'several rows  
\*60 of Pillars of wood painted like marble for to walke between'.\* Gerard Lanscroun painted the columns in the Staircase at Burley-on-the-Hill, Rutland (now Leicestershire), in imitation  
\*61 of a red marble some time just before 1700,\* and even the pillars in the House of Commons at Westminster may have been  
\*62 painted in imitation of white marble in 1707;\* whilst in the

Hall of the Painter-Stainers' Company in London was a 'handsome Screen, Arches, Pillars and Pilasters of the Corinthian Order' recorded in 1708 as painted to represent porphyry with gilded capitals.\* Marbling was employed too in fireplaces, vases, and other small details, and examples of this are discussed below. Using a related technique, tortoise-shell was also imitated at this date, being used for the columns and friezes of the new altarpiece in the Tudor Chapel at Whitehall Palace in 1676;\* whilst two years later Stalker and Parker commented critically on the generally poor quality of the imitation as provided by house-painters. It was, however, in their words 'frequently endeavoured',\* and other instances of its employment have been noted in the section on imitations in Chapter II above.

#### Graining

The technique of graining was touched on by John Smith, who adverted to the imitation of walnut and olive,\* and Pratt too referred to the finish, mentioning cedar and princeswood.\* Simulations of all four timbers as well as oak, it will be remembered from the Glossary in Chapter II above, are to be encountered in seventeenth-century accounts; whilst in the Drab Room at Erddig, Denbighshire (now Clwyd), the scheme involved also the imitation of yew. In view of its elaborate nature, this latter example is of particular interest, and a year after its execution in 1691 was described as, 'painted very well the pannells are resembling Yew, the [stiles?] to prince wood, and the moulding a light color'.\* In 1698, Celia Fiennes described a similar effect, which seems to have been in natural wood, in the Hall of Chippenham Park, near Newmarket, Cambridgeshire. This interior was, she noted,

'wanscoated with Wallnut tree the pannells and rims round with Mulbery tree that is a lemon coullour, and the moldings beyond it round are of a sweete outlandish wood not much differing from Cedar, but of a finer graine'.\*

Three walls of a room decorated in such a manner with graining and trompe l'oeil bolection-moulded panelling remain in Morton's Tower at Lambeth Palace, London.\* The paint is applied to late mediaeval feather-edged boarding, and is an important survival, splendidly illustrating the use of a

\*Fig. 35

lighter colour for the moulding and within the panels a richer figure than on the stiles. The cartouche which forms part of the trompe l'oeil chimneypiece contains the date 1691.\*

\*Fig. 36

Other specimens of seventeenth- and early eighteenth-century graining are said to survive at Ham House; Drayton, Northamptonshire; Great Hundridge Manor; and the Old Parsonage at Stanton Harcourt (at the last two in association with marbling).\*

\*70 That in the Balcony Room at Dyrham Park, however,  
\*71 cannot be of 1694 as has been suggested\* in view of the complete scheme of marbling which underlies it, but in its present state\* the room nevertheless probably gives quite a good impression of a uniformly grained interior of the period. This is useful, since schemes of such elaboration as those at Erddig, Chippenham, and Morton's Tower seem to have been exceptional rather than the rule. Even in Royal buildings, the accounts suggest that rooms would generally be painted in imitation of a single timber, a good example being those for the new lodgings at Hampton Court for the Duke and Duchess of York which were decorated in the early 1670s. In both their respective apartments, the consecutive presence chambers (or antechambers), bedchambers, and closets were all

\*72 painted walnut tree colour.\* Small areas of this have recently been discovered by the Directorate of Ancient Monuments and Historic Buildings and found to have been grained; and a microscope cross-section taken for purposes of the present

\*73 study has confirmed this to be the original paint layer.\* This example is particularly interesting since not only was each room grained in imitation of a single species, but the same timber was used throughout each apartment, even in the closets where one might have expected greater richness to be displayed.

\*Fig. 33

Other seventeenth-century examples where a single timber is mentioned in the painting accounts include the Dining Room in the new building erected for the Earl of Danby at Whitehall, which was painted 'walnut tree colour pencill grained'

\*74 in the late 1670s,\* and the King's Guard Chamber at Whitehall,  
\*75 which was painted 'wanscot collour graind' in 1687.\* At Kensington Palace too, in the alterations carried out between

\*76 1690 and 1694 it seems clear from the accounts that the grained rooms were painted uniformly either in imitation of walnut or oak, the paint often being varnished.\*

Ordinary  
house-paint  
in wainscoted  
rooms

A similar uniformity seems also to have been the norm in ordinary house-painting. John Smith, it is true, suggested paint could be applied to wainscot,

\*77 'listing [i.e. edging] quartering [i.e. framing] or panelling it as your fancy shall please; or else letting it go plain, and all of one Colour as you shall best like';\*

but he omitted the suggestion in the second and later editions of his book, and, apart from the rather special examples associated with the comparatively expensive finishes mentioned above, no examples of such a treatment in straightforward house-painting have been identified to date. The graining in the Drab Room at Erddig, the marbling in the Balcony Room at Dyrham, and the reputedly authentic schemes of graining, marbling, and Japanning at Great Hundridge, Stanton Harcourt, and Hill Court all called for the use of special finishes; whilst the white and grey on the wainscot in the scheme for Queen Mary's Closet at Hampton Court seem intended as a special setting for the panels decorated with japan. Nevertheless, it is just possible that the King's New Closet at Whitehall (partly painted using white, blue, and yellow in 1662)\* may have enjoyed such a scheme, and examples may well await discovery; but the general rule where ordinary painting was used seems to have been the application of a uniform tint over the whole wainscot. Looking, for example, at the accounts for such buildings as Kensington Palace (1690-4); Dyrham Park (1694); Ditton Park, Buckinghamshire (1705); or Montagu House, London (1704-8); the paintwork is simply priced per square yard, and in no case is mention made of items for special picking out.\* Since this would have involved a significant amount of extra work there can be little doubt that (unless associated with a special finish for which a special rate would have been negotiated, as in the Balcony Room at Dyrham) such a treatment would have been specifically mentioned as an 'extra over' item in the way

found in accounts from the latter half of the eighteenth century, when this practice was commonplace.

\*Fig. 37

An example of ordinary late seventeenth-century practice is provided by the wainscot in the Servants' Hall at Boughton House, Northamptonshire.\* The accounts show that this was 'twice done at 6.<sup>d</sup> pr y.<sup>d</sup>', the measurement of 94 yards and 5 feet corresponding exactly with it as it survives today. Although redecorated, microscope examination of cross-sections has shown it was originally painted a uniform reddish brown (corresponding with Munsell reference 5 YR 4/6), a colour and treatment consistent with the rate charged.\* Unfortunately, it was not possible to show that the paintwork of dull greenish colour in the rooms forming the late seventeenth-century State Apartment was contemporary, although this is disposed uniformly on the wainscot and illustrates in a very clear way the general appearance of large rooms treated in this manner.

\*80

Colours used

The range of colours known from painting accounts to have been used in practice includes:

Cedar colour  
cinnamon colour  
cream  
oak, or wainscot colour  
pearl colour  
princeswood colour  
sad colour  
stone colour (sometimes qualified as brown, light, sad, or white stone colour)  
timber colour  
umber colour  
walnut tree colour  
white (including white in nut oil and fine white)

\*81

The specific situations in which these were employed and the documentary references have all been given in the Glossary of colours in Chapter III above, and it will be remembered from Chapter II that a term such as cedar colour or wainscot colour did not necessarily imply the use of graining. Nor, on the other hand, did the absence of a specific reference to its being grained mean that this was not done. In addition, John Smith mentioned ash, buff, lead, and straw colours,\* all of which could have been used on wainscot, although ash colour and lead colour may have been more generally applied

\*82 to ironwork, such as that of staircases or the casements  
at Ham painted steel colour in 1638.\* The couleur de fer  
mentioned by the late-seventeenth-century French author  
Bullet in his book L'Architecture pratique published in  
\*83 1691 was probably reserved for similar purposes.\* A pale,  
neutral grey, however, was found beneath successive re-  
paints on the stiles of the wainscot in the Saloon at  
\*84 Beningbrough Hall, Yorkshire, a room of about 1718.\* A fur-  
\*85 ther colour, mentioned by D'Aviler, was olive,\* but although  
it seems likely it was used in England (possibly under the  
name sad colour) a proven seventeenth-century example of its  
employment is still needed.

The brighter and more expensive colours mentioned by Gerbier, Primatt, and John Smith (including brick, carnation, cerulian, flesh, green, grass green, willow green, and orange) have already been mentioned, and their apparently restricted use suggested. As may be seen, therefore, the palette of colours in ordinary use on wainscot seems to have been limited to: whites and off-whites; pale neutral or bluish greys; light, medium, or dark timber colours; browns; yellowish buffs; and dull greens. The primary reason for this was undoubtedly cost (a factor which will be discussed further in due course in connection with the considerations affecting the way colours were chosen in any given instance) and it was probably seen as inconsistent with use of the cheaper colours, to lavish extra labour on them by picking out the mouldings in a different tint.

Wainscot cornices  
and doors

Where, as usual, the cornice formed part of the timber wainscot, it too seems usually to have been painted uniformly with it. It will be remembered from the discussion above that it was seen as part of the 'order' of which the wainscot was composed (comprising pedestal, implied column, and entablature), and this concept was fundamental in all seventeenth- and eighteenth-century house-painting. Proof of this in practice is seen in the method of measurement advocated in early eighteenth-century text books. It will be remembered from Chapter II that in measuring wainscot for the pricing of paintwork, the vertical height was taken by running a piece of string around all the mouldings, and thus measuring

the height as if these had been flattened out. In connection with this, Venterus Mandey, the author of a contemporary text-book, specifically noted that one started from the top of the cornice, and its inclusion in the wainscot is thus explicit.\*

\*86 The panelling was, furthermore, usually painted the same colour above and below the chair rail, a convention expressed in the detailing of the majority of wainscots of the period, since the chair rail was generally made to stop short of the door and other architraves, its mouldings being returned to the frame. One would thus have had to strike an artificial line if the paintwork above and below this level was to differ. Doors too, as far as can be seen, were usually painted uniformly with the wainscot, since no evidence has emerged from painting accounts that they were differentiated in the way which became later practice. Their hinges too (commonly at this date L shaped and planted on the face) were probably often painted to match the joinery, since an item appears in the Kensington Palace accounts in 1692 for 'coloring all y<sup>e</sup> hinges of window-shutt<sup>rs</sup> & do<sup>rs</sup> in Imitation of Wainscott';\* whilst at Montagu House in 1705 the hinges and bars of five windows were painted

\*87 wainscot colour.\*

\*88

#### Skirtings

One element of the wainscot might, however, be differentiated, the vertical fascia of the skirting. It will be remembered that in the marbled Balcony Room at Dyrham the skirting was painted grey, and the practice of using a darker colour in this way seems to have been followed with ordinary paint, although, in view of the silence of many painting accounts on the matter, probably by no means invariably. An instance may perhaps be found though in the accounts for the Chapel Royal at St. James's Palace, where in 1662 an item appears for 'blacking the bottom of the walls underneath the hangings'\* and in his Mechanick Exercises, the third edition of which appeared in 1703, Joseph Moxon noted that a pencil was used 'in blacking the bottom, or lower parts of Rooms'.\*

\*89 The effect seems to be illustrated in the view of Samuel Pepys's Library in York Buildings, London, attributed to Sutton Nichols and originally bound into the catalogue of 1693.\* It is interesting that in this, the dark band appears to continue across the bottom of the door, a treatment which may also be seen in the upper room at 'Swangrove', Badminton, mentioned above in

\*90

\*Fig. 38



connection with japan. The fashion for dark skirtings seems to have had its origin in classical antiquity, since a drawing by P.S. Bartoli of an elevation in the Casino dei Quattro Venti in Rome, for example, shows a comparable dark plinth;\* whilst the same idea is found in an early seven-  
\*91  
\*92  
teenth-century Italian design for S. Silvestro in Rome.\* Seventeenth-century wainscot, moreover, was sometimes set on a dark marble plinth which thus formed the skirting. The Swedish architect Nicodemus Tessin, for instance, was informed in 1693 that at Versailles,

'il y a une frize ou bande de marbre noir de 8 pouces environ... qui r gne tout au tour des lambris de marbres en bas';\*  
\*93

and in the Marble Hall at Petworth House, Sussex (which was completed in 1692), the skirting at the base of the wainscot is of Sussex marble, providing a darkish plinth to the latter (which seems from microscope cross-sections to have been painted a pale bluish grey at a fairly early date).\*  
\*94

Lairesse too advocated the use of a dark colour at the base of an architectural composition, proposing this in his ideal scheme for the use of marbles already discussed; and in connection with tombs he later added:

'Note here that the Black must always be undermost, especially when divers Sorts of Colours are placed  
\*95  
on one another, as we have shewed in the Orders.'\*

Later, a dark brown skirting fascia was to become extremely common in England, and early eighteenth-century examples are believed to have been discovered in America, notably in the Parson Thomas Barnard House in North Andover built in 1715. In several rooms a painted black band four inches high runs around the base of the plastered walls where at a later period a skirting board would be expected.\*  
\*96

#### Windows

Too few references to the treatment of windows internally have been encountered to permit any conclusions to be drawn as to the way they were normally painted in relation to the colour of the wainscot. It may be noted, however, that in

1674 the windows in the Duke of York's Lodging at Whitehall  
 \*97 Palace were painted stone colour inside and out,\* whilst in  
 1694 the door and 'compass' sashes in the Hall at Dyrham were  
 \*98 painted wainscot colour.\* It is clear, therefore, that  
 either light or dark coloured paint would be used on occasion,  
 but it seems probable too that the timber was sometimes simply  
 varnished, allowing its natural colour to be visible. In  
 1687, for example, fourteen sash frames and four hundred and  
 seventy-two sash lights in the King's Apartment at the Volary  
 \*99 Building, Whitehall, were varnished internally;\* in 1692 the  
 insides of one hundred and fifty-three sash frames at Kensing-  
 \*100 ton Palace were given the same treatment;\* and fifty-eight  
 \*101 others followed in 1694.\* In 1705 the insides of five sash  
 \*102 windows at Montagu House were also varnished.\*

Unpainted  
 wainscots

Wainscot too could be varnished rather than painted. In  
 1691 the French author D'Aviler observed that if the joinery  
 was of decent quality and the timber of a good colour one  
 merely gave it several coats of varnish in order to give it  
 \*103 a unity of appearance;\* and John Eveyln recorded in his diary  
 on 10th September 1677 that the painted fir wainscot at  
 Euston Hall, Norfolk, did not please him as much as Spanish  
 \*104 oak without paint,\* showing that the same taste was to be  
 found at an earlier date in England. In 1690 twenty-seven  
 carved panels in the New School at Eton College, Buckingham-  
 \*105 shire, were varnished,\* and when Celia Fiennes visited Broad-  
 lands about 1696 she noted that the Dining Room was wainscoted  
 and varnished (as too, she observed, were the oak rails and  
 \*106 bannisters on one side of the staircase);\* whilst at Chats-  
 worth, Derbyshire, she recorded in 1697,

'every roome is differring work and all fine carving  
 and over the doores some of it [i.e., presumably, the  
 wainscot] is of the naturall coullour of the wood and  
 \*107 varnish'd only, others painted'.\*

Many wainscots of the period, including, for instance, that  
 of oak in the Cliffords Inn Room at the Victoria and Albert  
 \*108 Museum\* and those of cedar and Virginian walnut in the ground-  
 floor apartment in the Talman wing at Dyrham, may be seen in  
 this state, allowing easy appreciation of the richness pre-

sented by unpainted natural timber. In this connection, it seems reasonable to suppose that the carved pear wood decorations by such craftsmen as Grinling Gibbons were generally left in their natural state as suggested by Margaret Jourdain, who quotes Celia Fiennes's phrase apropos the carving in the 'house Chappel' in the Royal Apartments at Windsor Castle in 1698 'all white natural wood without varnish'.\*

\*109

On occasion too, it may be noted, fir wainscots also seem sometimes to have remained unpainted. In the Library at Wells Cathedral, Somerset, for example, is a good pine wainscot of about 1690 which seems never to have been either painted or varnished; and in his Essay Towards a Description of Bath, first published in 1742, the architect John Wood the elder (1704-54) remarked that about the year 1727 if the walls of a room had been covered with wainscot it would have been of a kind 'such as was mean, and never Painted'.\* Presumably a 'mean' wainscot would not have been of oak. In general, however, it seems likely that in rooms of reasonable quality fir would have been painted, especially since Ware observed in the mid-1750s that it had by then superseded oak as it was more easily worked and joinery was usually covered with paint.\* It is, perhaps, also worth remarking that oak too was sometimes painted, and it cannot be suggested that use of this timber necessarily implied its grain was originally left exposed. In several of the rooms at Wimbledon, it will be remembered, their oak wainscots were painted;\* in the mid-1690s the interiors of Lowther Castle, Westmorland (now Cumbria), were, apparently, being fitted up with painted oak wainscots;\* and it also seems certain that the oak wainscot in the 'West pavillion or Lady Sandwiches Apartm<sup>t</sup>', at Boughton, which today is waxed, was originally given three coats of oil paint.\* In this connection it must be remembered that the use of quarter-sawn boards for the panels, besides showing off the natural figure of the wood, also fulfilled a practical function, since boards cut on the quarter are less liable to bow with changes in relative humidity.

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\*111

\*112

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\*114

### The ceiling

Above the wainscot and its cornice lay the ceiling. This could take a number of forms and be elaborately decorated with relief plasterwork or be completely plain and flat. The

\*115 architect Sir Roger Pratt made fairly extensive notes on the varieties of form and panel shapes which could be used\* and discussed at some length the decorative finishes available. The normal treatment was clearly to,

\*116 'let them be first well sized, and afterwards whited with the best Spanish white'.\*

\*117 On two occasions he stressed the effect this had in bestowing upon the ceiling and its ornaments 'an exceeding smoothness and whiteness' to the extent that the whole would look as if it was polished;\* and he clearly regarded this with approbation. In addition he mentioned the use of trompe l'oeil painting to simulate panels and mouldings on ceilings above fifteen feet from the floor and the use of chiaroscuro ornament, but viewed this with less enthusiasm, remarking:

\*118 'I have observed that these painted ceilings do generally cast a gloominess upon the rooms where they are, except they be quicken by the gilding of the soffits and cornices, etc.'\*

\*119 Besides relief ornament, either real or simulated, he mentioned too the 'beautifying of the panels by painting', either by means of true fresco (the colours of which, he noted, 'seem faint, and to want their vigour') or in oil applied directly to the plaster or on linen. He also described the types of figures, cupids and the like, which could be used within the panels and amongst the painted clouds with which they were adorned.\*

In the hands of such artists as Antonio Verrio, who was brought to England by Ralph Montagu in 1672, Louis Laguerre, who arrived in England about 1684, or James Thornhill, complete ceilings were embellished with trompe l'oeil architecture from which allegorical figures looked down against a background of clouds and rays of light. Simulated mouldings might be painted in faux marbre, as in Verrio's ceiling in the White Closet at Ham House, and colour might also be occasionally introduced into the 'grounds' of false panels as in Thornhill's ceiling in the Queen's State Bedroom at Hampton Court, the design for

which hangs in the Picture Room at the Soane Museum. These compositions lie properly in the realm of fine art, and as such have been studied in considerable detail (most notably in the present context by the late Edward Croft-Murray), but nevertheless are important in connection with this study on account of the element of colour they provided in so many grand interiors of the period. Their status may be illustrated by the rate of £5 per square yard claimed by Thornhill for the ceiling in the Painted Hall at Greenwich (although he subsequently received only £3) against the rates charged for house-painting already reviewed above;\* and this shows clearly the complete distinction which must be drawn between the two. The use of colour on the false architectural elements contained in such ceilings may not, therefore, be sound evidence that colours or marbling were used in the same way on relief plasterwork, and there is, in fact, very little to suggest that in England house-paint was ever used in this way.

\*120

\*121

Two possible exceptions, however, may be found in drawings by Daniel Marot (1661-1752), a Frenchman who had left Paris by 1684 and worked in Holland before serving William III in the 1690s. During the earlier part of the seventeenth century the French architect Jean Cotelle (1607-76) had produced designs for ceilings whose grounds were coloured with blue or brownish yellow in a way analogous to the advice of Serlio mentioned above, whilst he also used other colours, most notably green and red.\* These may have influenced Inigo Jones, but certainly show fairly conclusively that coloured ceilings of this sort were in use in France in the 1630s and 1640s, and Marot is likely to have been familiar with similar examples. His design in the Victoria and Albert Museum\* shows the use of colour in three distinct ways: firstly in the blue, ochre, and grey washes applied to the grounds of the panels in the outer part of the design and in the central area and central panel of the cupola respectively; secondly the green applied to the edges of the strapwork; and thirdly in the touching of the edges of the foliage in blue, green, and red. In addition the flat framework is marbled in imitation of white marble with grey veins. However, although the design does appear to have been intended for realisation in moulded plaster rather than to have been painted in trompe l'oeil, neither the provenance nor the

\*Fig. 39

dating of it are known, and in terms of English plasterwork it is quite foreign and, indeed old fashioned in feeling. This must inevitably place reasonable doubt on its validity as evidence for common English practice in the use of colour during the latter part of the seventeenth century.

\*122 The other ceiling drawing (attributed to Marot) is in the Drawings Collection of the Royal Institute of British Architects\* and is less markedly foreign in feeling, although the cornice is denoted by the French term 'corniche'. The conception is that of Pratt's category of ceilings in which the central panel is embellished with a painting, but although the majority of the surrounding panels are simply given depth by the use of a grey wash on the drawing in the usual way, a tentative indication of gilding has been added on the ornament, together with a pale wash of red in the adjoining part of one panel. Vague as this is, it is clearly evidence that should not be overlooked, particularly bearing in mind Marot's influence on British design; but such drawings must be set against Pratt's clear conception of whitening, the finish used at Dyrham in 1694,\* as the norm.

\*123 There is, moreover, a complete absence of references to the colouring of ceilings in any of the contemporary painting or plastering accounts examined in connection with the present study, although several examples of the use of white have been noted. The accounts for the Queen's Chapel at St. James's Palace, for instance, show that its coffered ceiling was repainted 'white in nutt oyle' in 1679-80, the gilding on the

\*124 four easternmost bays being carefully washed and picked around;\*

\*125 whilst at Montagu House in 1705-6 two ceilings were painted 'with nut oyl 6 times over white'.\* Indeed, at the beginning of the eighteenth century, Richard Neve commented in his encyclopaedic volume on building:

\*126 'The Plaistered Ceilings so much used in England, beyond all other Countries, make by their whiteness the Rooms so much Lightsomer',\*

\*127 suggesting that this was almost a national characteristic; and in 1713 it was even reported that the ceiling of such an august interior as that of the House of Lords was in need of white-washing.\* In general, therefore, it seems that any colouring

of ceiling panels and raised mouldings or ornament would have been very much out of the ordinary; and it appears most likely that the vast majority of modelled plaster ceilings were simply finished in a uniform white.

Special colours  
and techniques  
on particular  
architectural  
elements

From the foregoing it will be seen that the evidence available suggests the ordinary post-restoration interior was fairly neutral in its colouring, a white ceiling being set above a white, stone colour, drab, or brownish wainscot. There were, however, several ways in which brighter colours could be introduced into a room. Besides the use of painted ceilings or paintings framed by ceiling plasterwork, over-door paintings (whose frames formed part of the wainscot) were a common feature. It goes without saying that the comparatively dull colours used on the wainscot itself were an admirable foil to the fine colours used in these paintings, and the same contrast applied in the case of the hangings of stamped leather, tapestry, damask, or other fabric with which the walls of more opulent and important interiors might be hung. The upholstery of furniture too was an important source of colour, and the brilliance and delicacy of the hues available in fabric would have been seen as a considerable contrast with the duller tones of the house-painter.

The fireplace

In addition, however, there was an extremely important element on which paint colours had a more assertive rôle, the fireplace. Peter Thornton has pointed out the way in which it was generally sited in each of the sequence of rooms forming an apartment so as either to face the visitor as he penetrated further into the more intimate interiors, or being placed on the flank wall opposite the windows;\* and Isaac Ware noted it formed an essential part of a well furnished room, commenting:

\*128

'The eye is immediately cast upon it on entering, and the place of sitting down is naturally near it. By this means, it becomes the most eminent thing in the finishing of an apartment'.\*

\*129

At the beginning of the eighteenth century, Neve mentioned the use of freestone, green-veined Egyptian marble, black 'fleck'd' marble, rance, or liver-coloured marble for chimneypieces, and black or veined Italian white marble for chimney footpaces.\*

\*130

In 1662 the new privy chambers at Greenwich Palace, Kent, for the King and Queen were provided with chimneypieces of 'Egypt marble';\*and elsewhere there is ample evidence of the pains taken in the choice of marble in domestic rooms. The Earl of Nottingham, for example, mentioned white and dove coloured varieties in correspondence overthe fireplaces being made for Burley-on-the-Hill;\* and amongst the papers relating to the Talman wing at Dyrham is a schedule of the different marbles to be used for those in that part of the building.\* In addition, John Percival (later created 1st Earl of Egmont) wrote to George Berkeley (afterwards Bishop of Cloyne) in 1722 urging the use of Irish marble at Castletown House, Co. Kildare, on which the latter had advised, in order that the house might be 'the epitome of the Kingdom'.\*

Lavish expenditure on marble could not, naturally, be afforded in every situation. Neve noted that marble chimneypieces might cost about £12 to £14 against 10s. to £2 for freestone or 10s. to £1 for timber, depending on their complexity and size.\* Naturally the more expensive material was often simulated, and concerning the use of timber Gerbier remarked:

'The Chimney-mantles ought to be all of Stone or Marble, but if (to spare charges) the upper frame, sides and top be made of timber it will be most seeming to have them painted as Marble.'\*

Examples of marbling in this way may even be found in Royal buildings. The chimneypiece in the King's Guard Chamber at Whitehall, for instance, was marbled in 1687;\* six more at Hampton Court were similarly treated in 1690;\* and there is an item in the Kensington Palace accounts for 'veining a chimneypiece' in 1692.\* In 1712 it was ordered that the stone chimneypiece in the Officers' Hall at Greenwich Hospital should be painted a marble colour, although it is interesting too that in 1716 it was proposed that no Portland stone chimneypiece in the building should be painted.\*

D'Aviler's advice on marbling wainscot, together with his stricture that on chimneypieces the surround should be differentiated from the frieze and cornice, has already been noted.



In addition, in discussing 'Grandes Cheminées pour Salles & Galleries', he advised:

\*141 'Les Chambranles des Cheminées aussi riches que celle-cy, doivent être de marbre, & le reste de la gorge de mesme matiere, ou de menuiserie peinte de marbres de diverses couleurs, & toute la Sculpture dorée ou façon de bronze.'\*

'Moyennes Cheminées pour les Chambres', on the other hand, could be more simply treated. One could, he suggested,

\*142 'peindre les manteaux de Cheminée de quelque couleur, & ne laisse que les bas-reliefs blancs dans les moindres appartemens, parce que les couleurs s'accordent fort bien avec les meubles.'\*

Sometimes, however, their treatment would have been still simpler. About 1700 six chimneypieces at Boughton House were  
\*143 painted stone colour,\* a tint which seems to have been extended to the wainscot forming the projecting chimneybreast in the Servants' Hall at a later date, leaving the remainder of the  
\*144 wainscot in the reddish brown already described.\* It was thus not merely the immediate architecture of the chimneypiece which might be differentiated from the rest of the room, but the projecting area of wainscot into which it was often set. This may be seen clearly in the elevation for one of the side rooms in John Talman's early eighteenth-century design for a Trianon at Hampton Court.\* The chimney surround appears to have been of rance, and the architectural ornament above either of different coloured marbles or of wood painted to simulate them; whilst the projecting wainscot of the chimneybreast (including its cornice) is coloured in a way suggestive of graining in the style of the reputedly seventeenth-century example in the Blue Drawing Room at Ham House.

\*Fig. 40

\*Fig. 41

A similar principle seems to be involved in several of the remarkable series of chimneypiece designs in the Hampton Court volume at the Soane Museum. The example illustrated,\* for instance, shows a white chimneypiece set on a projecting breast tinted in dull red. Upon the latter is superimposed yellow (i.e. probably gilded) and white carving. This composition

stands out against a second order shaded in grey on the left-hand side, probably in order to indicate the recession of plane, the shadow under the cornice being similarly indicated. In the drawing the cornice is left white, and it seems most likely, therefore, that the joinery elsewhere in the room was to be of that colour (unless its tinting was a matter still undecided when the fireplace design was prepared). Interpretation of the colours on other drawings in the set is often less certain, but the principle is nevertheless clear that during the second half of the seventeenth century the fireplace would often be treated as a special element, and that its projecting breast might also be differentiated from the wainscot in the remainder of the room.

More expensive  
colours on  
other elements

On occasion, there were in addition other small elements in an interior which might be picked out in a special colour. Not many have been noted in connection with the present study, but they include, for instance, the 'faire Bice' with which the new gold badges were picked in the Cabinet room at Whitehall Palace in 1660,\* and the blue used inside the tabernacle in the Queen's Chapel at St. James's Palace in 1680.\* Besides these, the ends of the seats, a doorcase, and other unspecified elements in the House of Commons were painted green in 1670.\* Marbling too would also have been used on some small items such as the busts on the staircase at Burley-on-the-Hill painted in imitation of lapis lazuli by Lanscroon some time before 1700;\* and it was obviously part of the way in which paint colour was approached that small features of this nature would add piquance to the generally drab overall colouration on the main painted areas. D'Aviler, it will be recalled, referred to the use of blue made using azurite, indigo, or smalt only for painting grotesque and ornament on a white ground;\* and the use of green in this way on panel mouldings and carved ornament was observed in one of the schemes for the decoration of Queen Mary's Closet at Hampton Court.

Gilding

The most important way by which emphasis was added to architectural mouldings and enrichments was undoubtedly by the use of gilding. The Office of Works accounts contain numerous references to the gilding of rooms, many of these being at Whitehall Palace\* where, in addition, the ceiling of the King's

\*151 Guard Chamber was silvered and lacquered in 1687.\* In  
general, it will be remembered, oil gilding was the norm on  
architectural elements, although the French author André  
\*152 Félibien did mention the employment of water gilding on stucco;\*  
but the only reference so far encountered to its use on an  
architectural fixture is in an account for locks in two of  
the four pavilions at Hampton Court fitted up in 1701 which  
\*153 had 'fine borders chased and water gilded'.\*

Precise details of the style in which a room would be  
gilded are scant, the only author noted who refers to this  
being D'Aviler, who simply remarked:

'Pour peu que les Appartemens soient propres, on y peut  
dorer quelques filets & baguettes, laissant les panneaux  
\*154 & le reste blanc'.\*

\*Fig. 42

There is, however, a drawing by Thornhill\* showing the gilding  
on the Speaker's chair at Westminster which indicates that the  
top fillet of the cornice, the carved enrichments of the entab-  
lature, the torus of the base, and the ogee moulding of the  
panels were gilded, an arrangement which may provide an analogy  
with the way in which the members of a wainscot might have been  
treated. In addition, at least one reference may be found to  
the gilding of the inside of windows, the casements (with their  
hasps, irons, and leads) in the Queen's Bedchamber at White-  
\*155 hall Palace being thus treated in 1662.\*

The survival of a virtually intact late seventeenth-century  
gilding scheme is therefore of great importance. Technical  
\*156 investigation\* of the Balcony Room at Dyrham has shown that,  
whilst the original marbling (mentioned above) has been oblit-  
erated by the present graining, the gilding on the entablature  
and capitals is original. That on the mouldings of the pilas-  
ters, dado, and panels at lower level also survives beneath  
the existing gold paint, and the same is true of that on the  
door architraves and overdoors which have a further layer of  
modern gold leaf superimposed. Standing in the room today,\*  
one can therefore appreciate the complete scheme of gilding,  
which cost £19 18s. Od. in 1694, at a glance and understand  
the careful way in which it was devised to enrich and define

\*Fig. 33

the architecture without upsetting the balance of its composition. At the lower levels the gold is applied to the convex mouldings, but on the entablature to the enrichments. The ground behind the individual leaves of the latter is not gilded, but all gold elements, including the capitals, are solid gilt.

\*Fig. 42

Naturally, in other situations different mouldings might have been gilded, and it is of interest to compare Hauduroy's scheme at Dyrham with that on the Speaker's chair:\* in the latter instance the top fillet of the cornice is included in the scheme, but, on the other hand, the top cyma recta is not enriched. Nevertheless, the general style of seventeenth-century gilding seems to be well represented at Dyrham, since Pratt seems to accept solid gilding of this nature as the norm. His observation: 'Vide whether the gilding be laid inwards or only superficially' on carved mouldings seems simply to imply a distinction between the solid gilding of individual motifs, such as those of the entablature in the Balcony Room, and solid gilding of both motifs and ground, as on the capitals.\* At this period, it therefore seems questionable that merely touching the highlights of carving with gold (as became fashionable during the second half of the eighteenth century) was practised, and Celia Fiennes' description of the 'iron barristers' of the Staircase at Chatsworth as 'tipt with gold' could well refer to the solid gilding of certain elements.\*

Advice concerning the choice of paint colours against which gilding was best set off was given by John Smith, who remarked:

'Gold looks well upon a White ground, especially if the matter to be gilt be carved.'

It looked well also, he added, against black, timber colour, or a horse-flesh colour made with the brightest Spanish brown.\* Gerbier too, referred to the use of white and timber colour in the context of gilding.\* The 'most glorious Ground[s] of all others for Gold', however, were considered by Smith to be the red of vermilion, the blue of smalt, or lake (laid as a glaze on a light ground).\*

Shadowing and  
trompe l'oeil

The context which Smith had in mind for this last piece of advice was almost undoubtedly that of the sundial or clock face, and a significant part of his book is devoted to detailed instructions for the painting of dial boards, including the shadowing of the numerals and trompe l'oeil mouldings to give them simulated depth. It was, therefore, probably with this in mind that he mentioned vermilion was shadowed with Spanish brown, and that umber was the 'natural shadow' for gold.\* The use of shadowing in this way is also described in John Martin's manuscript at the Soane Museum, where an illustration of the clock face on the tower of Watford church, Hertfordshire, as repainted by him in 1700 is given.\* Besides the normal shadowing of the gold circles and star using umber and a little 'Cullen's earth', Martin also shadowed the gilt cherubims in burnt umber; whilst, on account of the height at which the clock face was situated, the figures were shadowed with lamp black on both sides, a technique which he regarded as unusual.\*

\*Fig. 43

Shadowing was not employed solely on exterior clock faces, however. Pratt, for example, mentioned a price of 6d. per yard run for shadowing a gilt moulding three inches broad;\* and Gerbier, in an entry of particular interest, gave a price of 4d. or 5d. per foot for:

'Painting in white and gold, upon flat moulding, and set off with shading, like carving one Inch broad'.\*

In addition, John Smith mentioned the practice of 'diapering' on gold leaf, recommending that thin burnt umber could be used to 'flourish on it... whatsoever shall be suitable to your design'.\*

Besides the shadowing of gold and small areas of the expensive colour vermilion in order to produce a trompe l'oeil impression of relief on a flat surface, Smith also described the more mundane use of the technique on doors and gates. On these, he directed,

'if painted in Pannels, then the shadows of a White ground are UMBER and White, but if laid in a Lead-Colour, then the shadows are listed with Black.'\*

He also referred to the 'Pannelling of Wainscot with its  
\*168 proper shadows',\* perhaps a trompe l'oeil treatment similar  
to that carried out at Kensington Palace the 1692 accounts  
for which contain the item: 'The inside of y<sup>e</sup> Portico struck  
\*169 into pann:<sup>lls</sup> & grained & mouldings'.\*

Illusion was practised at this date on an even grander  
scale. Twenty-three trompe l'oeil windows were painted on the  
\*170 lead roof of Hampton Court in 1691-2,\* and false panels on the  
leadwork of the west towers of St. Paul's Cathedral, London,  
\*171 in 1708;\* whilst in the 1660s Robert Streater, the King's  
Sarjeant Painter, had simulated a 'rayle and bannister' on  
\*172 the wall of a balcony at St. James's Palace.\* Internally,  
Pratt's remarks concerning trompe l'oeil architecture and  
chiaroscuro ornament on ceilings have already received atten-  
tion, and in 1678 Streater was paid for 'Shadoweing the crotesco  
\*173 in the cupelo' of the Tudor Chapel at Whitehall Palace.\* Other  
important architectural elements could also be simulated.  
Sometimes this was even presented as an advantage, and as late  
as 1730 Nicholas Hawksmoor wrote to Lord Carlisle in connection  
with the entablature in the Belvedere at Castle Howard, suggest-  
ing that the cornice might be either of wood or stucco, but,

'as to the Architrave and ffreez, you may best do them  
by the painter, and have greater freedom for their orna-  
ments, then if they were made in Substance, and ye paint-  
ing will have a better effect, tho' the cornice must be  
\*174 made real because of its proiecture.'\*

The ornaments of the entablature in the First State Room at  
Boughton are painted in trompe l'oeil in this way, providing  
a good instance of the skill available in such work; but  
undoubtedly one of the richest simulations of the period must  
have been the King's canopy in the Tudor Chapel at Whitehall  
Palace which Streater painted with fine lake in 1675 to repre-  
sent crimson velvet, with gilding 'flickered' to imitate  
\*175 embroidery and the pile of the material.\*

## CONCLUSION

In the discussion above, apart from the varnishing of wainscot, four different decorative techniques for it have been identified: ordinary house-painting; graining; marbling; and japan. The first of these was clearly the most ubiquitous and seems generally to have made use of uniform white, off-whites, pale greys, light or dark browns, and perhaps dull olive green. The door was normally painted in the same colour as the wainscot, which included the cornice, although the skirting might occasionally have been painted black. In graining, the same principles were followed, favourite imitations including oak, walnut, and cedar. Both these finishes might be used in fairly ordinary interiors, but marbling was generally reserved for rather more special rooms such as the parlour or a particular reception room. Japan, however, was an extremely special finish generally reserved for closets. In general, bright paint colours were not used on large areas (as seems to have been fashionable in certain opulent interiors prior to the Civil War) but on occasion such hues could be introduced on small elements, or elaborately combined schemes of graining, marbling, or japan used to produce special treatment in particular rooms. Ceilings in most interiors appear to have been white, but in grand apartments and intimate rooms of a special nature might be embellished with painted decoration of a fine-art character. False architecture could also be used in particular instances, but the general context provided by house-paint throughout the Baroque period in Britain was conspicuously colourless.

Choice of the  
finish

\*176 Before looking more closely at the reasons for this, a little must be said about the choice of medium and finish. As already noted, whitening was the norm on plaster ceilings, and no doubt also on any vertical plaster faces above wainscot height, where its friable surface was unlikely to rub off onto clothing. Besides exhibiting an absolutely matt surface, its attraction as Pratt observed was its extreme whiteness.\* This statement must, of course, be qualified today, since, against the cold brilliance of modern paints based on titanium dioxide, chalk appears cream and slightly grey in tone, giving a markedly kinder effect, although this varies with the source of pigment employed. In terms of seventeenth-century technology, however, the advantage of whitening over oil paint was naturally its freedom from any tendency to discolour, and this was undoubtedly

what Pratt had in mind. The technique also had the added attraction, which should particularly commend its use today, of complete ease of redecoration, since it needs little effort to wash off and may, indeed, even be simply 'turned' with a wet brush. It is thus free from any tendency to build up on the plaster surface and gradually clog the details of modelled enrichment. White oil paint was nevertheless occasionally used on ceilings, as in the two rooms at Montagu House whose ceilings  
\*177 were painted 'with nut oyl 6 times over white at 18<sup>d</sup> pr yard',\* an extremely expensive procedure against the prices given by Gerbier for 'Whiting & Stopping of fret seelings', and for 'Whiting of new walles' already quoted in Chapter II.

Limewash was used in January 1696 on the brickwork in some of the inferior rooms at Sir John Moore's School, Appleby,  
\*178 Leicestershire;\* but in situations where it was anticipated clothing might come into contact with domestic walls and a cheap finish was required distemper would have provided a more satisfactory choice. No doubt it was used for this reason in  
\*179 1723 on the walls of the Great Stairs at Kensington Palace.\* Neve, amongst others, mentioned the practice, referring to  
\*180 'White-washing with Size upon Plaster'd Walls';\* whilst Gerbier interestingly also gave a price for 'Wainscot put into a Wale-  
\*181 nut red colour, in distemper',\* At 6d. per yard, however, the latter seems curiously expensive and since (as in the Servants'  
\*182 Hall at Boughton at the end of the century)\* two coats of oil paint could be afforded at the same price it seems most unlikely the technique would have found extensive employment on wainscot for long. In appearance, distemper, unlike whitening, can possess a very slight sheen. This is coupled with a tendency to show the path taken by the brush, an effect which gives a subtle life to the surface of plaster thus decorated, but one which is far removed from the exaggerated effect of much pseudo-antique paintwork produced today.

Undoubtedly, in the majority of cases the paint finish used on wainscot and other joinery was oil, as the most hard wearing. Its general characteristics have been described in Chapter II above, the marks of the brush again being held, but not to such an extent as to produce the aggressive and artificial finish often produced today in redecoration work.



As also mentioned, a general preference seems to have existed for an enhanced glossiness, but although experiment has demonstrated this could be produced using the technology of the day, it remains open to question how far the special techniques mentioned in the literature were widely employed. It seems most likely, however, that they were more of a curiosity than the norm in ordinary work (which would itself have dried with a moderately shiny finish); and undoubtedly part of the fascination of such a special treatment as japan lay in its possession of this attribute to an enhanced degree. Even where simply applied as a plain colour it was expensive, Neve indicating that white or black japan would cost 3s. or 4s. per yard\* (other plain ground colours mentioned by Stalker and Parker included blue, red, chestnut, and olive, although these may have been intended for furniture)\*; and the special nature of such extra-glossy paintwork seems clear from the particular mention accorded in the painter's account to the white applied to the front of the altar and Queen's seat in the Queen's Chapel at St. James's Palace about 1682-3.\*

Choice and  
organisation  
of colour

As already suggested, the primary reason why colours which would today appear uninspiring to many enjoyed such ubiquitous use on wainscot during the late seventeenth century must primarily have been a matter of sheer economics. They do seem, however, to have possessed another quality which had aesthetic appeal, the clue to which may be contained in a note made by Pratt, who observed: 'All painting ought to imitate the natural colour of the most excellent things in their kind.'\* It will not have escaped notice that with one or two exceptions the colours in common use all took their names from the natural materials of building, principally stone and different varieties of timber. Wainscots, furthermore, were very commonly painted in wainscot colour or in a shade corresponding with the colour of some other timber, whilst ceilings were whitened, the finish in both cases reflecting and enhancing the natural colour of the material from which they were constructed. Bullet, moreover, specifically recommended the use of couleur de fer on ironwork.\* Of course, colours other than brown, notably white, were sometimes used on wainscot, but a sense of appropriateness of colour seems to have been an important concept in the selection of paint.

In any case, choice of colour in a particular room was clearly regarded by Pratt as a vital part of the architect's job. He therefore stipulated in a memorandum: 'Leaves to be brought to the architect wherof to make his choice as to the colour.' An important factor in this decision was clearly the depth of tone to be employed, and he noted further:

'The colours for rooms ought not to be taken at random but to be chosen according to the much or little light, or space of the places etc.'

\*188 Elsewhere in his notebook he observed that the choice of colour should be made 'according as the rooms require to be lighter or darker', but unfortunately remained tantalisingly silent over the circumstances which might determine this.\* It is not clear, therefore, whether he had it in mind that light colours, for instance, should be used in small or north-facing rooms, or whether instead dark colours would be used to enhance a feeling of intimacy and warmth; and it has not so far proved possible to shed light on this by correlating his statement with information from the painting accounts mentioned above in this chapter since to date, with the exception of Dyrham, the disposition of colours in a complete building has proved impossible to ascertain. In fact, such ideas do not seem to appear in specific written terms until a century and a half later, and it may be that Pratt had other considerations in mind.

\*189 One such factor may well, for instance, have involved the setting off of pictures. Lairesse, for example, suggested that a light marble should be used as the ground for dark pictures, and conversely that light pictures should be set against dark marbles, a curious reversal of what might seem sensible today. As a painter, the matter was obviously important to him, and his other suggestion that if a room was to be hung with pictures one 'should consult Men of Experience, especially the Master who painted them, what colouring will sit best' is also interesting.\* A similar attitude was displayed by Isaac Bayly, who provided an estimate in 1705 for marbling and other finishes at Stoke Edith, Herefordshire, where the Hall and Staircase had been painted by Thornhill. In his letter he observed:

\*190 'Harly... says you like the greenish pattern for your great hall I think it will be best to advise with Mr Thornhill in that point for I may not only putt you to more charge but doe damage to Mr Thornhills worke for to paint very beautifull coullers will take the eye of [off] from his painting which is principall.'\*

\*191 It was no doubt for similar reasons of setting off the expensive colours in them that in 1744 Mrs. Delaney recorded having her English Room 'painted a sort of olive... for the sake of my pictures'.\*

\*192 On a purely practical level, a dark colour such as olive or the browns seen in many rooms at the Royal palaces in the 1670s, 1680s, and 1690s would have tended to hide the effects of dimensional instability across the grain of the wide panels in vogue for wainscot, and to some extent may have commended themselves for this reason. Fashion, however, was also important, and it may have been the external influence of France which led to the adoption of white and other light colours when Montagu House was redecorated in the 1700s.\* White certainly seems to have been employed extensively in French interiors: D'Aviler, for example, wrote strongly commending it as the best colour because, as he put it, 'il augmente la lumiere & réjoüit la veuë';\* and in 1693 the architect Nicodemus Tessin was informed that in Paris:

\*194 'on ne peint presque plus les chambres boisées, les portes, les volets, les jassis [chassis], les plafonds, les portes, etc., que de blanc avec des filets d'or ou sans or.'\*

Besides the factors which would constrain the choice of colour for wainscot during the seventeenth and early eighteenth centuries discussed so far, brighter colours also could have been seen within some sort of framework. Randle Holme, for instance, linked colours with the planets and their characters in the following way:

\*195 Red - Mars - dignity  
Blue - Jupiter - piety and sincerity  
Green - Venus - felicity and pleasure  
Purple - Mercury - honour and dignity.\*

It is not clear, however, to what extent this would have affected the choice of colour in an architectural context. Nor too is the status of John Smith's list of colours that 'set off best one with another'. By 'setting off best' he explained in the third and later editions of his book, he meant 'their making each other look most pleasant'.\* In particular, he recommended in the first edition:

\*196 Yellows set off best with Blacks, Blews and Reds.  
They set off indifferently well with Greens, Purples,  
and Whites.

Blews set off best with Yellows and Whites.  
They set off indifferently with Blacks and Reds.  
But they set not off with Greens, Purples, and Browns.

Greens set off best with Whites and Yellows.  
They set not off with Blacks, Blews, or Reds.

Reds set off best with Whites, and Yellows.  
They set off indifferently with Blews and Blacks.

\*197 Blacks and Whites set off well with all Colours,  
because they differ so much from all'.\*

\*198 In the second edition this list was shortened by omission of  
the disadvantageous combinations; reds were said to set off  
best with yellows, whites, and blacks; and greens were said  
to set off well with blacks and whites.\* In the third and  
later editions, another inconsistency was introduced by the  
addition of a statement that 'Green and Black put together,  
\*199 look not so pleasant'.\* It is difficult, therefore, to comment  
on Smith's suggestions, except to point out that he probably  
intended them as an aid in the design of clock faces rather  
than for architectural use. The pages of the first edition  
of his book are, it may be noted in this connection, headed:  
'The Art of Painting / Sun-Dials'.

In fact, the only suggested architectural organisation of brighter colours so far encountered is that presented by Lairesse in connection with the choice of marbles for the

different architectural orders. Tuscan was black, Doric green, Ionic yellow, Roman (or composite) red, and Corinthian white. This sequence arise from his conception of the orders as superimposed (in the manner of the Schools Tower at Oxford) and simply commenced with the darkest colour, black, at the bottom, working up to white at the top, saving only, he observed, that yellow was placed between green and red although lighter than both, since it was used in mixing the former.\*

\*200 Such a concept, though, is widely removed from the 'common colours' of wainscot; and, if adopted anywhere, was of quite specialised application. It seems unlikely, therefore, that suggestions of this nature would have been used in planning the colours used in the sequence of rooms forming an apartment, although the idea of rank was, as will be shown in a moment, of supreme importance.

In fact, there seems to have been a general tendency during the late seventeenth and early eighteenth centuries normally to maintain a single colour throughout a series of rooms. This has already been noted in the apartments of the Duke and Duchess of York at Hampton Court, the antechambers, bedchambers, and closets of which were grained in imitation of walnut in the 1670s. The accounts for the redecoration of Montagu House in the 1700s seem too to reflect a similar treatment. Lord Montharmar's Apartment, containing a total of 317 square yards (an area which seems from dimensions scaled from the plan and elevation published in the Vitruvius Britannicus to be equivalent to three or four rooms), was uniformly painted white in nut oil; whilst three rooms of the Duchess's apartment totalling 411½ yards were all finished alike with 'Japan varnish'.\*

\*201 The same idea may, perhaps, also be seen in the use of walnut tree colour in the Great Staircase, the adjoining Great Parlour, and the Family Parlour across the entrance Hall at Dyrham in the 1690s.\*+

\*Fig. 44 +202

This kind of uniformity was not an invariable rule, however, and the main apartment in the 1694 Hauduroy wing at Dyrham is a notable exception, each room being decorated in a different way. There was, though an underlying organisation of finish which started in the humblest rooms of the house and ended in the opulence of the closet of this suite of rooms.

The clue to this is given by the prices contained in the painting account of 1694.\* The cheapest colour, umber colour, priced at 9d. per yard, was used in the Servants Hall, Servants Parlour, the Nursery Rooms, and in an ante-room; whilst the second cheapest at 10d., cream colour and cedar colour, were used in the old Great Hall, the Church Room and passage leading to the Church, together with the Dining Room and one or two other more minor rooms. With the exception of the main apartment, all the other family rooms were painted in wainscot colour or walnut colour at 1s. 2d. Each set of rooms, it will be seen, was therefore carefully ranked in terms of the cost of its finish.

This hierarchy of colour, even by itself, is of extreme interest and is most revealing; but the contrast between it and the finishes used in the main apartment, where the rooms themselves were graded, is startling. The marbling on the wainscot of the Balcony Room, which formed the ante-chamber, cost no less than 3s. per yard; and as this interior was the only one in the house to be embellished with gilding it would have provided an immediate impact. From it one passed to the Bedroom, hung with costly tapestry set off (unlike today) by dark princeswood colour paintwork. Its dull richness would have been a calculated development from the Balcony Room, whilst beyond lay the climax of the Painter's art, the Japan Closet, decorated at a cost as high as 5s. per yard. Unhappily, its splendours are now left to the imagination, but the careful preparation for its effect is still evident.

At Dyrham, the lavishly decorated closet thus provided a fitting end to the enfilade, whose increasing magnificence and effect was closely related to cost. The apartment within which it was set, moreover, contrasted (as did the Dining Room at Ham) with the remainder of the house. No doubt a similar progression could have been found in other houses, and certainly often survives in physical terms in the gradual enrichment of the architecture as one progresses through a building. Altogether, therefore, choice of colour in an architectural context was not a random matter, but was conditioned by cost, together with the other constraints and considerations described above;

and it is clear that in the English baroque it was used with purpose and in a supremely controlled way to complement the design of the building, and carefully organised to set off the rich treasures a house might contain.

The Palladian  
philosophy

In Britain the early years of the eighteenth century saw a reaction against baroque architecture, here exemplified by the work of Wren and his contemporaries. This now came to be seen as over-licentious in its richness of form; and in 1715 a hitherto obscure Scottish architect, Colen Campbell (d. 1729), launched his campaign for a return to the simplicity which he believed was a feature of the antique. In the preface to the first volume of his Vitruvius Britannicus he deprecated the Italian architects of the seventeenth century, praising instead those of the fifteenth and sixteenth who had 'greatly help'd to raise this Noble Art from the Ruins of Barbarity'. Of these, he particularly singled out Andrea Palladio as having 'exceeded all that were gone before him, and surpass'd his Cotemporaries', commenting that he had developed the art of architecture to its greatest height and lamenting that since his death the 'great Manner and exquisite Taste' of building had been lost and that the 'Antique Simplicity' was no longer appreciated.\*

\*1

Palladio had, of course, been studied by Inigo Jones a century before, and Campbell elevated both men to the prime position in architectural excellence.\* Under the influence of their works, in the text describing the buildings he illustrated (especially his own) he therefore placed great emphasis on simplicity and on clarity of proportion. His ideas were soon taken up by Richard Boyle, Earl of Burlington (1694-1753), who made a particular study of Palladio when he visited Italy in 1719; and he in turn communicated them to his protégés, of whom the most important in connection with the evidence reviewed in this chapter were William Kent (?1685-1748) and Isaac Ware (d. 1766). The painted ceilings of the former will be discussed in Chapter VI, whilst, in 1756, only a couple of years before Robert Adam's return from Rome, the latter was to publish his Complete Body of Architecture, a work of considerable significance in summing up many aspects of architectural design which had preoccupied the Burlington School.

\*2



Of immediate importance to the use of paint colour in architecture was a growing emphasis under the Palladians on the use of stucco in preference to wainscot in grand rooms. The latter nevertheless continued in use, normally in the form of painted softwood, although on occasion hardwood might be employed as, for instance, in the mahogany panelling in the Library at Houghton Hall, Norfolk, a house designed by Campbell in 1721 and fitted up by Kent between 1726 and 1731. William Adam (1689-1748) also provided mahogany wainscoting at Holyroodhouse, Edinburgh, in 1740,\* but such instances were exceptional and Ware did not mention the use of hardwood in this way when he described the three ways of finishing rooms. These were: those in which the wall was 'properly finished for elegance' and whose stucco surface was 'wrought into ornaments'; secondly, wainscoted rooms; and lastly, those hung with paper, silk, tapestry, or something similar. The first was, he believed, the grandest and was suitable for rooms of great dignity, so that, he suggested: 'For a noble hall, nothing is so well as stucco'. Wainscot, on the other hand, was neatest and seemed most proper for a parlour; whilst hangings were, in his opinion, the most gaudy, and appropriate for rooms in which show was to be considered such as the apartments of a lady.\*

Palladian colouring  
Stucco walls

From the evidence available it is clear that one of the Palladian ideals was the stucco or 'stone' interior with white walls and ceiling and dark wooden doors. The latter would commonly be painted brown, but in particularly grand interiors could be made from mahogany. This extreme refinement of architectural expression runs obviously parallel with Campbell's desire for 'Antique Simplicity', and would allow the proportions of such rooms, with their counterpoint of solid and void, to be read with complete clarity, undistorted by any breaking up of the wall surface with colour. Undoubtedly, one of the greatest expressions of this is to be found in the Stone Hall at Houghton, described by Campbell simply as 'a Cube of 40 Feet',\* where the whiteness of the stone with which it is faced and the deep brown of the mahogany doors provide an exact physical realisation of the light and dark areas of hatching shown on his illustration.\*

\*Fig. 45

\*Fig. 56

\*6

\*7

\*8

\*9

\*Fig. 46

\*10

The same tonal balance may be seen in many other engravings and architectural designs of the period, including, for example, the drawing by Henry Flitcroft (1697-1769) of plate 68 in the first volume of Kent's Designs of Inigo Jones, published in 1727, discussed below in connection with gilding.\* Generally, however, it was realised by means of paint on stucco rather than in stone, and this seems to have been the case in the Gallery at Holkham, Norfolk, designed by Kent in the mid-1730s to receive Thomas Coke's collection of classical sculpture. When she visited the house in 1756, the diarist Mrs. Lybbe Powys recorded it was 'painted a dead white, with ornaments of gilding';\* and it will be remembered that 'clean white done in turpentine' (i.e. flatting) was also used at 44 Berkeley Square, London, another house by Kent, between 1743 and 1745.\* This finish was, perhaps, developed particularly for stucco, since at the same date Joseph Emerton was still advocating the use of glossy finishes on wainscot,\* and it was also used on both walls and ceiling in the Dining Room at the other London house designed by Kent, that for Henry Pelham in Arlington Street. This interior is specifically mentioned in the accounts for 1745,\* and the dead white was applied both to stucco and joinery. In addition, however, there is an item for 9½ square yards of chocolate, and it seems virtually certain this was applied to the doors and probably also the skirting in the way described in the last chapter since these items would have amounted to about this area. Also, although the room is, unfortunately, no longer extant (following demolition of the front part of the house in 1978 it now forms the ante-chamber to the staircase, and all the Kentian detailing is new) samples taken before the recent work from the Great Room above\* show that there both skirting and door were originally chocolate brown with a white dado and architrave.\* At Arlington Street, therefore, and no doubt also in a large number of other Palladian interiors, white and brown paint were used to reproduce the tonal balance between the areas of solid and void seen in natural materials in the Stone Hall at Houghton; although in this and probably many other instances with the addition of a dark skirting. Occasionally, however, an off-white was used, and investigation of the South Staircase at Nostell Priory, Yorkshire, which was completed by James Paine (c. 1716-89) about 1747, has suggested that, whilst the doors were clearly painted brown, the walls and their joinery, including

the doorcases, architraves, and skirtings were painted in a colour probably similar in tone to the natural sandstone of the Lower Hall and passages from which both it and the North Staircase (whose treatment was almost certainly similar) rise.\*

\*11 Such schemes seem to be portrayed in several paintings of the period, and white or off-white walls and ceilings are probably implied, for example, in 'The Staymaker' painted by William Hogarth about 1744\* and 'The Duet' by Arthur Devis of 1749.+

\*12 +13

The doorcase  
and architrave

In some of the earlier Palladian interiors, in addition to the door itself the doorcase too is dark. In the state rooms at Houghton, for example, all of which are hung, the doors and doorcases are made from mahogany; and the same treatment is extant at Russborough, Co. Wicklow, a house designed by the Irish Huguenot architect Richard Castle and built between 1742 and 1755. A similar tonal effect may be seen in a number of pictures of about this date, including Hogarth's painting of the Western Family which shows a greenish wainscot and cornice in which are set a brown door and architrave.\* The same tonality also appears on the door and its architrave in his portrait of the Strode Family (c. 1738)\* and in two pictures by Francis Heyman, his portrait of himself with a companion (c. 1740-5)\* and his portrait of John Hoadly and Maurice Green (1747)\*. All three are set in what otherwise appear to be white stucco rooms of the type just described, but in no instance, of course, is it clear whether the doors and doorcases were of natural timber or were painted brown. Also, all the portraits could have been set in interiors completed a few years before they were painted, and it is conceivable that the dark doorcase represented a transitional scheme which was dying out during the 1740s if not slightly earlier. Certainly, most of the later English Palladian rooms appear to have had doorcases treated, like the walls, in white or off-white.

\*14

\*15

\*16

\*Fig. 47

Hung or papered  
rooms

\*Fig. 48

\*17

\*18

Naturally, where rooms were hung or papered the above scheme formed the basis to which the coloured material was added between dado and entablature. Investigation of the Cabinet at Houghton;\* which was originally hung with green velvet,\* has shown that dado and entablature were white (as today) whilst the skirting riser was painted a dark brown.\* Here, the doors and doorcases are of mahogany, but in many

other interiors elsewhere the doorcase and architraves would undoubtedly have been white. This was probably the case, for example, in the new Great Room on the ground floor which Pelham added to his house in Arlington Street between 1748 and 1750 to designs Kent seems to have prepared before his death.\* By 1754 it had been hung with crimson damask,\* and the painter's account shows that the joinery and stucco were both painted dead white.\*

The survival of darker colours on wainscot

It was no doubt to rooms decorated with hangings in this way that Sarah, Duchess of Marlborough, referred when she commented enthusiastically in a letter of 1732 to her granddaughter Diana (then Lady John Russell) that in the rooms of her house in Grosvenor Street, London, then being redecorated 'the white painting with so much red damask looks mighty handsome';\* a remark which seems to argue a growing taste for white paint in contrast to the dull, uniform colours discussed in the last chapter. Nevertheless, these appear to have survived at least into the second quarter of the century, since at Eastbury, Dorset (demolished c. 1780), a house completed following the death of Vanbrugh by Roger Morris (1695-1749) between 1733 and 1738 with some modifications to the latter's design, Mrs. Powys recorded in 1760 that the Saloon (which according to Bishop Pococke, who visited the house in 1754, was stucco) was painted olive.\* There are in fact several references to the use of such colours, but more usually on wainscot; and as late as 1781 Mrs. Powys noted that in the Ballroom at Wanstead, Essex, (probably an addition to the house designed by Campbell in 1715 and demolished in 1824) was olive and gold.\* In 1729 the Best Lodging Room in the Mansion House, York, (probably the wainscoted room to the south-east of the Entrance Hall) was painted olive, and the Great Room on the first floor may also have been painted the same colour since this was used on its doors in the same year. Also at this date the 'fronttis Piece and door lineings' through which the latter was entered, together with the first floor Lodging Room, were painted oak colour.\* Such dark tones are shown on wainscots in paintings of the period, including 'An Assembly at Lord Harrington's' by Charles Phillips of 1739\* and in three scenes from Hogarth's series 'Marriage à la Mode' of about 1749.\* In the last of these, 'The Suicide of the Countess', where the wainscot is brown,

\*Fig. 49

this may, it is true, have been in order to create a deliberately old-fashioned atmosphere; but in the earlier scenes, 'Shortly after the Marriage'\* and 'The Countess's Morning Levée', the dark olive greens seem more likely to portray fairly commonplace practice in rooms of a domestic nature. In all cases, however, it may be noted the wainscots seem to have been painted a uniform colour as were the seventeenth-century examples discussed in Chapter IV; and the painting accounts for the Mansion House in York make no mention of picking out, suggesting this was the case there also.

\*28

+Fig.50

Although many of the examples described in the last paragraph may have lain outside the main current of Burlingtonian thought, a number of drawings by Palladian architects nevertheless suggest that, despite a move in favour of the use of white paint in many instances, the earlier dark tonality continued to be a feature of a significant number of new designs. An undated set of drawings for the Library at Gopsal Hall, Leicestershire, (demolished 1951) formerly attributed to John Westley (1702-69),\* for instance, one of which is illustrated,+ shows all the joinery washed in a fairly deep tone of brown, although it is not clear whether painted softwood or a timber such as mahogany was to be used. A comparable example dated as late as 1753 is provided by a preliminary design by George Dance the elder (d. 1768) for a room, possibly the Long Parlour, at the Mansion House, London.\* In this the wainscot stands to three quarters of the height of the room before a wall and entablature which are left white. In neither instance, it will be seen, is there any differentiation of tone between grounds and mouldings, suggesting that if paint was to be employed a similar uniformity was intended in execution. Both these schemes may be compared with that by Kent for Queen Caroline's Library at St. James's Palace, which (demolished 1825) was completed in 1737.\* As at the Mansion House the dark joinery was conceived as a subordinate order standing in front of the white plastered walls; but here it is interesting that Kent was at pains to render his drawing with different washes designed to indicate changes of plane and the modelling of both joinery and stucco. Altogether, therefore, it seems clear the baroque tonality continued to be used in certain instances, although, as already indicated, there was an inexorable move towards the

\*Fig. 52

\*Fig. 53

general use of white as the basis for most colour schemes; and by 1781 a visitor to Wimpole Hall, Cambridgeshire, a house where the late Christopher Hussey suggested nothing had been done over the preceding forty years, wrote:

\*29 'Most of it is furnished in old style... for example  
Mama's & my rooms are brown wainscots'.\*

Graining and  
marbling

By the middle of the eighteenth century it also appears that the use of graining and marbling, which had formed such a feature of baroque interiors, had declined. Although Kent used marbling in the Cupola Room at Kensington Palace in the mid-1720s, no instance of such a treatment has been encountered in any of the painting accounts examined in connection with the present chapter (except, possibly, the 'oak colour' in the Mansion House at York); and in 1747 Robert Campbell wrote in his book, The London Tradesman:

\*30 'When it was the Taste to paint Houses with Landskip  
Figures, and in Imitation of variegated Woods and Stone,  
then it was necessary to serve an Apprenticeship to the  
Business... but since the Mode has altered, and houses  
are only daubed with dead Colours, any Labourer may  
execute it as well as the most eminent Painter.'\*

Lighter colours  
on wainscot

Graining was not mentioned at all by Ware in his Complete Body of Architecture, and, bearing in mind the growing use of white in stucco interiors, it seems highly significant that, of rooms finished with wainscot, stucco, and hangings, he regarded the first as the lightest, observing:

'Other considerations being equal, a wainscoted room,  
painted in the usual way, is the lightest of all; the  
stucco is the next in this consideration, and the hung  
room the darkest.'

\*31 He even suggested that where 10 candles were needed to light a room with hangings, 8 would be sufficient for a stucco room, and 6 only would be required for a wainscoted room. This depended, he believed, 'on the plain principle that the most even surface will reflect most light';\* and it may, perhaps,

have been in his mind that, all things being equal in terms of colour, glossy paint would have been used on wainscots and flatting on stucco. Nevertheless, for this conception to work, he clearly had to envisage wainscoted rooms 'painted in the usual way' as inevitably being of a light colour rather than one of the dark tones so far discussed; and it is therefore of particular note that in the example bill of quantities he provided as a worked example for one of his designs, a parsonage in Yorkshire which was to be 'of small expence', he indicated that the three wainscoted rooms were to be painted in unflatted stone colour. This is clearly a parallel with the dead white used in the stucco rooms described above, although he did not make any mention of brown on the doors or skirtings.\*

\*32

In addition, other light colours were clearly in popular use. Robert Dossie referred to the tendency of Prussian blue to turn green, an effect seen, he observed, 'in all blue wainscots';\* and in 1731 a number of light colours were used on the wainscots in the newly completed Gibbs Building at King's College, Cambridge. Most of the rooms were, it is true, painted olive; but an almost equal number were painted pearl, one was painted brimstone and another 'fair Blew'.\* The account, incidentally, shows that many of the doors and some of the window shutters were painted chocolate or mahogany colour; but unfortunately it is not absolutely clear whether the other colours mentioned above were applied to the whole wainscot or merely to the area between a white dado and cornice. Since there is no mention of white in the bill, however, the former seems, perhaps, more likely. In this connection, it will be recalled that by 1734 Alexander Emerton was retailing a comprehensive list of light tints and other colours (see list given in full in Chapter III); and as in his 'Directions for Painting' he only mentioned the application of paint to wainscot, it appears probable that this was their intended employment, although the browns may have been used on doors and windows, and the lead colour on iron.\*

\*33

\*34

\*35

Coloured stucco

\*36

By 1744, on the other hand, in the revised version of the 'Directions' issued by his brother, Joseph Emerton, instructions for painting 'plaister-walls' were added.\* It seems most likely that in this instance paint colour was seen as analogous

to hangings of paper or fabric and was intended to be used in the situation they normally occupied between a flatted white dado and entablature. This development will be discussed more fully in Chapter VII as it seems to have been a feature of many rococo interiors and no specifically Palladian examples have been encountered.

#### Windows

\*Fig. 53

\*Fig. 48

\*37

\*Fig. 50

\*38

\*39

The treatment of windows seems sometimes to have been analogous with that of doors which has already been discussed. In Queen Caroline's Library, for instance,\* the door and doorcase were dark in tone, and this was repeated in the sashes and their architraves. At Houghton, on the other hand, whilst the doors and doorcases in the Cabinet\* are in mahogany, it is only the sash, sash frame, and shutters which are in this timber, and the window architraves were painted white. In the portrait of Paul Sandby by Francis Cotes of about 1760\* the sashes alone are of natural timber or painted brown within white frames and architraves, and other examples such as this, echoing the common treatment of the doors as dark within frames and architraves painted white seem likely to have been common; but on occasion too, it is clear, sashes could be painted white. They and their frames are shown quite deliberately white in the already-mentioned designs for the Library at Gopsal in a context of otherwise exclusively dark joinery,\* and the same effect may be seen in the window through which the miscreant is escaping in 'The Killing of the Earl' from Hogarth's series 'Marriage à la Mode', the room being hung with tapestry.\* In the, exclusively white, Dining Room at Pelham's house in Arlington Street too, the sashes were painted white, and it seems clear therefore, that practice was highly varied.\*

#### The fireplace

\*40

Ware's remarks concerning the importance of the chimney-piece were mentioned in Chapter IV. In the Complete Body of Architecture he defined two basic types, the simple and the continued, the former terminating at its mantelpiece or with a pediment at that level, whilst the latter had an upper work of wood or stucco, either plain or gilded, which continued up to the ceiling.\* In his Yorkshire parsonage, he specified 'flat' marble or Portland stone chimneypieces were to be employed; and by this he seems to have meant three simple



\*41

slabs of these materials set flat against the wainscot surrounding the openings.\* In better class interiors, however, it was common to have a more elaborate 'simple' chimneypiece, sometimes set below an overmantel formed out of the wainscot to make its continuation. Such an arrangement may be seen in the Gopsal Library design\* and in Dance's Mansion House drawing.\* In both instances it appears that the overmantel continued the brown tone of the wainscot, the stone beneath reading in a different colour. The top could, on the other hand, be treated as forming a unit with the lower half, and this may be seen in the scene 'Shortly after the Marriage' from Hogarth's 'Marriage à la Mode' in which the overmantel is shown in veined marble (or marbling) above a statuary marble chimneypiece.\*

\*Fig. 51

\*Fig. 52

\*Fig. 49

Two illustrations in a sketchbook belonging to John Adam (c. 1721-92) dated to 1748 are also of interest. They depict the chimneypieces in the 'Breakfasting Tower Room' and Parlour at Combe Bank, Kent, a house designed by Roger Morris. The former\* was a 'simple' chimneypiece with mirror and pediment above in which, he noted: 'All but the fascia of the Mantle & Jambs are of Wood. The Ground painted a light Green, and the Ornaments Gilt.' Although it is a pity nothing is known of the context in which it stood, the treatment of all parts of the chimneypiece as a whole is comparable with that of the example depicted in Phillips's 'Assembly at Lord Harrington's' where the chimneypiece and its superstructure appear to be made from a single variety of marble contrasting with the wainscot.\* The second Combe Bank chimneypiece\* was of 'continued' type, but here, Adam recorded: 'All the Architrave both in Mantel & Jambs are of Statuary Marble, the other part[s] are of a Green Ground in Wood with the ornaments Gilt'. In this instance, therefore, it seems that the lowest part alone was different from the remainder, a treatment which seems less carefully related to the architectural elements of which the chimneypiece is composed than that of the other examples reviewed.

\*Fig. 54

\*42

\*Fig. 55

The ceiling

\*43

When William Chambers visited Holkham in about 1750 he noted that the ceilings in the Saloon, Drawing Room, and North Dining Room were white with gold ornament,\* a scheme which may be compared with that already mentioned which had been drawn by Flitcroft in 1726 and is discussed in connection with gilding

\*Fig. 56

\*Fig. 51

\*44

\*45

\*46

\*Fig. 49

\*47

below.\* A white ceiling, it will be observed, is shown on the Gopsal Hall Library design, including the elevation for the fireplace wall\* where this is embellished with rather crudely drawn ungilded ornament. It seems certain from the painting account that the ceiling of the Dining Room at Henry Pelham's house in Arlington Street was painted dead white,\* whilst the ceilings in Ware's Yorkshire parsonage were simply to be whitened.\* White ceilings, furthermore, seem to be depicted in Hogarth's paintings 'The Staymaker'\* and 'Shortly After the Marriage',\* and perhaps too in 'The Duet' by Devis.+

Thus, although it will be obvious from the evidence discussed earlier in this chapter that the Palladian era saw notable developments in the colours used on walls, the same does not appear to have been the case with the decoration of ceilings. In an age looking for clarity of architectural expression it is, in fact, hardly surprising to find that ceilings continued to be decorated in white; and the advent of coloured grounds seems, as will be argued in the next chapter, to be related to some extent to the taste for the French rococo. Of course, throughout the Palladian era, certain very grand ceilings continued to receive decoration in the form of fine-art painting, most notably by Kent; but this too seems to have represented a continuation of baroque practice, and consideration of his ceilings painted 'after ye grotesk manner', which were also important in the development of the neo-classical ceiling, will accordingly be deferred to Chapter VI.

### Gilding

\*48

\*Fig. 56

Finally, attention must be turned to gilding, which seems to have played an important part in Palladian interiors from the start. Visiting Wanstead in 1727, Sir John Clark of Penicuik recorded that the Saloon was 'a fine room well finished in stucco, the roof painted by Kent... and the ornaments above gilded'.\* Gilding also formed part of the trompe l'oeil scheme Kent painted in the Cupola Room at Kensington Palace (ceiling 1722, walls 1725); and it is interesting to compare this with Flitcroft's drawing of plate 68, 'The side of a Cube Room',\* in the first volume of Kent's Designs of Inigo Jones since in the coffering of the latter the gilding is applied not only to the ornament but also to the flat of the outer ground in the octagonal panels. At

\*Fig. 57

Holkham, Kent's ceilings in the Saloon,\* Dining Room, and  
Drawing Room were sketched by Chambers when he visited in  
\*49 about 1750, and he noted they were 'White w<sup>th</sup> Ornaments gilt';\*  
whilst when Mrs. Powys visited in 1756 she mentioned the gild-  
ing in the Gallery, and the richness of that on the cornices  
\*50 in the Saloon.\* Gold was also used in the Saloon, Dining Room,  
\*51 and Drawing Room at Eastbury;\* and its presence in several  
rooms in this way may be compared with its employment in the  
Balcony Room alone at Dyrham in the 1690s.

At Houghton too, there seems to have been lavish use of  
gilding in the state rooms (but not in the Hall or family  
rooms); and investigation of the paintwork in the Cabinet has  
provided confirmation that the gold existing today in that room  
\*52 at least is original.\* Its style is therefore of particular  
\*Figs. 58, 59, 60 interest,\* and it will be noted that every enrichment is gilded  
and that the gilding has the same 'solid' character already  
observed in the Balcony Room at Dyrham. In both instances too,  
it will be seen, the grounds between the ornaments of the en-  
riched mouldings is left free from leaf, so that these read  
separately as individual embellishments. Altogether, the  
effect of the gilding in this room is extremely rich, and the  
whole scheme carefully worked out to provide a firm architec-  
tural coherence.

In 1747 Robert Campbell remarked that gilding seemed to  
\*53 be out of fashion,\* and it does appear that about this time  
Lord Chesterfield refrained from having gilding in his Library  
since this would interfere with the redecoration he believed  
\*54 would be necessary every four or five years.\* How far Campbell  
was correct, however, seems doubtful. In 1746, for example,  
the cornice and ceiling frame of the Dining Room at 44 Berkeley  
\*55 Square were gilded;\* and the description in the fourth volume  
of Vitruvius Britannicus published in 1767 indicates that the  
entablatures in the Great Staircase and Saloon at Brandenburg  
\*56 House, Hammersmith, were embellished in this way.\* The latter  
was rebuilt for George Dodington, the owner of Eastbury, by  
Roger Morris in 1748, and was inherited by his nephew, George  
Bubb, later Lord Melcombe, who, amusingly, was described by  
Richard Cumberland as 'rarely seated but under painted ceilings  
\*57 and gilt entablatures'.\* Moreover, in Hogarth's painting

\*Fig. 49

'Shortly after the Marriage' the further of the two rooms depicted has a gilded white ceiling,\* suggesting that about 1749, when it was painted, this treatment was still very much 'à la mode'. Finally, it may be noted, in 1750 Thomas Evans, a gold beater, was paid £115 for supplying '38,500 of Leaf Gold @ £3 per Mille' to Henry Pelham in Arlington Street, and some at least of this seems to have been used in his new Great Room since a reference occurs in the accounts dated that year to the provision of a scaffold there for the painters and gilders.\* Moreover, both at this house and 44 Berkeley Square, the accounts show that many items of furniture, including tables, mirror frames, and chairs were gilded.\* Altogether, therefore, in a large number of grand and important Palladian interiors, gilding played a major rôle; and in many ways the period seems to have been responsible for some of the most lavish use of gold ever seen in British architectural decoration.

From the middle of the eighteenth century, it became the established fashion to colour the flat grounds of ceilings, a practice contrasting with the hitherto apparently ubiquitous use of white discussed in the last two chapters on plaster not covered with a large trompe l'oeil scheme. In the present chapter three different facets of this development will be examined: the study and reproduction by, most importantly, Robert Adam, of antique ceilings surviving in and around Rome (which, Walpole noted, William Kent was the first to exploit);\* the use of coloured grounds in panels containing white relief ornament, which seems first to have been developed in rococo interiors; and the contemporary theory of beautiful colour as expounded by Edmund Burke. The tinted ceilings of Adam and his contemporaries are then considered as a special aspect of domestic colour schemes of the period up to about 1790.

Antique ceilings  
The precursors  
of Adam

Roman painting had naturally come to be studied during the Italian renaissance, and, by the late fifteenth century, painters had begun to imitate its style. The early sixteenth-century decorations by Giovanni da Udine, working in collaboration with Raphael, in the Vatican Loggia and at the Villa Madama in Rome, which drew on examples surviving in the Baths of Titus,\* are well known; and contemporary drawings of antique ceilings survive in the Codex Escorialensis, a sketchbook from the studio of Domenico Ghirlandaios illustrating the attempt made to study and record evidence of classical practice which then remained.\* In 1680, G.P. Bellori published Le Pitture antiche containing engravings of two or three ceilings and interior elevations then recently discovered, showing that interest in the subject was maintained. Within three decades, Kent, who set out from England in 1709, arrived at Rome in the company of John Talman (1677-1726), the eldest son of the architect William Talman (1650-1719) who had been Comptroller of the King's Works and responsible for a number of important building projects. It was not until later than Kent developed his talents as an architect, and in Rome his primary object was to study painting, having, Walpole noted, originally been apprenticed to a Hull coach-painter.\* One of his patrons was Burrell Massingberd

of Ormsby, Lincolnshire, for whom he seems to have designed a ceiling whilst in Rome; and Kent wrote to him in February 1717 relating that Talman 'would have me done this ceiling after ye grotesk manner... as what ye Ancients used'.\* His implication of Talman, who, judging from items in his sketch-book at the Victoria and Albert Museum,\* seems to have been keenly interested in architectural colour, is significant; and the latter's sumptuous set of Italianate designs for a Trianon at Hampton Court\* may well anticipate work which Kent was later to carry out in the Cupola Room and King's Great Drawing Room at Kensington Palace (1722-3). In the latter, Kent made use of a painted ceiling, the ground of whose cove is embellished with broken gilding on an earthy yellow ground, giving a mosaic-like effect no doubt reflecting the yellow wash on the cove and ceiling ground in the Vestibule of Talman's design\* and one of his Italian sketches;\* whilst the marbling on the doorcases of the Cupola Room at Kensington parallels the richly variegated varieties in the Vestibule of the Trianon.

\*Fig. 61

\*Fig. 62

Kent probably owed his appointment at Kensington to Richard Boyle, Earl of Burlington, who had met him in Rome and brought him back to England in 1719, and it furnished him with an opportunity to provide in the Presence Chamber (a room dating from the late seventeenth century)\* a ceiling of antique style. Its inspiration seems to draw on the work of Giovanni da Udine in Rome, and is close in spirit to those in the end compartments of the Garden Loggia at the Villa Madama. Painted in 1724, and described in the records of the Board of Works as done 'in Grotesque Painting',\* it seems to be the earliest large-scale English essay of its type surviving and combines coloured ornament and foliage on grounds of red and white. About fifteen years later Kent provided a similar ceiling in the Parlour at Rousham Park, Oxfordshire; and about 1746 painted the ceiling of the Front Drawing Room at the house of Lady Isabella Finch in Berkeley Square (now No. 44).\* This is composed of panels containing grisaille figures on grounds of blue, green, and red also close in feeling to those forming part of the design at the Villa Madama.

In the mean time, however, scholarship in the matter of antique ceilings was advancing, and new discoveries had been

made. In 1727 Bellori published Gli Antichi Sepolcri (a Latin edition of which, Veterum Sepulcra, followed in 1728) containing monochrome etchings of ceilings, walls, and mosaic floors discovered in and around Rome; whilst in 1750 a Latin edition of his earlier work on painting was published as Picturae antiquae. A particular study of antique painting was made by Richard Topham, a Berkshire antiquary, who about 1730 commissioned Francesco Bartoli (the son of Pietro Santi Bartoli, who had made many of the drawings for Le Pitture antiche) to make watercolour copies of surviving examples. Topham died in 1736 having bequeathed his collection, which contains many drawings of complete ceilings, to Eton College, where it has remained ever since. Another important group of Bartoli drawings is at Holkham Hall, Norfolk.\* At this time too, George Turnbull published his Treatise on Ancient Painting (1740) and his Curious Collection of Ancient Paintings (1741), whose identical illustrations showed pieces, many of which were in the collection formed by Dr. Meade; but no examples of the wall or ceiling context from which they had been removed were included.

\*11

About 1750, the French painter, Andien de Clermont, decorated the walls of Earl Strafford's Dining Room at No. 5 St. James's Square, London, in imitation of the Vatican loggiae.\*

\*12

Although the room has been destroyed, probably connected studies survive in an album at the Victoria and Albert Museum, together with drawings of classical ceilings, which, whilst untitled, can be identified as including examples from the Baths of Titus and mosaics from the vault of the Mausoleum of Constantina (Sta. Constanza).\*

\*13

The influence of such antique ceilings can be seen too in Clermont's better known rococo compositions, such as the singeries with which he adorned the ceiling of the Drawing Room at Kirtlington, Oxfordshire, (c. 1745) and in several ceiling drawings in the Victoria and Albert Museum volume. Of these, that for Lady Beauchamp-Proctor's South Dressing Room at Langley Park, Norfolk, (c. 1750) and another for an unidentified site\* are particularly interesting for their use of pink ground in the narrow frame defining the edge of the composition, an idea probably taken directly from antiquity and adapted to the rococo style.\*

\*14

Whether the young Robert Adam (1728-92) was familiar with

\*Fig. 63

\*15 Clermont's work is speculative, but it has been suggested\* that on setting out for Rome in 1754 his tastes included a 'softened rococo', which the tinted borders used by Clermont seem to reflect.

\*16 Although 'antique Mad' on arrival in that city,\* it is not immediately clear how far Robert Adam in his three years of residence made a special study of classical ceilings. Certainly, he felt the need for more information on the matter within a very few years of his return to England in 1758 and, perhaps ignorant of the Topham Collection at Eton, wrote to his brother James in Rome in 1762 to this end requesting, in particular, sketches of any painted ceilings at Herculaneum, a site he had himself visited in 1755 in the company of his mentor, Charles Louis Clérisseau, who made many drawings on that occasion. He enquired too whether James had had any ancient paintings copies by the artist Antonio Zucchi, adding, 'we are at a loss for their colouring'. Later the same year, in October, James wrote that he had had 'three very fine drawings made of antique ceilings in what they call Livia's Baths'.\*  
\*17 Nevertheless, it is clear, as will become apparent, that before 1762 Robert was familiar with certain examples at the Palaces of Titus and Augustus in Rome, and there seems too a strong presumption that he also knew the sumptuous volume of coloured illustrations published by the Comte de Caylus at Paris in 1757. This contained plates after drawings by P.S. Bartoli under the title Recueil de peintures antiques trouvées à Rome in a limited edition of one hundred copies.

Another traveller interested in the field was James 'Athenian' Stuart who had returned to England in 1755 after thirteen years abroad, visiting Rome, Athens, and Constantinople. In late 1758 Robert Adam had seen designs by him for ceilings at Spenser House, London, and others for Kedleston Hall, Derbyshire, and was thus, presumably, familiar with his work.\*  
\*18 It was probably the following year, however, that Stuart produced his singularly important design for the Painted Room at Spenser House, an elevation bearing the date 1759.\* It shows three bays divided by pilasters ornamented with coloured rainceau, whilst the two areas of wall flanking the central door are embellished with grey and blue medallions

\*Fig. 64



and rectangular panels in gilded or yellow frames set on a neutral, pale yellowish grey ground covered with blue and pink grotesque. The whole is remarkable for its neo-classical character, and indeed in the Works in Architecture which Robert and James Adam were to publish between 1773 and 1779 they gave credit to Stuart as having 'contributed greatly towards introducing the true style of antique decoration', although Kent, they acknowledged, had been the first to introduce grotesque paintings.\*

\*19

The early  
ceilings of  
Robert Adam

\*Fig. 65

\*Fig. 66

\*20

\*21

\*22

\*Fig. 67

The earliest coloured ceiling design by Adam to survive amongst the remarkable collection at the Soane Museum (which represents largely the preliminary sketches, office copies of completed designs, and a number of drawings rejected for one reason or another) is that dated 1760 for Lady Scarsdale's Dressing Room (later the Painted Breakfast Room) at Kedleston Hall.\* Its basic geometry is taken from a ceiling in the Palace of Titus at Rome, drawings of which survive amongst the Adam Collection at the Soane Museum\* and in the Topham Collection at Eton.\* Kedleston was one of Adam's earliest commissions, and provided him with an opportunity to realise in its interior planning his ideals of Roman grandeur and detail, although he took over a structure begun and partially erected to the designs of James Paine. However, whilst the form of the ceiling for Lady Scarsdale's Dressing Room is clearly based on a classical precedent, the drawing does not suggest he was punctilious in repeating its colouring. The ground within the frame of the central annulus is washed in a dark shade of grey rather than the red of the original (which in the version of the drawing at Kedleston is transferred to the indented square), whilst the red flowers and yellow foliage of his model are rendered instead in red, green, and yellow, the latter possibly indicating the intended use of gold; and it seems probable he was drawing on his knowledge of other classical examples such as the fragment of ancient frieze from the Villa of Hadrian at Tivoli in the collection at the Palazzo Farnese which Caylus had published in 1757.\* Similar comment may be made of the details in his design dated 1761 for the ceiling of the Dining Room,\* a finished version of which survives at Kedleston.\* The indented shape of the border and form of the grotesque foliage joining this to the cornice

\*Fig. 68

\*23

together with its blue colouration shows it to be derived from an antique ceiling in the Palace of Augustus,\* although documentary evidence suggests another scheme was adopted when the ceiling was eventually decorated in 1765.\*

\*Fig. 69

\*24

\*25

\*Fig. 70

\*26

+Fig.71

\*27

\*28

Another early commission was the interior of Syon Park, Middlesex, for which Adam provided designs between 1761 and 1763. His unexecuted design for the ceiling of the Drawing Room dated December 1761\* was superseded in March 1762 by a simplified version\* in which the six-sided panels were omitted, making it close in feeling to an antique example in the House of Flavia.\* Circles containing decorative figures are surrounded by stylised foliage in octagonal panels defined by four-sided shapes. The winged figures placed within alternate circles are, of course, derived from antique specimens, and resemble those published by Caylus,\* although these seem to be from a frieze and are on a dark brown ground. The colours of their costumes too are different. It is therefore interesting to recall that it was in February 1762 Robert had written to James in Rome asking for more details of classical colouring, over which, he confessed, he was at a loss. In August 1763 he produced two alternative designs for the ceiling of the Gallery.\* Of these, that executed+ is highly geometrical in form, but although it is difficult to point to a precise antique model, it is worth noting that its use of interlocking shapes is to be found in Roman work such as a late fourth-century mosaic vault compartment in the Mausoleum of Constantina (drawn by Bartoli\*), and also in the dome of the central compartment in the Loggia of the Villa Madama. As at the latter and in the ceiling from the Palace of Augustus which Adam had used in the Dining Room at Kedleston, the ground of the geometrical frame is coloured blue perhaps indicating that he was attempting to follow precedent for colour as well as form on such an element, just as he had for grotesque. It is also noteworthy that the Syon Gallery seems to be the earliest room for which both coloured ceiling and wall designs survive at the Soane Museum, although the latter, with its coloured neo-classical swags, was altered in execution.\*

Neither Adam nor Stuart, however, were alone in making essays of this nature. In 1761 William Chambers designed a

\*Fig. 72

painted ceiling\* for Lord Bessborough's China Room at Parksted (now Manresa House), Roehampton, Surrey. Its form was clearly based on that decorating the vault of a tomb at

\*Fig. 73

the Villa Corsini\* published by Bellori in Gli Antichi Sepolcri (1727) and it incorporated also the hanging festoons of fabric found in other classical examples including a ceiling

\*29

at Hadrian's Villa of which too Bartoli had made a drawing.\*

Both Chambers and Adam designed a painted ceiling apiece for Queen Charlotte at Buckingham House (now Buckingham Palace), London, which, by 1765, had been executed by Giovanni Battista Cipriani, an artist whom Chambers had met in Rome and who

\*30

returned with him to London.\* These share a common square, coved plan and incorporate on an uncoloured ground rectangular or circular panels with the blue and dark brown grounds found in antiquity, intervening spaces being filled by stylised foliage. No copy of Adam's design survives at the Soane Museum, but it appears in the Works in Architecture, and the colours

\*Fig. 74

shown in the Soane Museum copy\* correspond broadly with those in the illustration of the room published by W.H. Pyne in his

\*31

History of the Royal Residences (1819).\* Although no precise antique prototype has been identified, it is possible Adam may have taken the central motif from a ceiling at the Baths of Titus published by Bellori, a coloured drawing of which is to

\*32

be found in the Topham Collection at Eton;\* and if this is the case Adam seems in this instance to have reproduced the dark brown ground at the edges of the central octagonal motif. The layout of panels surrounding the central flat area may also stem from an antique source, and could have been suggested by

\*33

one of the ceilings published by Caylus,\* especially in view of the coincidence in ornament of those either side of the middle rectangle. Both Caylus and Pyne show this with dark brown grounds, although the Works plate shows them in a pinkish terra cotta. Whether the blue shown by the latter in the ground of the frame defining the octagon was executed is not clear from Pyne's illustration, but a parallel for the colour is to be found in the ceiling from the Palace of Augustus which has been

\*Fig. 68

illustrated in connection with the Dining Room at Kedleston,\* and Adam's intention in proposing it seems undoubtedly to have been that of using correct classical colour. Rather than slavishly copying antique examples, however, it seems clear that he was freely borrowing and adapting Roman motifs and

ideas in an attempt to adopt the principles used by the Romans and re-create the feeling of their interiors.

\*34 Other examples of this may be seen in the rooms he designed for John Sarjeant in Downing Street (No. 15).\*

\*Fig. 75 In the Drawing Room, his panels containing red, green, and yellow rainceau on a dark brown ground are separated by others containing paired mythical winged animals having horses heads on a lion's body on a red ground. This classical motif is similar to that used in his design of 1761 for the Earl of Hertford's Drawing Room at 16 Lower Grosvenor Street,\* whose otherwise enigmatic colouring is more or less unique and is, perhaps, best seen as an unsuccessful essay in the reproduction of the antique. He also experimented with an arrangement of circles around a central polygon whose sides were made concave to follow their form, a precedent for which survived, for example, in a vault discovered on the Monte Palatino in 1721 drawn by Bartoli.\*

\*Fig. 76 Examples based on this include the rejected design for the ceiling in the Gallery at Sion (1763), Mrs. Sarjeant's Dressing Room (1765), and the Music Room at Harewood

\*35 House, Yorkshire, (1765).\* Only in the latter, however, is there a discernible colour link between the blue ground of the medallions and reddish colouration of the inner frame, but the resemblance is not close. Altogether, therefore, although Adam's intention to use Roman colouring seems clear, there is not always a high degree of correlation with his specific sources; and it seems likely that, given the basic range of red, brown, and blue used by the Romans for medallions and panels, with the addition of green for panel frames, Adam felt free to interchange these as the design required. It is, moreover, noteworthy, that in none of these early designs did he propose the pastel grounds on large areas for which he was later to become famous.

\*Fig. 77 His overall intention that his ceilings should closely reflect Roman models was made explicit by Adam in a number of designs specifically labelled as being 'in the style of the Ancients'. The earliest of these to be noted is that for the Little Drawing Room (now known as the Alcove Room) at Audley End, Essex, which is dated 1763 and headed 'Design of a Ceiling in the Style of the paintings of the Ancients'.\* It was never

\*Fig. 78

executed, but its prototype is probably the ceiling discovered during the late seventeenth century 'en fouillant le terrain de la Vigne Corsini, hors de la porte Saint-Pancrace' published by Caylus in 1757.\* No such close source has been identified for his ceiling of June 1765 for the Dining Room of the Earl of Coventry's house in Piccadilly (No. 106) which is in the

\*36 'Style of the painted ornaments of the Ancients';\* but the spandrel ornament may usefully be compared with that on a ceiling at the Baths of Titus published in the Picturae antiquae, which the Bartoli drawing at Eton shows was also

\*37 coloured in a similar way.\* Also, the ribbon pattern in the main frame of the composition is very similar to a border with which Adam may have been familiar published in the second edi-

\*38 tion of Caylus (1783),\* although he reduced it to a single colour and alternated the hues of the flowers it contains. It is also worth noting that for Lady Coventry's octagonal Dressing Room in the same house, and quite possibly at a similar date, Adam again provided a design for a ceiling decorated with col-

\*39 oured classical motifs.\* This is matched by elevations in which pilasters ornamented with strips of coloured guilloche are

\*40 prominent,\* and there seems to be a stylistic link between these and his earlier scheme for the Gallery at Syon to which reference has already been made. Further parallels between these schemes, notably in the use of Greek fret and striated panels like those on the sarcophagus of Cecilia Metella, may also be seen. If a date of 1765 is correct for the Piccadilly elevations they form only the second or third example of coloured elevations for which a coloured ceiling design survives at the Soane Museum.

\*Fig. 79

The third instance in date order specifically noted as being 'coloured in the stile of the Ancients' is the Drawing Room at Shelburne House in Berkeley Square, now at the Philadelphia Museum of Art. Sir Arthur Bolton cites the date of Adam's bill describing the ceiling and elevation designs in

\*41 these terms as August 1766,\* but the surviving drawing in the Soane Museum is dated 1767.\* This may be a rejected version, however, since the end panels of the ceiling are shown with tinted grounds, an idea which as will be shown below Adam had first adopted only recently; and as displayed today the entire ceiling is white, having coloured painted ornament decorating

\*42

both it and the pilasters of the walls.\*

\*43

The final example is Adam's design of 1767 for the ceiling of the Gentleman's Dressing Room at Harewood, 'proposed to be painted in the Style of the Ancients', and its companion elevation of the same year.\* The room was circular on plan with the ceiling in the form of a shallow saucer dome. The pilasters (which sit on striated panels as at Syon and the Earl of Grosvenor's House), friezes, lunettes, and dome are painted with delicately coloured ornament based on classical prototypes; and in March 1768 Adam provided designs for a virtually similar room at Kedleston which was never executed.\* It seems likely that this was also the case at Harewood, for which he provided an alternative scheme,\* and it is a matter for some regret that both can only be appreciated today on paper.

\*Fig. 80

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\*47

\*48

For several years to come Adam produced further sets of ceiling designs in the same, 'pure' style, notably those for the Great Room at Fife House, Whitehall, (1766);\* the Drawing Room at Nostell Priory, Yorkshire, (1767);\* the Back Room on the first floor at Sir George Colebrooke's house in Arlington Street, London, (1771);\* and the Ante-room at Ashburnham House in Dover Street, London, (undated, but almost certainly 1773).\* None of these, however, approached the rooms for Harewood or Kedleston in splendour, and it seems clear that the new approach he adopted with regard to architectural colouring after 1765 had largely superseded his interest in such a purist approach. By then, instead of coloured ornament, tinted grounds had come to dominate his work, a fashion which seems to have been adopted by Adam later than other architects, but a manner of embellishment in which he was soon to become adept, and for which, indeed, he is best remembered. Nevertheless, his early essays in imitating antique painted decoration remained of paramount importance and continued to form a major part of many designs, if overlaid and sometimes totally swamped by tinted grounds to which attention must now be turned.

Tinted ceiling  
grounds  
Origins of  
the fashion

\*49

\*Fig. 81

\*Fig. 75

The use of pale tints on the main grounds of ceilings in England during the second half of the eighteenth century has origins which are difficult to establish conclusively since the fashion cannot be traced to a single source. Rather it appears to have resulted from a number of concepts current in the mid-eighteenth century, although it seems basically to represent a modification or adaptation of classical practice. It was known the Romans had used deep red or blue as grounds for significant areas on a number of ceilings in antiquity, and examples including two drawn by P.S. Bartoli,\* one of which employed a red ground throughout and the other red and dark blue,\* were recorded by at least the late seventeenth century. Apart from the design Adam made in 1761 for the Earl of Hertford's Drawing Room which has already been illustrated,\* however, colours of such weight are not to be found on large areas of ceilings during the second half of the eighteenth century; and it is clear that the idea was not adopted without significant modification. Nevertheless, an ultimately classical derivation for the concept of using colours other than white as a ground for white or coloured ornament seems most likely.

\*50

\*Fig. 61

Another factor which may be important can be seen in the effects of the Italian renaissance on English interiors dating from before 1750. As mentioned in Chapter IV a deep blue had been used in the sixteenth century on lines proposed by Serlio for the ground of the ceiling of Wolsey's Closet at Hampton Court; whilst in the 1720s Kent had coloured the grounds of the trompe l'oeil coffers in the Cupola Room at Kensington in a similar colour, and about 1735 used the same treatment in the ceiling of the Queen's Staircase at Hampton Court.\* As mentioned at the beginning of the present chapter, John Talman showed a yellow wash on the grounds of the cove and ceiling in his design for a Trianon at Hampton Court;\* but it seems most likely that he intended this to be executed in the same way as Kent's ceiling in the King's Drawing Room at Kensington Palace, using a mixture of relief for the principal architectural mouldings with ornament painted in trompe l'oeil on a ground giving the effect of gold mosaic. Kent later used the same technique in the Saloon at Houghton, but in view of the ubiquitous use of white on ornamental plaster ceilings elsewhere during the first half of the eighteenth century (a taste described in

Chapter V) these ideas of undoubtedly Italianate character involving the use of deep blue and gold do not appear to have suggested immediately the use of tinted grounds on English ceilings. Rather, they were probably seen as belonging to the tradition of painted ceilings exemplified in the work of such artists as Verrio and Thornhill. It may be significant, however, that at Houghton Kent seems to have used pale bluish grey grounds for some of the coloured grotesque painted on the flat ceiling compartments of the Cabinet, leaving others white,\* a device which helps to define the geometry of the ceiling in a way anticipating the later eighteenth-century designs to be discussed in this chapter; and a similar purpose may be discerned in one of the ceiling compartments from the Hall at Wentworth Castle, Yorkshire,\* in which Clermont used different ground tints to define the areas within and outside the painted trellis framework, together with the panel at the foot of the singerie.

\*Fig. 48

\*Fig. 82

Early examples

The first documentary reference so far identified which appears to indicate the use of coloured grounds on a ceiling containing raised ornament is contained in a letter from the fourth Earl of Chesterfield to the Marquise de Monconseil dated 5th September 1748. Having remarked on the lighthearted character of his 'boudoir', he noted:

\*51 'La boisure et le plafond sont d'un beau bleu, avec beaucoup de sculpture et de dorure'.\*

Another early reference is to be found in a slightly later letter from Lady Luxborough to her neighbour and correspondent, the poet William Shenstone. Living apart from her husband, Baron Luxborough of Shannon, she resided at Barrells, Warwickshire, until her death in 1756, and on 4th June 1752 wrote to Shenstone at the Leasowes with the following request:

\*52 'I must now beg the favour of you to instruct me about the ceiling of my bed-room, which I would have adorned a little with papier maché and the ground painted of a colour'.\*

In his reply two days later, Shenstone advocated ornament in



the middle of the ceiling and 'four Spandrells for the Corners', indicating that these should be painted white. Enigmatically, however, he omitted any mention of colour on the ceiling ground, recommending only: 'The whole Cove (except the Moulding) should be washed with Oker'.\* Although it is not clear he intended the flat central area to be treated in the same way this does not seem unlikely.

\*Fig. 83

In 1755 at least two rooms in the newly completed Norfolk House, St. James's Square, one of the most influential of London town-houses, certainly had ceilings decorated in 'party colours', a term later defined as being used 'where the framing is of one colour, and the pannels another'.\* George Evans's bill of that year,\* which was settled by the Duke in 1756, contains items for 'party colour'd' paintwork on the enriched ceilings of the Dressing Room and State Bedroom;\* and William Farington, who attended the opening in February 1756, wrote a long letter to his sisters shortly afterwards giving his impression of the interiors. In these, he noted, 'the Ceilings are most of them Mosaic [i.e. divided into panels], y<sup>e</sup> Ground Coulour'd the Patterns gilt'.\* Unfortunately it is unlikely that the complete colour scheme can ever be established since the building was demolished in 1938, and although the Music Room has been re-erected at the Victoria and Albert Museum the colours used in the State Bedroom and Dressing Room will probably remain a mystery. Nevertheless, it is of extreme interest that the ceilings of both rooms were in the rococo style set above an 'Enricht french Cornice',\* providing a possible link with French taste and the work of Clermont already discussed. In addition, it may be noted, although the shell of the house was by Matthew Brettingham (1699-1769), Kent's successor at Holkham Hall, a Piedmontese architect, Giovanni Battista Borra, who had joined Robert Wood's expedition to Balbec and Palmyra in 1750-1, was responsible for certain parts of the interior. It has therefore been suggested\* that these rococo rooms may also be linked with Italian work by Borra, in which case there may just possibly be a parallel with any colouring used in contemporary Piedmontese buidings, such as the Palazzo Carignano and the Palazzo dell Accademia Filarmonica in Turin; but for the moment this remains a matter for speculation.

Whatever the inspiration for these Norfolk House ceilings, however, their capacity for influencing British taste is clear. Horace Walpole, whose developing villa at Strawberry Hill reflected another aspect of the English rococo, wrote of the lavish opening reception:

\*59 'all the earth was there... You would have thought there had been a comet, everybody was gaping in the air and treading on one another's toes. In short, you never saw such a scene of magnificence and taste';\*

\*60 whilst the suite of interiors was described by Farington as 'alow'd... infinitely superior to any thing in this Kingdom, &... to most things... in Europe'.\* In 1756, it may be pointed out, Robert Adam was in Rome pursuing his single-minded studies of the antique; but Chambers had recently returned to London, and it appears unlikely that he should have remained ignorant of such an important suite of rooms. It therefore seems natural that he should have absorbed the idea of tinted ceiling grounds, and indeed in his Treatise on Civil Architecture published in 1759 he wrote implying that it was commonplace, indicating in his chapter on ceilings:

\*61 'The usual method is to gild all the Ornaments, and to leave the grounds white, pearl colour, light blew, or any other tint proper to set off the gilding to advantage.'\*

\*62 In the third edition of 1791 he added straw colour to the list,\* but had shown a yellow wash in the panel grounds in a design of 1760 for an ungilded ceiling for the Gallery at Richmond  
\*63 House, Whitehall.\* His design for the ceiling of the Gallery at Pembroke House, also in Whitehall, of the same year shows  
\*64 gilding on a pale bluish grey ground;\* whilst his contemporary  
\*65 drawing for that of the Saloon has a pink ground.\* Five years later, in 1765, he designed a ceiling for Mrs. Chambers's Drawing Room in which the ground is shown in green with the  
\*66 ornament white.\*

Bearing such precedents in mind, it is remarkable that the earliest drawing of this nature by Robert Adam to survive at the Soane Museum is dated as late as 1765, and it can only be

\*67

\*Fig. 84

concluded either that before then instructions over colouring were given separately, or that Adam was so pre-occupied with the ceilings painted 'in the Style of the Ancients' that he did not turn his attention to the use of tinted grounds until that year.\* Looking at some of his early essays in this idiom, the latter certainly seems the more likely possibility; and, for example, the very heavy green found in the unexecuted 1765 scheme for the Second Drawing Room at Harewood House (then Gawthorp), Yorkshire, suggests an unpractised hand. This drawing\* is, nevertheless, the first (by any architect) so far identified to show the use of two colours (green and pink), and contains, it will be noted, inset neo-classical medallions, thus combining elements from antiquity with the modern fashion.

From this moment, tinted grounds assumed an increasing importance in Adam's work, dated drawings at the Soane Museum indicating their use including only the single example discussed above in 1765, but five in 1766, ten in 1767, and by 1769 (when Adam was preparing the designs for the Adelphi) nearly sixty. The predominant ground colours used until 1769 remained green and pink, with occasional employment of straw colour; but before looking at the reasons why Adam should have adopted such utterly unclassical tints it is necessary to review a fundamental aspect of contemporary thought regarding the use of white relief ornament on a coloured ground.

The parallel use  
of coloured  
marbles

\*68

\*Fig. 85

Considering the use of coloured marbles in decoration Marc-Antoine Laugier, the French architectural theoretician, set out a number of rules in his Essai sur l'architecture published in 1753. In the first place, he observed (rather in the spirit of D'Aviler's already quoted late seventeenth-century advice on the choice of marbles to be imitated on architectural mouldings) that white marble without veins should alone be employed for sculpture, since any veining would confuse the outline, and distort the play of light on its surface. Coloured marbles, on the other hand, were, he directed, therefore to be reserved for columns, friezes, and inlaid panels.\* The point was taken up by Isaac Ware, who added the weight of classical example to the argument in his Complete Body of Architecture (1756); and, in discussing his design for an ornamental chimneypiece,\* he illustrated the correct use of

coloured marble. Noting that, on account of the sculpture, statuary marble would be his first choice (with pure black, though having a 'grave aspect', as a possible alternative), he obviously recognised that a coloured marble might be preferred, and added:

\*69           'Should a gayer marble be used, the Syenna is best; but in that case the festoons, and other ornaments, will be best in statuary.'\*

In other words, the raised ornament was to be carved in pure white marble, but set on a coloured ground. The idea can thus be seen to have been deeply rooted in mid-eighteenth-century thought; and Chambers too advocated the same practice, stipulating that all ornaments and figures on chimneypieces were to be made of pure white marble, whilst the friezes, panels, and tablets could be of coloured varieties. 'Festoons of flowers, trophies and foliages, frets and other such decorations', he observed, 'cut in white statuary marble and fixed on grounds of these, have a very good effect.'\*

\*70

Employment of marbles in this way, which may be seen in many fireplace designs of the period, is closely analogous to the use of tinted grounds on ceilings, leaving the ornament pure white. Treated in this way, the sculptured form of the mouldings and other embellishments could be appreciated against the darker ground in a way impossible with coloured elements on a white ground.

The means by which this practice was effected in paint are also worth considering in a little detail, since they are closely linked with the way in which design was approached, and, indeed, are implicit in the mode of expression used in eighteenth-century painting accounts. These do not, as might be expected, refer to items being picked out in colour, but rather to picking in, as in the following item from the 1772-4 account for the Drawing Room at Osterley Park, Middlesex:

\*71           'Pilasters ornamented - 4 oil flatt white and between the ornaments picked in twice with Blue Colour'.\*

In other words, the whole of the work was first painted in white, and the ground between the raised mouldings and decoration subsequently picked in with the desired colour. The completeness of description in the above example was, however, often abbreviated, the white being taken for granted. Thus, for example, a rate is given in the Builders Price-Book for:

\*72 'Frieze, once in oil, and picked in with green';\*

whilst, describing the walls of the Ante-room at Derby House, Grosvenor Square, in the Works in Architecture, the Adam brothers observed:

\*73 'The ornaments are all in stucco; and the grounds, both of the cieling and side-walls, are all picked in, with different tints of green'.\*

In reading such accounts and descriptions, it is therefore important to bear in mind the implication that white was used on the associated mouldings and ornaments.

\*74 Confirmation that the method of procedure described was used in practice has been provided by a number of investigations, including, for example, that of the Old Drawing Room at Pitzanger Manor, Ealing, decorated by George Dance the younger about 1770;\* but today many house-painters execute the necessary operations in reverse order, first colouring the ground, and then applying white to the ornament. This alteration in practice arises, no doubt, from a desire to produce a neater job; but during the eighteenth century it was more important to ensure maximum economy in the use of expensive colours, which one could not afford to apply where they would later be covered up. The finished effects of the two systems are, of course, subtly different in appearance, the modern method producing a much less lively appearance than the other, in which it is often difficult to get the brush to cut completely into the angles of intricate ornament; but in the present connection it is the link between the system and contemporary thought which is of paramount importance. Rather than a room or ceiling being seen as pink or green with white ornament, it was seen as white, certain areas of which had been given emphasis, definition, or beauty by having

been picked in with an appropriate colour. The significance of this for the way in which design was approached will readily be appreciated and will be considered further in the next chapter, but it is worth drawing attention here to the fact that Adam's rooms painted 'in the Style of the Ancients' were also based on a foundation of white. They thus shared the same outlook, which had been fundamental too to the Palladians.

Contemporary  
aesthetic  
thought

Returning to the tints which Adam and Chambers (and, indeed, the other neo-classical architects) used in their designs for areas which were picked in between the mouldings and ornaments, it is necessary to consider why these were so different from anything to be found in antiquity. Was it simply that the colours used by the Romans, such as those already illustrated, were so dark that they would have produced extremely oppressive and gloomy interiors of a kind unacceptable to English society, or was there a more profound reason for their rejection? Undoubtedly their weight would have presented an obstacle to their general employment, and this may have been the reason why Adam did not repeat his experimental 1761 scheme for the Earl of Hertford's Drawing Room;\* but an equally important, and far more significant factor is to be found in contemporary aesthetic theory, which must now be examined in some detail. It emerges most clearly from the writings of the statesman, Edmund Burke, in whose Philosophical Enquiry, first published anonymously in 1757, delicate and gentle tints in colouration became enshrined amongst the attributes of beauty, as distinct from those of the sublime.

\*Fig. 75

Burke, who had considerable influence on the thinking of at least one contemporary architect, William Chambers, identified two natural qualities of the material world, the sublime and the beautiful. He regarded the former as representing all that was grand, awe inspiring, or likely to induce terror, and therefore distinguished from beauty, which he described as,

\*75 'that quality, or those qualities in bodies, by which they cause love, or some passion similar to it.'\*

These he determined as comparative smallness, smoothness, variety without angularity of form in the members, delicacy,

and clear and bright colouration, and discussed each in turn, showing how their several natures are appropriate to the ideal of beauty. In the case of colour, he observed that although an infinite variety of colouration was to be found in nature, there was, nevertheless, a common factor which could be discerned; and he concluded accordingly:

\*76 'First, the colours of beautiful bodies must not be dusky or muddy, but clean and fair. Secondly, they must not be of the strongest kind. Those which seem most appropriated to beauty, are the milder of every sort; light greens; soft blues; weak whites; pink reds; and violets.'\*

Clearly, this list relates exactly to the palette of delicate ground colours Adam was using on large panels in ceilings by the end of the 1760s. It also, incidentally, sums up the fragile glazes of the famille rose porcelain which had been imported from China for a quarter of a century; but Burke's notion of the sublime stood in stark contrast to these, such sort or cheerful colours, he argued, being unfit to produce grand images. For this reason, a mountain covered with shining green turf was nothing to one dark and gloomy, a cloudy sky was more grand than one which was blue, and the night was more sublime and solemn than the day. From this it followed naturally that,

\*77 'in buildings, when the highest degree of the sublime is intended, the materials and ornaments ought neither to be white, nor green, nor yellow, nor blue, nor of a pale red, nor violet, not spotted, but of sad and fuscous colours, as black, or brown, or deep purple, and the like.'\*

\*78 These dark and gloomy colours would, of course, have been readily associated with wainscots painted brown, such as the examples described in the last two chapters; and it was, perhaps, with this reasoning in mind that Walpole, in a letter of 1760, spoke of the Great Apartment at Chatsworth, Derbyshire, with its ceilings painted by Verrio and Laguerre, as 'trist', commenting on the sombre effect of the unpainted wainscot it contained.\* For the same reason, the heavy colours used by the Romans would have been seen as sublime, rather than beautiful,

and hence, no doubt, unsuited to domestic interiors intended for social use.

Burke's theory, moreover, contains another facet which is important to the use of colour by architects such as Adam. Whilst variety was considered by Burke to be an important quality possessed by beautiful objects, uniformity, by contrast, he considered to be productive of the sublime. Hence, in the passage quoted above, 'spotted' colour was to be avoided in grand interiors, a point taken up some years later by Chambers, who, arguing the importance of uniformity against mere bulk, contrasted St. Peter's, Rome, whose form, he said, was confused by ten thousand colours which divided the attention, with the powerful and immediate impression made by the much smaller church of Sta. Maria di Carignano at Genoa, which was of a consistent colour.\*

\*79

However, although inimical to the sublime, variety was shown by Burke to be desirable in beautiful objects, not only for itself, but important also in the further role it could play by reconciling the otherwise anti-pathetic strong colours to the concept. He was thereby able to explain the agreeable quality of the bright colours in the necks and tails of peacocks, and about the heads of drakes. Thus, to obtain beauty, he observed,

'if the colours be strong and vivid, they are always diversified, and the object is never of one strong colour; there are almost always such a number of them, (as in variegated flowers,) that the strength and glare of each is considerably abated.'

\*80

Not only does this passage explain the reason why, during the second half of the eighteenth century, architects felt drawn to use more than one colour on ceilings; but it also provides a convincing justification for the incorporation of neo-classical medallions into the design in the way shown by Adam in his 1765 drawing for the Second Drawing Room at Harewood already illustrated.\* Both he and Wyatt also introduced coloured arabesque into such ceilings, its brilliant hues too being absorbed into their composition. It is, moreover, worth adding that this facet of Burke's argument had been anticipated to some extent by Laugier, who remarked that

\*Fig. 84



a sweet harmony of colours,

'is not at all incompatible with some bold contrasts or, rather, becomes more marked when among the complementary colours there are some which upset the tranquility through the effect of dissonance.'\*

\*81

Such additional authority would amply have justified Adam in using also in his designs the small areas of blue, dark brown, or bright red found in the Roman ceilings already discussed.

The coloured  
ceilings of  
Adam and his  
contemporaries

Bearing in mind the virtually complete justification given by contemporary aesthetic theory for Adam's compositions, it is possible to review the use to which he and other architects put colour in their ceilings. Although the primary object here is not to discuss Adam, it must be appreciated that it is difficult to assess the contribution of his contemporaries once he had taken up the idea of coloured grounds in 1765. Apart from the comparative scarcity of surviving coloured drawings by other architects, only a very small proportion of these is accurately dated; whilst at the Soane Museum alone are about three hundred such designs by Adam, a precise chronology for the majority of which is provided by their manuscript inscriptions, often to the day of the month in which they (or the set of which they formed a part) were completed. It also seems that Adam was far more inventive than others in his use of colour, especially in his earlier work, and much of his palette was peculiar to him; whilst some of the later drawings are of unparalleled subtlety in the spareness and austerity of their tints. For this reason it is necessary to examine first the development of Adam's work as revealed by his surviving drawings, and, having established an outline of this, turn to consider by comparison the designs of his contemporaries.

Robert Adam

Dated drawings by Adam and his office for at least two hundred and fifty-nine different ceilings with tinted grounds survive at the Soane Museum. Most are coloured, but in several instances a line drawing has a colour scheme noted on it in pencil. Of the collection, the earliest is dated 1765, and the last drawings to indicate the use of colour 1783. The numbers of dated coloured designs produced over this period

\*Table (x)

are interesting, the graph\* rising rapidly to a peak in 1769 and then following a generally downward trend to the early 1780s. Although the numbers could, no doubt, be supplemented by collating Adam's other surviving drawings, it seems unlikely that the general progression seen in his annual totals would be greatly affected; and in general, therefore, the Soane drawings have been used in assessing Adam's work.

\*Fig. 67

\*82

\*83

\*84

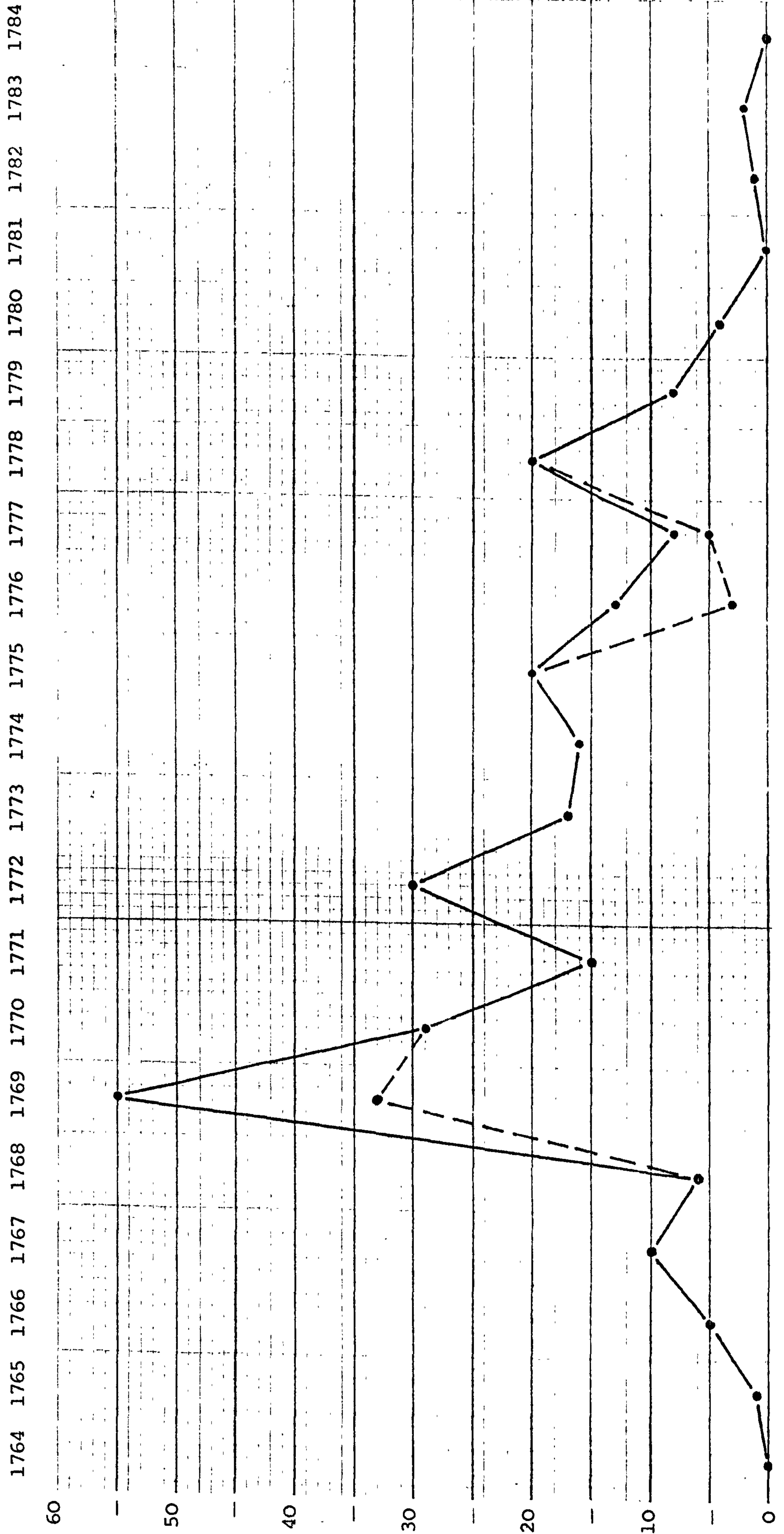
Adam's seemingly late adoption of tinted grounds in 1765 was clearly a major step away from pure classical precedent. For nearly two decades there seems, as already shown, to have been a growing fashion for this treatment, and it is interesting to speculate that Adam may have been resisting it in favour of greater faithfulness to the antique. Nevertheless, he eventually succumbed to the taste, his originally quite archaeological ceiling in the Dining room at Kedleston\* apparently being given a 'pale purple' ground when it was eventually painted in 1765;\* and it may be significant that, apart from contemporary designs by Vardy, Chambers, and other architects which may have paved the way, many of the drawings by Giuseppe Manocchi in volume xv of the Adam collection at the Soane Museum have coloured grounds. Manocchi is known to have been in England between 25th April 1765 and 29th July 1766, and payments to him by Adam over this period are recorded.\* His drawings generally show a rather heavy hand in the tinting of their grounds, which in some cases seems closer to classical prototypes than the designs associated with Adam; but it nevertheless anticipates some of the ideas he was to use within the next four or five years, in particular the incorporation of coloured ornament on a coloured ground and a change of colour on the line of foliage ornament rather than at an architectural member.\* Both of these aspects will be considered in more detail below, but Manocchi's role in Adam's early use of coloured grounds seems possibly to have been of some importance.

\*Fig. 86

A decade later, in the Works in Architecture, Adam spelt out retrospectively the reason for his adoption of coloured grounds. The ceiling he had designed in 1767 for the Library he built for Lord Mansfield at Kenwood, Middlesex,\* was in the form of a segmental vault, and like his earlier ceiling for Harewood, incorporated panels of painting in a neo-classical

Table (x) Numbers of dated ceiling designs by Adam at the Soane Museum which have tinted grounds, showing his output from 1764 to 1784.

Dotted line excludes ceilings for Adelphi and Portland Place speculations.



style. It was, he stressed, 'in the form and style of the ancients', whilst, he also noted, 'the grounds of the pannels and freeses are coloured with light tints of pink and green'. This colouring, presented by him in a way which could lead the reader into thinking it was his own invention, was justified in the text which followed. It was employed, he observed,

'so as to take off the glare of white, so common in every cieling, till of late. This always appeared to me so cold and unfinished, that I ventured to introduce this variety of grounds, at once to relieve [i.e. give modelling to] the ornaments, remove the crudeness of the white, and create a harmony between the cieling and the sidewals, with their hangings, pictures, and other decorations.'\*

\*85

In Lady Bute's Dressing Room at Luton Hoo, Bedfordshire, also (whose design in the Works in Architecture is dated 1769) he coloured the grounds of the ceiling 'with various tints to take off the crudeness of the white';\* and his anxiety to stress an avoidance of the starkness, and unbroken brilliance of a completely white ceiling and create a harmony with the walls seems very much in tune with the philosophy of Beauty propounded by Edmund Burke. The idea that, at the same time, a coloured ground would allow relief ornaments to read better has already been discussed, and it is of particular interest that Adam should state it here, explicitly in connection with ceilings. Nevertheless, it appears there were no classical precedents for light green and pink used in this way, and that Adam was drawn to written justification of their inclusion in his work seems, perhaps, to indicate that he recognised this. Probably, however, he felt able to view colour in the same way as he saw the architecture of Syon, where, the brothers claimed,

\*86

'we have been able to sieze... the beautiful spirit of antiquity, and to transfuse it, with novelty and variety'.\*

\*87

As Dr. Stillman has pointed out, this attitude appears to reflect that of the Italian writer and engraver Giovanni Battista Piranesi, who had considerable influence on Adam

and remarked in his Diverse maniere of 1769:

\*88 'The human understanding is not so short and limited, as to be unable to add new graces, and embellishments to the works of architecture'.\*

\*Figs. 84, 86 There seems, therefore, no reason why, having once accepted Burke's logic, Adam should not have felt free to continue to use the forms and conventions of antiquity, whilst setting them in a context of general colour which reflected contemporary improvements in taste; and indeed roundels or rectangular panels containing neo-classical scenes or figures, such as those already seen in his early Harewood and Kenwood designs\* continued to form an important element in many of his designs, appearing even in the last of his dated coloured ceilings at the Soane Museum.

\*Fig. 89 Besides such motifs, however, he also continued to incorporate many-hued grotesque and foliage on both white and coloured grounds, together with the coloured fan motif for which he is well known. The latter first appears amongst tinted grounds in his design for the ceiling of the Library at Osterley Park dated 1766,\* but is not to be found in the Soane drawings after 1778 or 1780; whilst the former are present in drawings dating between 1767 and 1779. In his early essays, such as that for the ceiling for the Drawing Room at Shelburne House,\* areas of arabesque still tended to form a major part of the composition; but later, as in the ceiling of 1769 for David Garrick's Drawing Room in the Adelphi,\* were often relegated to strips or borders set into an otherwise virtually completely coloured series of grounds. His example was followed by James Wyatt, who produced several designs in this idiom, including that discussed below for the Drawing Room at Aldwark Hall, Yorkshire, of about 1775;\* but after 1771 or 1772 Adam's use of the motif declined still further in prominence, whilst nevertheless remaining an integral, if less assertive, part of the composition. His use of a coloured ground for arabesque, seen, for example, in the Shelburne House drawing, also followed the same course, coming eventually to play the subtle role which is seen in his design for the Lady's Room in the Earl of Bective's house at Headfort, Co. Meath, of 1772.\*

\*Fig. 79

\*Fig. 87

\*Fig. 115

\*Fig. 88

Such coloured ornament was often executed in the same manner as the more strictly artistic ceiling paintings, being applied to paper or canvas which was later pasted into position on the ceiling. The practice is illustrated by a letter the Earl of Northumberland wrote to Adam on 4th November 1763 in connection with progress on the ceiling of the Drawing Room at Syon. He was pleased, he said, 'that Mr. Rose [the plasterer] will get the Cieling... complete before the Frost comes on, so that it may have time to dry fit to be gilt early in the Spring', by which time, he hoped, 'the Painting's will be ready to be fixed up';\* and an extant example of coloured grotesque executed in this way may be seen in David Garrick's Drawing Room ceiling, now at the Victoria and Albert Museum.\* The care taken in important cases is well illustrated by correspondence Chambers had in 1770 over the Library or Drawing Room at Woburn Abbey, Bedfordshire: firstly an Italian painter went to Woburn to check the dimensions and see the way in which the light fell; secondly Chambers himself made a visit to fix up some paper patterns; and finally he was able to report the work was nearly finished and the painters (i.e. artists) would soon visit to put it up.\* At Somerset House in 1780, the pictures in the Council Room of the Royal Academy were pasted up by Charles Catton;\* and later the technique was mentioned in their chapters on house-painting by the early nineteenth-century authors, Thomas Martin and Peter Nicholson.\* The latter referred to the use of both paper and Irish linen for the purpose, but indicated that he disapproved of the practice.

In Adam's early days, both the artistic painted scenes and the grotesque seem to have been executed by artists of some standing. These have received considerable attention from Edward Croft-Murray,\* and included Angelica Kauffmann, her husband Antonio Zucchi, Giovanni Battista Cipriani, Michele Angelo Pergolesi, and Biagio Rebecca. At Kenwood, Zucchi's bill of 1769 shows he provided the paintings inset in the ceiling and walls of the Library;\* whilst at Somerset House Chambers's accounts for 1780 show that in addition to Angelica Kauffmann, Cipriani, and Rebecca, the artists Sir Joshua Reynolds, Benjamin West, and I.J. Rigaud supplied paintings,\* whilst Catton and William Evans did the house-painting.\* The arabesque in the pilasters of the Syon Gallery, on the other hand, was executed

by Pergolesi, who was paid for this between 1766 and 1768,  
but the landscapes over the chimneypieces were by Francesco  
\*98 Zuccarelli.\*

\*Fig. 79

A similar use of different artists for the two elements  
of the composition may be found in the ceiling of the Drawing  
Room at Shelburne House.\* Here, Cipriani supplied the inset  
painting but Zucchi the grotesques, and both seem to have been  
inspected by Lord and Lady Shelburne before being brought to  
\*99 the site.\* It is also interesting to note that, as pointed  
out by Dr. Stillman, the former is very different in composi-  
tion from the roundel shown on Adam's design, but the latter  
\*100 follows his drawing fairly closely in principle.\* The details,  
however, have clearly been slightly elaborated. A year or so  
\*101 later, by contrast, Rebecca's contract of 1768\* shows he was  
responsible for all the antique style artistic embellishment  
of both kinds in the Alcove Room at Audley End, in which he  
provided the six coloured arabesques in the flank walls, six  
chiaroscuro bas reliefs in the frieze, the central roundel of  
the ceiling, and all the painting in the ceiling of the alcove.  
As at Somerset House, both here and at Syon the implication is  
that a house-painter had prepared the grounds; and the division  
of standing between him and the artist is brought home in a  
comment made by William Burgh in the 1783 edition of William  
Mason's poem The English Garden (1772-81). The Gardener in  
his sense and in that of the poet bore, he observed 'the same  
relation to the Kitchen-Gardener as the Painter does to the  
\*102 House-Painter'.\*

At Somerset House, however, the trompe l'oeil ornament  
in the ceiling of the Royal Academy Exhibition Room, which  
included foliage ornaments of stone colour, four lion masks  
encircled by chaplets of oak leaves, and paintings in chiaro-  
scurro representing the genii of painting, sculpture, archi-  
\*103 tecture, and geometry, were provided by Catton.\* He, perhaps,  
may have been regarded exceptionally as worthy of such an  
undertaking, but by 1823 Nicholson noted that 'ornamental  
painting', which he described as 'the executing of friezes  
and the decorative parts of architecture, in chiaro-obscura,  
or light and shade, on walls or ceilings', was one of the four  
\*104 branches of house-painting.\* Probably, in fact, this was work

which had sometimes been entrusted to specialist tradesmen, but, until the new style had been established by the artists employed by Adam and others, required the hand of a painter working within his idiom to ensure faithfulness to the new ideals.

Discussion so far has, it will be appreciated, been limited to coloured grotesque and other ornament painted onto a flat ground, but besides this Adam also seems to have coloured ornament which was executed in relief. The ceiling in the Library at Osterley Park, for instance, is framed by a series of square panels containing alternately central rosettes and masks within a circular wreath interlaced with four ribbons, and an ornament at the angles. This was all executed in relief plaster, but his drawing of 1766\* shows all the raised ornament of these squares in colour on a white ground. His precedent was clearly taken from the 'Ornamenti di stucco e pitture' discovered in the Palace of Titus in 1688 and published by Caylus in 1757;\* and Adam obviously followed the colouring of the original. It is also interesting to note in passing that he made use of the same motif in his 1771 design for the Back Parlour of Sir George Colebrooke in Arlington Street, substituting blue on the ribbon and gold on the wreath;\* but in 1769 had rendered it in the more ordinary way in the ceiling of the Drawing Room at No. 1 Adam Street, tinting the grounds and leaving the ornament white.\*

\*Fig. 89

\*Fig. 90

\*105

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\*Figs. 91, 92

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\*108

Two other instances where Adam seems to have intended the use of coloured raised ornament, this time on a tinted ground, may be found in the ceilings of the First and Second Drawing Rooms which he designed for Baron Ord at 8 Queen Street, Edinburgh, in 1770. In the latter\* the anthemion in the panels radiating out from the corner of the room is executed in relief and is shown painted in red with green leaves; whilst the foliage in the small spandrels between these panels is coloured dark pink on a brown ground. A precedent for this can be found on one of the Manocchi drawings,\* and similar colouring is used on the central annulus. In the First Drawing Room,\* the raised foliage in the border of the central oval is decorated in a comparable way, this scheme having in fact been proposed earlier for a similar part of the ceiling in the Drawing



\*109 Room at No. 4 Adam Street in 1769;\* and was again employed in  
the design for the Second Drawing Room at Chandos House,  
\*110 Chandos Street, in 1771.\*

Foliage and rosettes naturalistically coloured in this way are shown on other drawings by Adam, although whether it was intended that these should be executed in relief is not clear. Indeed, until proved by technical investigation there is no evidence that the proposals for the Library at Osterley and Drawing Rooms at Queen Street were put into effect; and, as with the alternative scheme Adam provided for his 'antique' Gentleman's Dressing Room at Harewood already discussed, it may have been intended that the ornaments should either be executed in relief and left white, or painted in colour on the flat. In terms of pure colour, however, it may be noted that between 1769 and 1771 Adam seems to have proposed the use of rather heavy, naturalistically coloured ornament in a number of drawings, some of which, as may be seen in the design for Colonel Burgoyne's Ante-room in Hertford Street of 1769,\*  
\*111 perhaps seems rather coarse to modern eyes.\*

\*Fig. 93

\*Fig. 84

\*Fig. 94

\*Fig. 95

It is clear from a glance through the volumes at the Soane Museum that throughout his working life Adam continued to divide his ceilings into panels whose shapes were copied from those in ancient examples, and it is unnecessary to elaborate the point here. The use of tinted grounds, however, allowed their geometry to be emphasised in increasingly complex ways. Adam's Harewood Second Drawing Room scheme of 1765\* shows the use of two colours at its simplest, the central square and flanking rectangles being defined by a pink frame; but by 1767 he was producing much more subtle essays, prominent amongst which is that for the Principal Dressing Room at Harewood.\* Its central roundel is divided into geometrical areas by curved lines of foliage, and by tinting these in green, straw, and pink Adam was able to give definition to them whilst focusing attention inwards towards the central fan. The same idea may be seen in many of his 1769 drawings, notably in his design for the ceiling of the Drawing Room at Newby Hall, Yorkshire,\* where the employment of green, pink, and white grounds emphasises the geometrical basis of the whole composition. Here, in addition, Adam used both coloured grotesque and small areas

of richer colour in the grounds of the smaller panels to punctuate the whole whilst adding piquance and further contributing to analysis of the geometry. This in itself was not a new idea, and as early as 1766 he had used dark blue and green in the guilloche and small central panels of his design for the ceiling of the Great Drawing Room at Mersham le Hatch, Kent;\* but the importance of its employment at Newby, a scheme thoroughly in accordance with Burke's philosophy, is its role in defining the more complex form of the ceiling panels.

\*112

It is clear, however, that Adam was not content to let matters rest there, and in 1769, his most prolific year, a new and vitally important concept in his use of colour appears. So far, the ceiling designs reviewed have remained static in composition, their tinting emphasising a simple analysis of their layout, but he now produced a number of designs in which shapes overlapped. Crucial to his use of colour in the presentation of these was the freedom he felt to change colour on a line of foliage ornament rather than solely on an architectural moulding, a device already noted in his ceiling for the Principal Dressing Room at Harewood\* and in some of Manocchi's drawings of the mid-1760s.\* The ceiling design for No. 8 Adam Street dated 1769\* illustrates the point at its simplest. By changing the colour of the grounds on the line of the foliage intersecting the circular reeded moulding Adam was able to present the central shape either as a circle within which was a cross-shaped figure, or as a circle overlapped by a cross with rounded ends; and he used a similar idea in another scheme of the same year for the Earl of Eglington's house in Piccadilly.\* Much more complex, however, is his 1769 design for Sir Robert Rich's Front Drawing Room in Grosvenor Square\* in which a circle defined by quadrants can be seen on the one hand, but a simultaneous analysis of the composition as a cross shape defined by segmental panels along the sides of a square is equally possible. Later examples include the Duchess of Bolton's Dressing Room at Bolton House (1770),\* the unexecuted design for the Second Drawing Room at No. 20 St. James's Square (1772),\* and the Front Drawing Room of Mr. Wescott's house on the west side of Portland Place (1776).\*

\*Fig. 94

\*113

\*Fig. 96

\*114

\*Fig. 97

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\*Fig. 98

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Although a comparatively simple example by Paine (discussed below) may be found, such designs seem remarkable in the context of the vast majority of the work produced by Adam's contemporaries until his obsession with movement in terms of the physical form of architecture is recalled. This he discussed in the Preface to the first volume of the Works in Architecture, noting that the term was 'meant to express, the rise and fall, the advance and recess, with other diversity of form, in the different parts of a building'. It would, he said,

\*117 'serve to produce an agreeable and diversified contour, that groups and contrasts like a picture, and creates a variety of light and shade, which gives great spirit, beauty and effect to the composition.'\*

Translating this concept from three dimensions to two, his use of coloured grounds to present simultaneously different analyses of his ceiling compositions seems obviously parallel. Certainly, the vast majority of coloured ceilings by his contemporaries appear static by comparison, and Adam's reputation for the creative use of colour seems amply justified by his development of such a forward-looking inspiration.

\*Fig. 99 Until 1769 Adam seems to have been content to employ green and pink (with the occasional addition of straw colour and white tinted grounds) in the majority of his ceilings, which were enlivened in many cases by more piquant colours in guilloche, inset ceiling paintings, or grotesques. In that year, however, he produced a quite remarkable scheme for the ceiling of the Ante-Room in Lord Kerry's house in Portman Square.\* On a ceiling with a pink ground is set a green fan, in the centre of which is a flower set on a blue ground. The same blue is used within the wreaths which surround the fan, inside which are set medallions containing profile heads on a ground of a dissonant bluish green. The latter appears also in the spandrels around the central flower, and the whole ceiling is surrounded by a violet frame echoed by a band in the central fan. The effect is sugary in the extreme, and, if never repeated with such élan, other schemes of the same year\* show a comparable interest in the use of similarly 'sweet' colouring, which appears again most notably in the ceiling for

\*118

\*119 the Second Drawing Room at No. 20 St. James's Square of  
September 1772.\*

\*120 In that year, however, a major change of direction took  
place in Adam's selection of colours. From now on his palette  
became much more austere and, whilst green remained his staple  
choice, he used it increasingly with colours other than pink,  
this combination last appearing in 1776.\* A similar tendency  
to control the richness and flamboyance of his earlier work  
appears too in the increasing simplicity of form in a number  
of his ceilings at about the same date. Interestingly, it is  
in the rejected design of August 1772 for the ceiling of the  
\*Fig. 98 Second Drawing Room at 20 St. James's Square\* that Adam's ten-  
dency towards cooler colouring is particularly clearly seen.  
Here, the predominant ground colours are straw and green, the  
pink areas being comparatively reticent; and the same is found  
in two other schemes of the same year for houses in Mansfield  
Street.\* In the Eating Room of No. 20 St. James's Square,  
\*121 whose ceiling design is dated December 1772,\* Adam adopted a  
\*Fig. 100 still more severe approach, using 'Light Grey' for the general  
ground, 'Light Green' in the coffers, and a darker green for  
the grounds of the central rosettes. Whilst it is true he had  
used the combination much earlier (in his design of 1767 for  
\*122 the State Bedroom at Harewood)\* its exploitation had remained  
dormant in the intervening years and it was not until his  
interest in such severity of colour was reawakened that he  
again took up the idea. Perhaps the ultimate in spareness that  
Adam reached in 1772 was in his ceiling for General Fitzroy in  
which three greens alone were used, and the ceiling incorporated  
\*123 medallions and rectangular panels painted in green bas relief.\*

\*124 All the combinations described in the last paragraph con-  
tinued to be found in Adam's designs in the course of the 1770s,  
whilst green with straw made its last appearance in his unexe-  
cuted design dated March 1782 for the ceiling of the Drawing  
Room at Oxenfoord Castle, Midlothian.\* Another, which survived  
until his last coloured designs of the following year, was the  
use of a green ground overall punctuated simply by small areas  
of a contrasting colour.\* In September 1772, for example, he  
\*125 used a reddish purple for the purpose in the otherwise green  
ceiling of the Ante-Room at No. 20 St. James's Square, and the

following year a bluish lilac in the First Drawing Room for  
 \*126 Lord Stanley's house (later Derby House) in Grosvenor Square.\*  
 The Second Drawing Room was similar, but also had some grounds  
 \*127 of a dark green;\* and the same green and lilac combination  
 occurs until 1783. Interestingly, it may also be seen in  
 the illustration of the ceiling dated 1773 for the Music Room  
 at No. 20 St. James's Square in the coloured copy of the Works  
 \*128 in Architecture at the Soane Museum;\* although different in  
 some details from the colouring shown on the drawing in the  
 Adam volumes, this seems from pencilled annotations on the  
 \*129 latter, to be more likely to have been the version executed.\*

\*Fig. 101

In 1774 Adam introduced another cool effect into his work,  
 combining a pale bluish grey with a darker grey in his ceiling  
 for the Ante-Room at Lord Kerry's house in Portland Place;\*  
 and he used this idea in a number of ceilings until the end of  
 the decade. In 1776 grey assumed quite an important place in  
 his palette, two tones being combined with straw colour in his  
 design for the Second Drawing Room in one of the Portland Place  
 houses dated May of that year, the same combination being used  
 with the addition of green in another of the houses in this  
 development in April and in Messrs. Drummonds Drawing Room at  
 \*130 Charing Cross, London, in September 1778.\* Greys and greens  
 together were used without other colours in a number of ceilings  
 from 1776 until 1779, whilst in the Second Drawing Room at  
 \*Fig. 102 Culzean Castle, Ayrshire,\* drawings of which are dated 1778 and  
 \*131 1780, he used two greens, straw, and grey;\* and in both draw-  
 ings for the ceiling of the Music Room at Cumberland House,  
 \*132 London, of 1780 he employed grey, bluish mauve, and green.\*  
 The scheme for Culzean seems appositely to sum up the later  
 phases of Adam's work, its spare network of ribs in shallow  
 relief being matched by an almost understated use of colour,  
 which, despite its reticent austerity, nevertheless reflects  
 his preoccupation with 'movement' in the counterpoint of super-  
 imposed geometrical forms.

Besides the examples discussed above, of course, other  
 combinations of colour reflecting his later, more austere,  
 approach found occasional use. A particular example is seen  
 in his 'Etruscan' designs of 1772-80 in which black, brown,  
 and an earthy yellow were used as accents, generally set on a

ground of pale blue or neutral grey. They thus belong properly to the later phase of his output, in which they may be seen as a special category which will be discussed in more detail in Chapter VII. In addition, throughout his working life Adam continued to re-work and adapt earlier ideas (perhaps partly to accommodate the preconceptions and tastes of his clients) and it is difficult to convey the full range of his ingenuity in the already dominant amount of space here devoted to his work. The very complexity of the majority of his designs is itself a considerable obstacle to discussion, and his use of colour deserves more exhaustive analysis than presently possible. The role of his contemporaries, however, also presses for consideration, and attention must therefore be turned to the designs which five major figures amongst them produced in an age which Adam's giant status and prolific output has come to overshadow.

James Paine  
the elder

\*Fig. 103

Although it seems possible that James Paine the elder (c. 1716-89) was an early exponent of the tinted ceiling, this is by no means certain. His design of about 1750 for the ceiling of the Drawing Room at Gopsal Hall, Leicestershire,\* shows a central panel, presumably intended for a picture, surrounded by a series of compartments containing rococo ornament. The grounds of these and the area into which they are set are washed in an earthy yellow, but whilst there seems an obvious link with the colouring discussed by William Shenstone and Lady Luxborough which has already been described, it is not clear that its use was anything more than a draughtsman's convention to express the relief of modelled plasterwork on a two-dimensional drawing. This question is discussed in more detail in Chapter VII; and the same argument applies to a drawing for a room at Kimberley Park, Norfolk, which may date from 1754-9.\*

\*133

Later drawings by Paine in a neo-classical style, however, show that he certainly adopted the use of combinations of pink, green, straw, and pale blue for grounds, although the date at which he first took up these colours is unclear. Such tints are shown, on a ceiling for a Music Room in Salisbury Street, London, (c. 1770),\* and on the designs for the ceilings of the Great Ball Room and Library at Brockett Hall, Hertfordshire, (c. 1768-73).\*

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\*135

drawings at the R.I.B.A. are much paler than those used by Adam, but this need not necessarily imply, of course, that they were so negative in execution. Several of the ceilings contain blank panels, presumably intended for inset paintings, and, like Adam, Paine felt free to change colour on a line of foliage rather than exclusively on an architectural moulding.\*

\*136 Although many of the ceilings are fairly static, at least two of those for Shrubland Park, Suffolk, show a degree of the

\*137 'movement' of which Adam was an exponent,\* the example illustrated\* in which one set of festoons around the central circle is interlaced with another taking priority for tinting, being a notable instance.

\*Fig. 105

John Vardy

\*138

In 1757 John Vardy (d. 1765) produced a drawing for the ceiling and walls of Mr. Spencer's Closet at Spencer House.\* The grounds of the former are washed with a pale yellow-green, and, taking this in the context of the Norfolk House ceilings discussed earlier in this chapter, together with Vardy's other drawings reviewed in Chapter VII, it seems most likely he intended that they should be picked in in this way.

Sir William  
Chambers

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\*Fig. 106

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\*Fig. 107

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The early dated ceilings by Sir William Chambers (1723-96) and his observations on the colouring of ceilings in his Treatise have already been discussed, together with his essays in the style of antiquity using coloured ornament on a white ground. Where he had used tinted grounds in the former, he had selected a single colour (straw, pink, grey, or green), and other, undated, drawings also show this treatment.\* In 1769 too, he suggested to the Earl of Charlemont that in the Saloon of the Casino at Marino, Dublin,\* a light blue could be used in the coffers of the cove and ground of the guilloche around the central rectangle whose ground too was to be 'as faint a blew... as it is possible to make', a scheme which seems to reflect the same preference,\* as too does his ceiling with green panels for Lord Melbourne's Dressing Room at Melbourne House, Piccadilly (1771-6).\* Nevertheless, undated drawings by Chambers exist showing the use of two or three colours, including one\* employing green, straw, and pink, and others in which green is used in the panels and pale grey for the frames.\* In 1775, moreover, he wrote to the Earl of Charlemont in connection with a room (possibly at Marino Lodge, Dublin), suggesting:

\*143

'The room your Lordship wants to Paint will I apprehend do best pea green in Oil with white Mouldings Cornice door & Window ornaments &<sup>C</sup> perhaps a little purple may be introduced in Some parts which if well disposed mixes well with the Green & White.'\*

\*144

In 1780 he decorated all the ceilings in the important rooms at Somerset House using more than one colour. That in the Meeting Room of the Society of Antiquaries, for example, was painted in 'Pink' and 'Green' (a combination Adam seems by then to have abandoned), whilst the ceiling of the Royal Society's Meeting Room had grounds of 'Pea Green', 'Pink', and 'Laylock colour', and the Ante-Room shared by these had a 'Grey' and 'Pink' ceiling above a 'Green Verditer' cove containing panels with a 'pink' ground. At the Royal Academy's end of the building their Council room had a ceiling of 'Green' and 'Dove Colour', their Antique Academy one combining 'Laylock' and 'Green', and their Library a 'Grey' ceiling above a 'Green Verditer' cove with inset panels of 'purple'. In the first of these were set paintings by West, Rebecca, and Angelica Kauffmann, and in the latter pieces by Reynolds and Cipriani. By far the most elaborate colour scheme, however, was in the ceiling and upper parts of the Exhibition Room, in which 'Lemon colour', 'Green Verditer', 'Grey', and 'purple' were combined with the trompe l'oeil details executed by Catton already mentioned.\*

\*145

Chambers can therefore be seen to have used colour to a considerable extent in his work (having, indeed, probably adopted the use of tinted grounds before Adam), and appears, moreover, to have enjoyed something of a reputation in this respect. In 1772 the Duchess of Queensberry is reported as having applauded his abilities, declaring:

'Sir William knows that the assemblage & blending of couleurs are Great Principals of his own masterfull supream taste'.\*

His employment of colour, however, seems to have been far less flamboyant than Adam's, and, in comparison to his, totally static. No-where does he seem to have allowed himself the



freedom to change tint at anything other than a proper architectural moulding, and in none of his schemes so far noted is there any of the 'movement' which Adam and Paine both exploited. He was, however, very much concerned with excellence of form in his architectural compositions, and it may therefore have been deliberately that he eschewed the life-giving ambiguities seen in Adam's work in favour of more solid colour schemes intended to complement the nobility of his designs.

George Dance  
the younger \*146

\*147

\*Fig. 108

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\*Fig. 143

By the time George Dance the Younger (1741-1825) returned from his visit to Rome (December 1758 to December 1764)\* the use of tinted ceilings was well established. Several drawings and sketches by him for such compositions survive in a volume at the R.I.B.A., including a preliminary design for the ceiling in the Dining Room at Pitzanger Manor, Ealing, (1768-70) which is washed roughly in tints of dark pink and grey.\* Investigation has allowed the original Dance colour scheme of the ceiling in the Drawing Room above to be recovered,\* showing the use of green, blue, and white grounds to emphasise the geometrical form of the ceiling, whilst a small area of dark red in the central ornament adds piquance to the whole. Neither here nor in any of the drawings at the R.I.B.A., however, is there any of the subtle ambiguity found in Adam's work, although in several instances Dance does seem to have toyed with the idea of changing colour on a line of foliage.\* One sheet also shows he experimented with the use of coloured arabesque on a coloured ground.\* These drawings seem to belong to the earlier phase of his career, and by 1788-91 in the Library he designed for Lansdowne House (formerly Shelburne House) in Berkeley Square\* he proposed a much purer neo-classical approach, akin in many ways to the 'antique' ceilings Adam had designed between 1760 and 1765, but here in a Pompeian style which will be discussed in the final chapter.

James Wyatt

James Wyatt (1746-1813) also came late on the scene. He visited Italy for about six years from 1762 and came to prominence through his first major work, the Pantheon, Oxford Street, which was opened in 1772. About seven years later, this building (a detailed painting of which is preserved at Temple Newsam House, Leeds) was praised in The Exhibition, a satirical pamphlet written by Robert Smirke under the pseudonym

of Roger Shanhagan. In the Pantheon, he said,

\*150 'we have the excellences of the most approved works of the Romans, without any of their blemishes... England never before possessed a Building... where the Beauties of... Ornament and Colour were so happily blended'.\*

\*Fig. 109 A number of dated ceiling designs by Wyatt survive showing several early schemes. These include a drawing of 1772 (possibly for Heaton Park, Manchester)\* in which coloured ornament and inset lunettes of neo-classical painting are set on grounds of green, pink, and white separated by ribs with a straw-colour ground; whilst the whole is enlivened by small areas of dark purple, black, and a dull yellowish terra cotta. Many of the same elements are found in his scheme of 1775 for the Drawing Room at Aldwark Hall, Yorkshire;\* but other schemes of this and the following year are less ornately coloured. Green alone is shown, for example, on the segmental vault for the Gallery at Milton Abbey, Dorset;\* and his design of 1776 for the ceiling of Lord Thanet's Dressing Room at Hothfield Place, Kent, shows a very simple scheme of green and pink with small inset panels of dark purple.\* The latter seems to have been a favourite colour of Wyatt's, and appears too in another ceiling of 1776 for an unknown site.\*

\*Fig. 115

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\*Fig.110 +Fig.111 In general the drawings in the Wyatt album at the Victoria and Albert Museum suggest he often adopted a greater delicacy of tint than Adam, and was himself an exponent of the spareness which characterised the latter's work from 1772. This change may have owed its origin to Wyatt's use of colour in the Pantheon and the younger man seems always to have pursued a policy of noticeable restraint, generally using simple combinations of green, straw, pink, or blue, with a dark green or purple to give piquance and focus to his compositions. This may be seen particularly well in one of the drawings at the Victoria and Albert Museum.\* Even where he was being more complex,+ there is a noticeable difference in character from Adam's work; and, furthermore, none of the 'movement' created by him. In The Exhibition his interior work was summed up by Smirke as containing every variety of form, proportion, and colour that by harmony and contrast could give pleasure to the eye; whilst in

it, he concluded:

\*154 'We are never pained by lines violently contrasted, nor purplexed by a harsh opposition of glaring and discordant Colours, but a timely repetition of the same form preserves Variety from Confusion, and one mild prevailing Colour softens every brighter Tint into its own sweetness.'\*

His work is best appreciated today, perhaps, at Heveningham Hall, Suffolk, where in the Hall, Saloon, Library, and Etruscan room a certain amount of original paintwork appears to survive, its cool refinement amply bearing out Smirke's summing up.

#### Conclusion

Naturally, other architects too employed tinted ceilings. Samples recently taken from the first floor of No. 15 St. James's Square, built by 'Athenian' Stuart between 1764 and 1766, suggest that many of the panels in the ceiling of the Front Drawing Room had a green ground, whilst this colour and pink were used in the ceiling of the Back Drawing Room.\* Even existing ceilings would be treated in this way, and in 1774 Lady Louisa Conolly recorded painting that of the Gallery at Castletown, which dated from the 1730s, in scarlet, grey, white, and gold.\* Either distemper or oil would be used. The first edition of the Builders Price-Book published in 1776 contains (in the section dealing with Plasterers' prices), for example, the following entries:

\*157 'Wash, Stop & white to ornament Cieling 4[d.]'  
'Ditto, and straw colour, pricked in to Grounds 1 - 2':\*

and the two ceilings at No. 15 St. James's Square appear to have been decorated in this medium. Oil seems, however, to have been more common in better work, and such operations as:

'Ornamental ceilings, six times in oil, ground variegated, and picked in with several, or any rich colours...'  
\*158 became standard items.\*

The extent to which an architect would expect to direct a

house-painter on site as to the final adjustment of the tints is not entirely clear. Gaps between site visits were often much longer than those expected of an architect today, but if programmed properly there was no reason why any necessary adjustments should not have been made to a number of rooms in the course of a few days stay. Certainly at Harewood in September 1769 Thomas Sunderland's painters were at work in the Hall and Music Room, '& laying on specimen of Colours for Mr Adam's approbation', suggesting this aspect of the work was taken fairly seriously.\*

\*159 The account for work carried out at Osterley Park between 1772 and 1774 also suggests that samples, this time of gilding, were provided in the Drawing Room, a list of 'Alterations' including three of the seventy-two flowers in the octagons, which had originally been solid gilt, and three feet of frieze 'Gilt in a different manner to what is now done'.\*

\*160 Near London, no doubt, site visits were much easier, but further from home would have presented considerable difficulties to a busy architect; and Chambers is known, for example, never to have visited Ireland where the Casino at Marino was amongst his most important early commissions. To a great extent, however, architects such as Adam in particular probably relied considerably on working with craftsmen who knew their tastes and requirements from previous jobs, since experience gained by painters at one site would reduce the amount of detailed supervision needed on a later occasion.

Although tinted ceilings appear to have been still very much in vogue in 1779 when Mrs. Montagu wrote that the painters were decorating her ceilings in various colours 'according to the present fashion',\* and Chambers provided elaborately tinted examples at Somerset House in 1780, the steady decline in the number of coloured designs by Adam, the last two of which at the Soane Museum are dated 1783, has also been seen. There is, moreover, some evidence to suggest that there was a falling off of interest in such decorations during the 1770s and 80s, and by 1794, when Samuel Wyatt completed his alterations to No. 15 St. James's Square, investigation has shown that Stuart's ceilings were re-painted white\* (an operation which seems, interestingly, to have required the employment of Rebecca to change the colour of the grounds behind the figures in the eight ceiling paintings in the Back Drawing Room).\*

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\*162

\*163 In fact it is

important to bear in mind that white ceilings had never completely died out, especially in humbler houses such as the Baker's premises for which a contract dated 1770 survives at the R.I.B.A., in which all the ceilings were simply whitened.\*  
\*164 Halls and Staircases, indeed, seem generally to have been treated in this way, and no example in the Adam drawings at the Soane Museum is shown tinted in colour, a point which will be elaborated in the next chapter.

In addition, there does seem to have existed a degree of ambivalence towards the tinted ceiling. Investigation has shown, for example, that all those in the important ground-floor rooms at the Casino (1769) were white;\* and in 1775 Chambers sent the Earl of Charlemont a design for a ceiling elsewhere which had shallow relief ornament, commenting equivocally:  
\*165

'I have Coloured a part to Show how it might be done, but it will look very well all white'.\*  
\*166

Investigation has also shown that the ceiling of the Drawing Room at Bolling Hall, Bradford, completed by John Carr of York in 1779, was finished in white;\* and in 1785 James Peacock, who was assistant Clerk of Works to the City of London under George Dance the younger, commented disparagingly in his book Οικίδια, or, Nutshells on elaborately coloured compositions. Seemingly advocating instead the employment of clouded ceilings (discussed in the final chapter) he deprecated those in which,  
\*167

'festoons obey various lateral kinds of gravity, unknown to nature and philosophy, and in which the cheese cakes and raspberry tarts, upon the ceiling, vie with, and seem to reflect those upon the floor with such wonderful precision; and where the insupportably georgeous ceiling, and the fervantly glaring carpet, cause the poor bare walls to be seemingly dissatisfied, uneasy, and impatient to retire from such fine company, as if conscious of their meanness and poverty.'\*  
\*168

The relationship between walls and ceilings will be examined in the next chapter, but there was undoubtedly a grain of truth in Peacock's argument which would, perhaps, have encouraged a

taste for plain white. In 1792, within seven years of this polemic, Robert Adam died, Paine had predeceased him in 1789, and Chambers vanished from the scene in 1796. In many ways the great era of the coloured ceiling was over, although it seems likely Wyatt employed a small amount of pink in a few rooms at Fonthill Abbey, Wiltshire,\* and items for ceilings tinted in several colours survived into the 1813 edition of the Builders Price-Book.\* The developments of this period, however, are the province of the final chapter, and it is now necessary to return to look more generally at the context within which the multi-coloured ceiling was placed.

Rococo walls

In Chapter V the Palladian taste for white-painted rooms with dark brown or mahogany doors, and frequently too, brown skirtings, was described. It was also mentioned that by the mid-1740s it seems likely paint colour was being used between the chair rail and entablature in a way analogous to the employment of fabric hangings or wallpaper. Certainly it appears that in 1747 Lord Chesterfield wrote of his then unfinished Library designed in the French rococo style:

\*1 'The bookcases go no higher than the dressings of the doors, and my poets, which I hang over them, will be in stucco Allegorical frames, painted white.'\*

\*2 This remark suggests he may have intended to colour the walls between the frames; and by 1759, when an ante-room at Egremont House by Matthew Brettingham (now the Naval and Military Club), Piccadilly, was painted dead white with 'Size Colour' on the stucco, the fashion was probably well established.\* By now, therefore, the chair rail was inevitably run into the architraves of doors and windows rather than stopping short and being returned as in many earlier rooms.

Architectural  
discipline

\*3 Placed between the dado and entablature or cornice, paint colour, wallpaper (to which Isaac Ware referred three times as being extremely fashionable),\* or fabric occupied, it will be appreciated, the space which corresponded with the implied columns of the architectural order with their capitals and bases. The dado, as indicated in Chapter IV, represented the pedestal.

\*4 This concept, which Ware discussed at some length,\* is conveniently illustrated in an undated drawing by John Vardy\* in which the walls are pink and the joinery and pilasters white. It was of fundamental importance to the use of colour on walls throughout the eighteenth century, just as it had been in the latter part of the seventeenth; and accordingly provides the key to an understanding of the increasingly elaborate colour schemes which developed from the 1750s. Coloured friezes, as will be evident from Chapter IV, were in use during the seventeenth

\*Fig. 112

century and were to assume great importance in the latter part of the eighteenth; and by the mid-1750s the dado too could be tinted between the chair rail and upper moulding of the skirting, whose fascia could also be coloured. Clearly, the relationship between the tints and shades used on these architectural elements was of crucial importance to the composition of a room, and Gerard Lairesse's concern during the early eighteenth century with this aspect of design apropos the use of coloured marbles will also be remembered from Chapter IV.

William Kent's Dining Room at Houghton Hall, Norfolk, with its columns of Devonshire 'Plymouth marble' set above a dado and skirting of Portoro, provides a notable example of the Palladian use of coloured marbles in such a way; but the first dated architectural drawing so far located which definitely seems to indicate the use of paint colour in a comparable manner is John Vardy's design of 1757 for the Alcove Bow Room on the ground floor of Spencer House, London.\* In this, frieze, wall, dado, and skirting are washed in a pale green. The green washes on walls and dado in his design dated 1755 for the Dining Room\* are similar, but it seems possible that these were added later as an afterthought since the doors were originally washed in grey. Both drawings are, nevertheless, of particular interest as apparently showing in the mid-1750s a clear intention to use a dado painted in colour. They are, however, it must be noted, a few years later in date than certain rococo drawings by other architects, which have brown or yellowish washes on the dado; but these are open to a variety of interpretations.

\*Fig. 113

\*5

Rococo examples

\*Fig. 114

\*6

The earliest rococo drawing of this type to be considered is that for the Dining Room at Kirtlington, Oxfordshire, dating from about 1745.\* This has pale brown washes on frieze, walls, and dado; and in this instance, paint samples taken and examined microscopically in 1955 when the room had been re-erected at the Metropolitan Museum of Art, New York, appear to have shown that it had originally been painted throughout in a soft off-white.\* It seems, therefore, that the washes were intended to convey a sense of modelling on a two-dimensional drawing rather than to indicate the use of colour on walls, frieze, or dado; and they may therefore be compared with those on Kent's design for Queen Caroline's Library at St. James's Palace



\*Fig. 53

\*7

\*Fig. 104

\*8

discussed in Chapter V.\* Whether this was the case with the elevations by James Paine, undated but possibly of about 1750, for the Best Dining Room and Drawing Room at Gopsal Park, Leicestershire,\* (demolished 1951) is not, however, clear. In these, the dados, doors, and walls are washed in a dull yellow-brown; but, considering the example illustrated,\* the darker tint on the door could simply have been intended to represent the use of mahogany or chocolate brown, and the deepening of tone in the door and dado panels to indicate their recession of plane. Conversely, the lightening of the yellowish off-white grounds in the medallions on the walls in a drawing of about 1754-9 for a room at Kimberley Park, Norfolk, attributed to Thomas Prowse (c. 1708-67) was probably intended to indicate their projection from the general plane of the walls.\*

\*9

\*10

It is quite possible, therefore, that rococo interiors such as these were commonly simply painted white or stone colour in a way similar to the Palladian rooms described in Chapter V, and in this case Vardy's drawing for the Alcove Bow Room at Spencer House assumes particular significance as the earliest example so far located definitely to show an intention to provide a tinted painted dado. This could suggest the idea is associated more with the neo-classical style than the rococo; and it certainly seems significant that at Norfolk House, London, (the outstanding importance of whose rococo interiors in connection with the new vogue for coloured ceilings has already been suggested) the painter's account of 1755, which is extremely detailed, contains no suggestion that the dados were anything other than white beneath the wall hangings of silk, velvet, tapestry, or wallpaper.\* Nevertheless, as shown in Chapter VI, the rococo era was important for the introduction of colour to the flat panels of ceilings and appears likely too to have enjoyed the use of paint colour on walls. It seems, therefore, to have been an epoch of considerable innovation; and, illustrating this, not only was the frieze in the Green Damask Room at Norfolk House 'party coloured', but also the shutters and window and door architraves together with the skirtings in this and the Flowered Red Velvet Room, another fashion which soon became popular and will be described in due course.\* Attention must first be turned, however, to the ways colour was used on

walls by the neo-classical architects.

Neo-classical walls  
Internal  
colour  
relations

Given the four areas of wall mentioned above (frieze, wall, dado, and skirting) and coupling this with an ability to differentiate them in up to four tones or colours, the neo-classical architect was faced with a considerable number of permutations and combinations upon which he could call for architectural effect. Some, of course (notably a coloured dado with white frieze, walls, and skirting), are unlikely ever to have been used; but others became extremely popular and may be considered as falling into one of eight groups based on the relation of wall, dado, and frieze. These are now accordingly reviewed, bearing always in mind that the colours used were generally similar to those encountered on the ceilings described in the last chapter and that as with these the architectural framework remained in white.

\*Fig. 112

\*11

The first and most basic group of schemes made use of a coloured wall with a white frieze and dado. An example by Vardy, with a white skirting, has already been illustrated,\* but on occasion the skirting also might be coloured. Thus, for instance, on the drawing of 1779 by George Steuart (c. 1730-1806) for a room at Onslow Park, Shropshire, the main areas of wall and the skirting are tinted in a uniform very pale blue.\*

\*12

\*13

\*14

\*Fig. 113

\*15

Secondly, the wall and dado could be painted the same colour, either with a white frieze and skirting, or with a frieze of identical tint and a white skirting, or with all four elements painted to match. The first alternative may be seen, for example, in James Wyatt's design of 1775 for the Library at Milton Abbey, Dorsetshire;\* the second in many other of his designs for the same building\* and in another drawing by him, possibly for the Dining Room at Heveningham Hall, Suffolk;\* and the last in the second Vardy drawing already illustrated,\* besides Adam's Dining Parlour at Audley End, Essex.\*

\*Fig. 116

\*16

A third convention made use of a matching wall and dado with the frieze differentiated. Wyatt seems to have proposed this for the Dining Room and Drawing Room\* at Aldwark Hall, Yorkshire, in 1775. His drawings show the frieze in a slightly darker green than the wall and dado;\* whilst Sir William Chambers's

design for the Drawing Room at Gower House, Whitehall, of  
between 1765 and 1774 shows green walls and dado with a pinkish  
\*17 'lilac' frieze.\* All these and at least one other example by  
\*18 Wyatt\* have a white skirting; but in his design (c. 1775) for  
Lady Home's Front Parlour in Portman Square, London, Adam  
made the skirting match the frieze, which was coloured in a  
\*19 darker shade of the grey used on the walls and dado.\* In 1772  
at Lloyd's Coffee House in Cockspur Street, London, (never  
\*20 built) on the other hand,\* he proposed green walls and dado  
with a pink frieze and a darker green skirting;\* but in 1777  
he intended the use of a blue frieze contrasting with a uniform  
green on walls, dado, and skirting in the Dining Room at Worm-  
\*21 leybury, Hertfordshire.\*

\*Fig. 117

A fourth method of colouring was to make the frieze match  
the wall and have the dado white. An instance has been found  
on a drawing of the Saloon at Ston Easton, Somerset, but the  
\*22 date of its colouring is enigmatic.\*

Perhaps the most important system was that, fifthly, in  
which the frieze and dado matched but were differentiated from  
the wall, an idea which may be compared with Laresse's pro-  
posals for the architectonic use of coloured marbles discussed  
in Chapter IV. Adam examples with a white skirting may be  
found, often having green walls with a pink frieze and dado  
\*23 or vice versa;\* but he also used similar schemes with a col-  
oured skirting. In the Countess of Harrington's Dressing Room,  
\*24 Stable Yard Road (now Clarence Gate), London, (c. 1773)\* and  
Mr. Thynne's Drawing Room in Curzon Street, London, (c. 1771),\*  
\*Fig. 118 for example, Adam proposed green walls with a pink frieze and  
dado above a darker green skirting. This last element, however,  
did not always have to take its colour from the wall, and in  
Adam's drawing (c. 1768) at the Soane Museum for the Great  
Drawing Room at Saltram, Devonshire, whose walls were hung with  
blue damask, the frieze and dado are pink and the skirting a  
\*25 darker pink.\* Similarly, in the Library at Harewood Adam pro-  
posed the use of pale pink walls, a dark pink frieze and dado,  
\*26 and a green skirting.\*

The sixth system of disposing colour to be described was  
that in which the frieze and wall were differentiated, but white

was used on the dado. In the Saloon at Nostell Priory,  
Yorkshire, Adam's drawing of about 1767 shows he proposed  
\*27 the use of green walls with a pink frieze;\* whilst on his  
elevation for the Boudoir at Cumberland House, Pall Mall,  
London, (c. 1780, demolished) he showed straw colour walls  
\*28 and a green frieze.\* One version of the drawing showing the  
Saloon at Ston Easton shows blue walls with a pink frieze as  
\*29 one of several alternatives.\* All three examples have white  
skirtings, but in one of the Drawing Rooms at Cumberland House  
Adam proposed the use of a blue skirting matching the frieze  
\*30 against pink walls;\* and a green skirting and frieze are shown  
too in the wallpapered bedroom in a magnificent sectional  
elevation by John Yenn (1750-1821), a pupil of Sir William  
Chambers, which is now at the Royal Academy Library.\*

\*Fig. 119

A seventh method was to have a differentiated wall and  
dado, leaving the frieze white. This seems to be a compara-  
tively rare treatment, but is found in association with gilding,  
for example, in Adam's drawings for the Third Drawing Room at  
\*31 Cumberland House.\* Eighthly, on occasion (and again compara-  
tively rarely) all four elements might be different; and in  
1776 in the Great Drawing Room at Bolton House, Southampton  
Row (now in Russell Square), London, Adam proposed the employ-  
ment of pale green walls above a pink dado, with a darker green  
\*32 frieze and still darker green skirting.\*

\*Fig. 119

Needless to say, these options by no means exhaust the  
range of possibilities open to the architect. On occasion,  
for example in certain rooms shown on the Yenn drawing already  
illustrated\* and in Adam's Drawing Room at Audley End, the full  
entablature was omitted, a white cornice alone being used;  
whilst, alternatively, the added complexity of a secondary sub-  
frieze might be introduced. An example of the latter treatment  
is provided by Adam's design for Lady Home's Back Parlour in  
\*33 Portman Square\* in which frieze and skirting answer each other  
in a species of 'Etruscan' brown, the sub-frieze and dado are  
painted a dark straw colour, and the wall between them is in a  
paler tint. This last scheme illustrates particularly well the  
care taken to ensure that the colours used on the different  
architectural elements were balanced and mutually supported each  
other in the composition regulated by the architectural order,

\*Fig. 120

rather than fragment it. It also shows the way in which, exactly as with ceilings, the darker, weightier colours were generally reserved for smaller areas, notably the frieze and skirting, rather than being deployed on large areas of wall.

#### Skirtings

The part played by the skirting in achieving this balance is interesting. As will be remembered, in Palladian times it would generally be either white or chocolate brown; and at Norfolk House it was included amongst the items in the Green Damask Room and Flowered Red Velvet Room painted in 'party colours'. Although on the basis of the drawings examined white skirtings seem generally to have been preferred by Paine, Vardy, Chambers and his office, and James Wyatt, a dark colour on the skirting fascia had obvious uses in adding weight at the base of an elaborate scheme for wall colouring. Colour was therefore used on this element by Adam in many instances (possibly in about fifty per cent of his schemes) and is found too in the form of green and grey in the Yenn drawing already illustrated.\* Most usually Adam's coloured skirtings are green, but pink, blue, and grey may also be found on his elevations. Brown is generally only seen in connection with his 'Etruscan' schemes to be discussed below, and it seems likely that it was otherwise no longer regarded as a colour sufficiently 'beautiful' in the terms of Edmund Burke to be really suitable for genteel interiors. It is especially interesting, therefore, that whilst Chambers may have employed white skirtings throughout the grand rooms in the Strand Block at Somerset House in 1780,\* investigation carried out in connection with the present study has shown that in the humbler, more everyday apartments belonging to the Secretary of the Society of Antiquaries and Housekeeper of the Royal Society a dark brown skirting was employed in rooms which were otherwise simply painted stone colour (off-white) and hung with wallpaper.\* This suggests, perhaps, that in more ordinary homes the brown skirting persisted well towards the end of the eighteenth century.

#### Doors and windows

Another important element on which colour came to be used was the door. On many elevations doors are washed in brown or grey, but in such instances it is difficult to know whether they were to be executed in natural timber or painted chocolate

brown as in Palladian times; or whether, perhaps, it was actually intended they should be painted grey. In grand rooms the first was, no doubt, the most common intention. An example may be seen in the mahogany doors of the Library at Kenwood, Middlesex, Adam's drawing for which shows them simply washed in grey;\* but in lesser rooms, such as the two private apartments in the Strand Block at Somerset House mentioned in the last paragraph, chocolate brown continued to be used. At Erddig, Denbighshire (now Clwyd), too a door was to be painted chocolate colour in 1772.\* In the grand rooms of the Strand block, however, Chambers had the doors painted in imitation of mahogany, a technique which became increasingly common in the early years of the nineteenth century.\* There are, on the other hand, drawings in which a grey wash on the doors does seem to suggest the use of grey paint in execution since it appears to relate to other elements of the composition. On the Yenn drawing illustrated,\* for example, brown doors are shown on the central staircase and grand rooms of the right-hand side of the section; but on the left-hand side, in the entrance hall and second-floor bedroom, grey doors match a grey skirting, suggesting that grey paint was actually to be used. Similar arguments may be advanced in the case of some of Adam's Etruscan interiors; whilst in Adam's design for the Back Room on the first floor of Sir George Colebrooke's house in Arlington Street, London, (c. 1771) both walls and doors are washed in pale grey.\* In this instance, however, it is possible that both were to be painted white.

\*Fig. 119

In cases where doors are shown tinted, on the other hand, it seems clear a colour was in fact to be used. The most popular choice, as with skirtings, was green, and an example is to be found on Vardy's drawing of 1755 for the Dining Room at Spencer House, although it seems possible the colour was added as an afterthought since it overlies a grey wash.\* Adam examples include the Dining Room at Audley End, the remainder of which, it will be remembered, was painted green;\* a room at Apsley House, London, of 1775, where the walls again were green,\* and the Drawing Room at Northumberland House, London, of 1770 (demolished 1874).\* This last example was one of his most spectacular compositions (fragments are preserved at the Victoria and Albert Museum) in which a great quantity of gilding coupled

with red 'spangled' glasses on the walls, a green dado, and a pink skirting were employed. George Richardson too proposed the use of green doors in the Hall at Kedleston, Derbyshire, in 1774 in the context of a pink and green scheme;\*

\*43 and a drawing by James Playfair (d. 1794) dated 1782 for a doorcase at Blackadder, Berwickshire, shows a green door.\*

\*44 Pale blue doors appear on elevations of Adam's Drawing and Alcove Rooms at Audley End, the former of which match the dado, the latter matching the walls;\*

\*45 whilst in a design for Sir Abraham Hume dated 1779 Adam intended the use of a greyish blue door which matched the skirting.\*

\*46 A pale blue was also used in two schemes by Steuart, one for the Hall at Onslow of 1779 and the other for the Library at Stoke Park, Shropshire, of 1785-6, in both cases in an austerely pale blue context.\*

\*47 Where colour was used on doors, therefore, it seems to have been carefully related to other parts of the composition. Windows, however, seem to have been painted white as a rule, although brown sashes are shown on a few drawings, possibly indicating the use of natural timber.\*

\*48

#### Wall panels

Finally, before considering the relationship between the colours used on walls and ceilings, attention must be given to walls embellished with stucco panels, and the way colour could be introduced to these. Although on at least one occasion, (Adam's design of 1777 for the Dining Room at Wormleybury)\*

\*49 it seems to have been intended that walls and panels should match, they were more commonly rendered either darker in tone than the walls, or in a contrasting colour. Sometimes their colour would not be found elsewhere on the elevation, as in the panels of Lady Home's Back Parlour already illustrated\*

\*Fig. 120 (although, as in Adam's design for Lloyd's Coffee House,\* it may have been found on the ceiling); but it would often be found repeated on frieze, dado, or skirting. In Chambers's design for the Drawing Room at Gower House, for example, the walls and dado are green, and the narrow panels and frieze pink;\*

\*50 whilst in Adam's drawing for the New Library he proposed for Kedleston\* it is the panels and skirting which are pink, with green walls and dado and an elaborately coloured frieze. Commonly too, at least two mural elements would match the panels. In Adam's design of 1767 for the Library at Kenwood, for instance, the panels are a greyish blue, matching the dado

\*Fig. 125

\*Fig. 121

\*51

\*Fig. 119

and frieze, whilst the walls are pink;\* and in his design for Lady Home's Front Parlour the bluish grey of the panels matched that of the frieze and skirting, the dado and wall sharing a lighter shade.\* Of particular note too is the scheme shown by Yenn in one of the rooms of the sectional elevation illustrated\* in which the wide panels match the green of the dado, and the narrow panels the grey of the skirting, whilst the walls are straw. Altogether, it may be appreciated how basic the concept of the architectural order remained to the way colour was approached and organised on walls; although, within this framework, architects had a considerable choice as to its arrangement and inter-relation in any particular scheme.

Relationship of  
the wall with  
the ceiling

Clearly too, it was important that colours used on a ceiling should be related to those on the walls. The supremacy of the ceiling in this respect will be evident from the attention devoted to it in the last chapter, and it is symptomatic of this that far fewer coloured elevational drawings by Adam and other architects survive. Also, whereas Adam seems to have been at pains to date his ceilings, that of most elevations has to be assumed from that of the ceilings to which they relate. Given too, the fairly restricted number of elevations for which corresponding ceiling drawings survive, the amount of evidence available for analysis is comparatively limited; but it may be assumed that the choice of palette developed along parallel lines to that for ceilings discussed in the last chapter.

'Alternating'  
schemes  
\*Fig. 122

One most significant document is provided by notes made by George Dance the younger on the reverse of a ceiling design,\* since it shows quite explicitly the deliberate attempt which he made to relate to it the colours to be used on the walls. He wrote as follows:

'Center of Cieling the same as the dado  
the green the same as the sides of Room  
the Gulochi the same as the Cap of Dados  
The Ground of Freeze to be of the same Colour  
as the Center of Cieling & Body of Dado'.



\*Fig. 123

A diagrammatic reconstruction of the wall treatment is illustrated\* and makes obvious the way in which Dance alternated pink and green from the central oval of the ceiling down to the dado. The relationship of the narrow band of guilloche on the ceiling and dado will also be noted. 'Alternating' schemes of this nature are to be found in the work of Adam, notably in his alternative scheme for the Gentleman's Dressing Room at Harewood House, Yorkshire, dated 1767 in which a central green roundel in the ceiling, green frieze, and green dado alternate with a pink wall and ceiling;\* and in his scheme for Mr. Thynne's Drawing Room in Curzon Street, London, of 1771\* where a ceiling containing green and pink panels is framed in green and lies above a pink frieze, green walls, pink dado, and green skirting.\* A third, particularly notable, example is his scheme for the Library at Kenwood of 1767\* in which a pink ceiling contains blue-grey panels bound by a band with a blue-grey ground.\* The latter colour is repeated in the frieze, dado, and wall panels, whilst the wall itself is pink.

\*52

\*Fig. 118

\*53

\*Fig. 121

\*54

Other relationships

\*55  
\*Fig. 117

\*Figs. 122, 123

\*Figs. 124, 125

Such purely 'alternating' schemes, especially that by Adam for the Library at Kenwood, may be contrasted with that of sumptuous quality he provided for Lloyds Coffee House.\* In this,\* a green ceiling containing pink panels is set above a pink frieze, but this time both dado and wall are green. Unity with the ceiling is maintained in this instance, however, by the employment of dark green pilaster strips matching the skirting, which continue as a band around the lunettes. Another tie is provided by the use of a red ground for both the ceiling guilloche and small inset panels in the walls, a system paralleled in the example by Dance discussed above in which, it will be remembered, he proposed a comparable link by the use of yellow for the ceiling guilloche and in the dado.\* In these instances, and also as a general rule, it is found that colours used in a limited area on one element are transferred only to similarly limited areas on the other; and in Adam's proposed New Library at Kedleston (c. 1768) too, for example, the proportions are exactly maintained.\* Thus, the general green of the ceiling scheme is matched by that on the walls and dado, and the pink of the inset ceiling panels is answered in the comparatively limited areas of the lunettes, pilaster strips,

dado panels, and skirting; whilst the blue of the guilloche borders in the ceiling finds a place only in the main frieze and sub-frieze at import level. In the later Adam schemes too, for example the Dining Room at Wormleybury of 1777 with its comparatively austere overall greens on ceiling and walls, the contrast provided by the blue guilloche and small ceiling panels is repeated simply in the frieze and a band of ornament around the lunette above the chimneypiece together with the circular panel it contains.\* A similar relationship seems to have been used in 1780 by Chambers in the Library of the Royal Academy at Somerset House, Strand, London, in which the green of the cove and walls was set off by the use of attenuated purple panels in both.\* The same device was used in the Ante-room shared by the Royal Society and Society of Antiquaries at the other end of the building, although in this instance, whilst the walls were again green, the panels were pink.\*

'Antique'  
interiors

Altogether, therefore, it is clear that walls and tinted ceilings were generally carefully related, and the same was true in the case of the 'antique' rooms of Adam described in the last chapter in which the coloured arabesque of the ceiling would often relate to similar ornament in wall or pilaster panels. Typical instances may be seen in the Gallery at Syon (1763-8) and the Drawing Room from Shelburne House (1767-73, now at the Philadelphia Museum of Art); and also in Adam's drawings for Lady Coventry's Dressing Room, Piccadilly (probably about 1765);\* the Music Room at Harewood, Yorkshire (1765);\* the Gentleman's Dressing Room at the same (1767);\* and the similar circular Painted Breakfast Room at Kedleston (1768).\*+ Door panels too could include such motifs, this being found, for instance, in the Alcove Room at Audley End (1765)\* and the Third Drawing Room at Derby House, Grosvenor Square, London, (1773)\* where the coloured ornament of the door panels echoed that of the ceiling. It also seems likely that on occasion window shutters were treated in this and similar ways since a design by Vardy dated 1758 for an example at Spencer House shows a golden yellow urn on a pale green ground;\* and in 1771 Mrs. Powys recorded that the window shutters of the Dining Room at Fawley Court, Buckinghamshire, a house by James Wyatt, were 'painted in festoons'.\*

General  
practice

\*Fig. 126

\*Fig. 127

\*67

\*Figs. 115, 116

In less elaborately coloured rooms too, a studied relationship between walls and ceiling was observed; and in the case of the stone colour or white and gold schemes seen in Chambers's sectional elevation of York House, London, of 1759\* and a sectional elevation of 1763 by Edward Stevens (d. 1775)\*, one of his pupils, the two were treated consistently. Wyatt's drawings for the Gallery at Milton Abbey of 1775-6 too show a simple relationship between walls and ceiling, both here austere washed in green with white mouldings.\* With some frequency, however, as is clear from the 'poor bare walls' gibe mentioned in the last chapter, the ceiling could outrun the walls in splendour, and it may be for this reason that comparatively few coloured elevational drawings survive against the much larger number of ceilings. The elaborate examples reviewed above may, perhaps, therefore represent exceptional instances over which particular care was taken, necessitating the production of drawings. A relationship such as that shown in Wyatt's design for the Drawing Room at Aldwark Hall, Yorkshire,\* may accordingly have been rather common; and, as in this instance, inset paintings and panels of gaily coloured arabesque of the ceiling may often have found no echo in a comparatively plain treatment of the wall. In other instances too, as in the Drawing Room at Audley End, an elaborately tinted ceiling was set above a plain cornice, the walls being hung with silk or other covering, so that the opportunity to elaborate on them the colour scheme of the latter was extremely limited. Often, however, as is well known, a carpet design would be made to reflect that of the ceiling, and this too was an important means of bringing unity to the composition.

The colouring of  
smaller elements  
and enrichments

Shutter and  
door panels

\*Fig. 119

When a complex wall scheme was adopted, the panels of joinery items could be coloured in fairly elaborate ways. It has already been mentioned that the window shutters of the Green Damask Room and Flowered Red Velvet Room at Norfolk House had been embellished with colour in 1755; and although an overall white continued in use, especially on joinery in more ordinary rooms such as those shown on the upper floors of the Yenn drawing already illustrated,\* the practice merited inclusion as a standard item in the fourth edition of the Builders Price-Book (1787):

\*68

'Face of window-shutters, stiles and pannels, green, (or any other rich colour) four times in oil and the mouldings white, soffits included'.\*

\*Fig. 128

In other instances the panel grounds alone might be coloured, an example being seen on a drawing formerly thought to be by Thomas Hardwick (1752-1829), another pupil of Chambers, but now attributed to Stevens, in which the ground of the flat panels matches the general wall colour.\* Another common

\*Fig. 119

arrangement was for panels to be fielded, a central portion being raised or surrounded by a subsidiary moulding. Panels of this form, of course, offered scope for greater ingenuity, and on the Yenn drawing already illustrated\* three variations are to be found: a white field with a green surround and straw coloured stile and rails; a white field with a blue surround, stile, and rails; and, on a door lining, a green panel with a green surround and white stile and rails. A particularly

\*Fig. 129

elaborate treatment, this time of door panels, may be seen on a drawing by Wyatt\* in which mauve frames in a white door surround green panels containing smaller mauve panels; and similar elaboration of colour may be found on many Adam curtain pelmets.\*

\*69

Picking out

In all these instances, it will have been observed, it was the grounds which were picked in with colour, but on occasion, raised ornament would be picked out instead, leaving the ground in white. This has been found, for example, in the course of investigation\* of the Saloon at the Casino, Marino, Dublin,\* in connection with which Chambers wrote to the Earl of Charlemont in 1769:

\*70

\*Fig. 130

\*71

'I would recommend that the Entablature doors & <sup>C</sup> of the room should be dead white touched with blew';\*

\*Fig. 131

and a similar scheme with blue picking out on white carved ornament is shown on drawings by Chambers preserved at Newby Hall, Yorkshire.\* It is possible that this idea was French in origin since it may be seen, for example, in a drawing possibly by Pierre Collet dating from about 1620 for a fireplace;\* whilst, providing a second French parallel rather closer in date, Michel Gallet has noted in his Paris Domestic

\*72

\*Fig. 31

\*73

Architecture of the 18th Century (1972) that, if the Duc de Luynes is to be believed, the French fashion about 1742 was to apply green to carved ornament as a contrast to a white background.\* (The late seventeenth-century design for Queen Mary's Closet at Hampton Court\* will be recalled in this connection.) Interestingly, Chambers seems to have proposed a similar scheme using blue in this way on a pink ground on the ceiling of the Saloon at Pembroke House, Whitehall, London, in 1760;\* and the green lines on the entablature of the staircase in the Yenn drawing illustrated above\* may have been intended to represent a similar treatment on enrichments which have not been drawn.

Picking out  
combined with  
picking in

\*74

\*Fig. 119  
(detail a)

Sometimes too, both picking in and picking out could be employed together. Another entry in the edition of the Builders Price-Book quoted above, this time for a frieze, reads:

\*75

'girth 5½ inches, five times in oil flated, picked in and finished, twice in oil, in French greys, ornaments fine orange and white'.\*

\*Fig. 132

\*Fig. 125

\*76

Effects similar to this (shown by investigation in connection with the present study to be original)\* may be seen in the Etruscan Room of about 1790 by Wyatt at Heveningham Hall, Suffolk, in which the ornaments are painted orange and white on a brown ground;\* and may be seen too on Adam's elevation for the New Library at Kedleston already illustrated\* in which the grounds of the frieze are coloured green and yellow, the mouldings between them are blue, and the raised ornament is brown or white. The same drawing is interesting as showing the treatment extended to part of the sub-frieze at impost level, whilst the fluting in the latter is picked in with blue. Fluting could alternatively be treated the other way round, and in the ceiling of the Second Drawing Room at 20 St. James's Square, London, it is shown as purple with pale lilac picking in.\* The collar of a capital or impost such as that in the Kedleston example, could, by analogy, also be treated either way, being either coloured or white; and instances of both methods may be seen on the sectional elevation attributed to Stevens already illustrated\* in the archways leading to the staircase.

\*77

\*Fig. 128

## 'Etruscan' rooms

Some of the most elaborately detailed picking out and colouring is to be found in the 'Etruscan' rooms of Robert Adam which form a group dating from between 1773 and 1780. Dr. Stillman has suggested his inspiration for these, with their flat, linear decoration, derived from designs published by the Italian engraver Piranesi in his Diverse maniere (1769) in which he specifically recommended antique vases as a source of wall decoration;\* but it is also important to bear in mind their precursors in Adam's oeuvre, the 'antique' ceiling designs described in the previous chapter in which coloured ornament was painted on a flat ground. On elevations 'antique' painted decoration was generally confined to wall, door, or pilaster panels; but on ceilings it was often less constricted. The Etruscan rooms thus follow naturally from this phase of his output, the latest example of which amongst the drawings at the Soane Museum is an ante-room at Ashburnham House in Dover Street, London, almost certainly of 1773.\* This was mentioned in the previous chapter, and, apart from stylistic development of the ornament, Adam's Etruscan rooms represent in practical terms a change of palette coupled with extension of the painted decoration to cover the whole of the flat wall surfaces.

### Early examples

The earliest of the Etruscan interiors seem to have been at Ashburnham House (whose exactly contemporary 'antique' ceiling has just been mentioned) and at Derby House, Grosvenor Square, (demolished 1862). The Countess of Derby's Dressing Room on the first floor of Derby House is illustrated in the first part of the second volume of the Works in Architecture, the Preface to which is entirely occupied with an explanation of this 'new style of decoration' for which the Brothers naturally claimed full credit. As published in the coloured copy of the Works at the Soane Museum,\* the central square section of the ceiling has a green ground and is surrounded by a pale blue frame. Within it are set brown panels, again framed in pale blue, on which are painted female-headed griffins in orange-brown chiaroscuro. The style of the ornament and colouring, Adam noted, was 'imitated from the vases and urns of the Etruscans', and it is therefore of considerable interest that whilst the copy of his drawing at the Soane Museum (dated 1773) is virtually identical in design, the colouring is rather different, having dark green inset panels within pink frames. These,

however, are set on the same pale green ground framed in pale blue, and the 'Etruscan' colouring is confined to the small rectangular panels set on the diagonal. It seems possible, therefore, that the idea of its use on a larger scale was a later thought. In the ceiling of the adjacent Bedchamber,\*  
\*81 a band of yellow-orange and black ornament surrounds a pale green oval centrally placed on a rectangular, pale bluish-grey ceiling. This was surrounded by a yellow-orange and black enriched moulding, and set above a green cove; whilst both rooms had curtain cornices coloured in the pale grey-blue, black, and  
\*82 orange-brown which are the hallmarks of the style.\* In addition, the fireplace, girandoles, a commode, and the door panels in the Dressing Room were also consciously 'Etruscan' in their  
\*83 colouring.\*

At Ashburnham House, Adam's drawing (dated 30th June 1773) for the ceiling of the Second Drawing Room shows he intended a similar colour scheme to that in the two rooms at Derby House, and is of particular interest since certain parts are specifically noted in manuscript as being 'Etruscan yellow' and  
\*84 'Etruscan brown'.\* Unfortunately, however, no complete elevations of this or the Derby House interiors appear to survive; but in 1774 Adam was at work on designs for a circular room (the Circular Toilet Room, or Lady Fitzroy's Dressing Room) at General Fitzroy's house near Southampton, Hampshire.\* It is not known whether this was ever executed, but the elevation shows he proposed a green dado and darker green skirting below pale orange-coloured walls; whilst the ground of the arcade panels was grey. With the substitution of a blue-grey for that on the walls, these colours were repeated on the ceiling, and the unity of the two further emphasised by the use of the black and orange of the pilasters and frieze on various ceiling mouldings and ornaments in a way familiar from the analysis above concerning the way Adam related wall and ceiling colouring on his other schemes. An especially interesting feature, however, lies in the red and green ribbons and festoons in the segmental heads of the arcading. This is obviously reminiscent of his earlier 'antique' schemes, and its survival here suggests, perhaps, that an undated scheme for an unidentified room amongst the collection of his drawings at the Soane Museum may have been  
\*85 a transitional essay towards the 'Etruscan' style.\* Both

\*Figs. 134, 135

ceiling and wall are covered by arabesque reminiscent of Piranesi's Diverse maniere engravings, but, rather than being in orange or brown are predominantly green, red, and yellow (or gold) on a white ground. The same is true of another drawing in the same volume at the Soane Museum, also for an unidentified room, in which, above a green dado and pale brown skirt- ing, green palms break up a pale blue-grey wall surface embel- lished with red and green festoons of flowers; whilst a pair of female-headed griffins either side of a golden yellow urn crown the door.\*

\*86

Mature examples

Having completed their description in the Works of the origins of the 'Etruscan' style, the Adam Brothers continued:

'Many persons of rank and fortune having been struck and pleased with the taste, several apartments of the same kind were immediately designed, and have been executed under our direction at the house of Earl Bathurst, and that of the Countess Dowager of Home in Town, and at Mr. Child's, at Osterley Park'.\*

\*87

\*88

+89

\*Fig. 136

\*Fig. 137

\*90

\*91

All three were designed in the course of 1775. The Apsley House room for Earl Bathurst\* and Lady Home's Bedroom+ combine, like previous schemes described above, a green dado with grey walls and orange and black ornament. At the latter,\* however, an additional feature common to nearly all his later Etruscan schemes is present, a band of repetitive ornament above the chair rail. This appears too in the well known Etruscan Dressing Room at Osterley,\* the only one of the whole series of rooms to survive virtually intact; but here and in all save one of the subsequent schemes for which evidence in the form of design drawings remains at the Soane Museum green is omitted and the elevations are based entirely on blue-grey areas of wall and dado with black and orange ornament. The Osterley ceiling is notable, however, as containing green panels; but is especially interesting since when originally designed in 1772 the drawing shows it was intended it should be tinted in an everyday pink and green,\* and the colouring seems to have been made 'Etruscan' only as a later thought. This may have been as early as 1772, the date on the alternatively coloured drawing (which is of identical architectural design) at the Soane Museum;\* but



it seems more probable that the manuscript subscription on this is incorrect, since in the Works extract quoted above Adam specifically noted that the Osterley example followed the Derby House interiors of 1773, and all the dated Osterley elevations at the Soane Museum are of 1775.\* It is also worthy of note that Adam provided alternative (undated) colour schemes for the ceiling of the octagonal Vestibule beneath the front steps at Osterley, one in 'antique' colouring and the other, of identical design, in 'Etruscan' colours, showing the interchangeable nature of 'Etruscan' and 'antique' colouring in his mind.\*

#### Later examples

The Dressing Room at Osterley shows the 'Etruscan' style in its full maturity, and it was used by Adam on a particularly grand scale in 1780 in the Great Dining Room at Cumberland House, Pall Mall, London (demolished). Here, the drawings show orange and black ornament was applied to a blue-grey ceiling and wall ground, with a pale green frieze and band above the dado, which was itself painted a pale orange or off-white.\* About the same time, Adam prepared an Etruscan scheme for the Drawing Room at Byram, Yorkshire;\* another using the same colouring was prepared at an unknown date for 'M.<sup>r</sup> Adamson's Parlor';\* and in 1778 an Etruscan-sounding scheme of orange, black, grey, and white was proposed in a manuscript note on the design for the ceiling of the Lady's Dressing Room at Mellerstain, Berwickshire.\* Others naturally imitated the style. The Etruscan Hall at Woodhall House, Hertfordshire, by Thomas Leverton may date from about 1777-82, and about 1790 Wyatt provided the Etruscan Ante-room at Heveningham whose complex picking out has already been mentioned. Altogether, however, although its influence continued to be felt well into the nineteenth century, this aspect of eighteenth-century interior decoration was probably restricted to a comparatively small number of rooms which depended for their effect virtually entirely on the use of 'Etruscan' motifs on walls, doors, or ceilings. This, often applied to large expanses of wall in an almost wallpaper-like way reminiscent of the treatment of the wall areas in Stuart's Painted Room at Spencer House of 1759 (discussed in the last chapter) was complemented by complex picking out on the moulded enrichments

and by the use of furniture coloured to match. They illustrate well, however, the care taken to balance the relationship between walls, ceiling, and furnishings, so as to ensure that the whole added up to a harmonious entity; and epitomise the role that minute details of picking out could play in the later eighteenth-century interior.

Special  
treatments  
Shadowing of  
ornament

One further elaboration of technique remains to be mentioned, that of 'shadowing'. In the 1780 accounts for the Strand Block at Somerset House, several items such as the following, for the cove of the common Ante-room shared by the Royal Society and Society of Antiquaries, appear:

\*98 'Ornament pannels in the Cove very rich 5 times painted dead white with a pink Ground and back shadowd for Effect!.\*

\*99 A similar treatment was used on some of the ceiling ornament in the Council Room of the Royal Academy, whilst in the Library provided for that body it is specifically the vases and drapery in the ornamental panels of the cove which are mentioned, in this case 'shadowd & back shadowd for Effect!.\* Seven years later the trophy panels in the Hall at Osterley were 'Pick'd in... with extra fine tints minutely dispos'd to relieve the embossments of the armour &c'.\*

\*100

Such treatments were no doubt intended to heighten the natural shadows of low-relief ornament, especially where it was set in flat lighting, and would probably have been extremely subtle, possibly quite invisible from a normal vantage point. In addition, completely trompe l'oeil ornament was employed on occasion, the false fans on the ceiling of the Entrance Hall at Heveningham probably being a surviving instance;\* and in the 1820s Peter Nicholson noted:

\*Fig. 138

'ORNAMENTAL PAINTING embraces the executing of friezes and the decorative parts of architecture, in chara-obscura, or light and shade, on walls or ceilings. It is performed by first laying a ground of the colour required, then sketching the ornament with a black-lead pencil, and afterwards painting and shading it,

\*101 so as to give the required effect.'\*

The signwritten inscription above the doors to the Exhibition Room of the Royal Academy at Somerset House, described in the 1780 accounts as: 'No 20 large Capital Greek Letters in Oil Gold 3 inches high' were also given false depth by being 'deepened & back shadowd', and this was, no doubt, a common practice.\*

The ironwork  
of staircases

\*102 One particular facet of late eighteenth-century architectural colour which seems to have amounted almost to a convention in high class interiors was the use of blue on the ironwork of staircase balustrades. For many years blue had been used on exterior ironwork, notable examples including the gates at Ham House, Surrey, painted 'small [? smalt] blew' in 1671;\* a balcony (possibly that of the Water Gallery) at Hampton Court, Middlesex, painted blue in 1690;\* and the iron gates at Broadlands, Hampshire, which Celia Fiennes recorded were blue in about 1696.\* The earliest interior example so far noted, however, is that of Matthew Brettingham's Egremont House where between 1759 and 1764 the 'Rail of Stairs' was painted 'prussian Blue' and in 1762 further work went into 'picking out the Rail on Great Stairs blew after the gilders'.\* In this connection it is worth mention that the staircase ironwork of William Kent's house for Henry Pelham in Arlington Street, London, was painted yellow in 1748 (possibly in preparation for gilding),\* and in the almost contemporary South Stairs at Nostell Priory Paine's ironwork seems from samples recently taken to have been painted a neutral grey or iron colour.\* From the early 1760s, however, several examples of blue ironwork may be found, and the colour appears on a number of drawings including the Yenn and Hardwick examples already illustrated.\* That this was not merely an architects' convention to indicate the use of iron is shown by the accounts for Somerset House, where many items of ironwork, including that of the staircases in the Strand Block, were painted blue;\* whilst at Osterley Park the 'Iron Rail' of the Principal Stair was painted 'fine blue' in 1772-4, (it was probably the same item which was finished 'fine garter-blue' in 1787).\* Furthermore, a 'good blue for ballusters, railing, &c.' is included in an early nineteenth-century list of painters' colours, again making its actual use explicit.\* It is

\*Figs. 119  
(detail b), 128

however, unlikely that blue was invariably used, especially where ordinary houses were concerned; and the ironwork of the back stairs in the Strand Block of Somerset House, at least at the end occupied by the Royal Society and Society of Antiquaries, seems to have been painted lead colour in 1780.\*

\*112

### Gilding

\*113

Although Burke remarked: 'Much of gilding... contributes but little to the sublime',\* in many of the finest and most lavishly conceived rooms in which 'beauty' was the quality sought this, the most expensive mode of embellishment practised by the house-painter, naturally continued to play a significant part. From the middle of the century, however, in parallel with the increasing subtlety and refinement already seen in the employment of paint, delicate and more varied styles of gilding were applied in pursuit of the ideal. Two of these, variation in the colour of leaf, and the juxtaposition of contrasting degrees of finish or texture, had been practised during the seventeenth century; but in the latter half of the eighteenth 'party gilding', in which gold was applied only to part of the raised ornament, became extremely fashionable.

### Colours of gold

\*114

Considering first the matter of variation in colour, in 1678 René Cousin was paid for gilding 'the Ornaments of the Dyall over the Greate Gate that fronts to the greate Courte [at Windsor Castle] being done of Right Gold Collour, of a green Gold Collour, and of a Brasse [i.e. probably bronze] Collour'.\* A similar juxtaposition was used by Kent, who employed leaf of both green and ordinary colour in the ceiling of the Cabinet at Houghton, Norfolk. According to the gilder's account (covering work executed between 1753 and 1756) the Red Damask Room at Norfolk House was 'green guilt',\* and Farington (who seems to have transferred it in his memory to the State Bedroom) commented that this 'Pale Gold... was vastly admir'd, but to me looks like tarnish'd silver'.\* Within a very few years, on the other hand, public opinion seems to have changed, and Dossie observed:

\*115

\*116

\*117

'The full yellow is certainly the most beautiful and truest colour of gold; but the deep reddish cast has been of late most esteemed from the caprice of fashion.'\*

No example of red gilding has, however, yet been located. Writing in France a little later, Watin remarked that gilding in different colours was 'out of favour;\* but Chambers juxtaposed ordinary and green gilding in the ceilings of the Library and Council Room of the Royal Academy at Somerset House in 1780,\* and the same two colours may be seen in the Boudoir at Attingham Hall, Shropshire,\* a room whose present decoration may date from the closing years of the eighteenth century although it is possible it was repainted rather later.\* The effect produced by the use of different colours of gold is one of extreme delicacy, and it seems possible silver leaf too may have been used on occasion to extend the contrast still further, and sometimes on its own. References to it are rare, however, but '2 large Cornices' (that is, presumably, the curtain pelmets), the pier glass and pier table, and the fillets around the hangings in the Yellow Drawing Room at Harewood were finished with burnished silver and varnished in 1775,\* and other examples may yet be found, especially, perhaps, on furniture rather than on architectural decoration.

Contrasting  
textures

It was, of course, on furniture that the second technique listed above came into its own. A design by John Linnell shows the way in which variety was added to pier glasses and other furnishings by the juxtaposition of burnished and matt gold,\* a technique, it will be remembered from Chapter II, mentioned in the seventeenth century by Félibien and Stalker and Parker. Thomas Chippendale too seems to have employed this technique, and a note on a design for a mirror at Nostell Priory, part of the ornament on which is coloured yellow, reads: 'NB. The Coloured part is burnishe'd Gold, the other part all dead'.\* This subtlety can rarely have been applied to buildings, however, since oil gilding was generally employed for architectural work; but one early nineteenth-century example in which 'burnished and matted gold' seem to have been employed, the Golden Drawing Room at Carlton House, was mentioned in Chapter II. It is also worth recalling that rates are given in late eighteenth-century editions of the Builders Price-Book for both 'Gilding' and 'burnished' gilding.\* Some variation in finish is, of course, possible within the limits of oil gilding (a fact acknowledged by Dossie in his observation that use of a particular variety of gold-size would make for a less glossy surface than could be

\*125

obtained with others),\* but the contrast achieved in this way could never approach that which exploited the extremes of burnished perfection possible with water gilding on a prepared ground of gesso. It is also of some interest that there seems, if Dossie is to be believed, to have been a fashion in some quarters for such a matt effect, since, in a remark reflecting the principles propounded in Burke's Essay, he observed that the less glossy finish was,

\*126

'esteemed a perfection in this kind of gilding; though, taking away the prejudice of fashion, I should think the most shining the most beautiful'.\*

#### Party gilding

It will be remembered that both authenticated examples of original earlier gilding described in previous chapters exhibited a solidity of finish. With the increasing delicacy of architectural colour and ornament, however, the style changed, and Chambers, for example, advised the Earl of Charlemont in 1769 that if he was to gild the Apollo's head and rays in the ceiling of the Saloon of the Casino at Marino it should be,

\*127

'white & only heightened or streak'd with gold for if it be Solid Gold it will look Clumsy'.\*

\*Fig. 140

The term 'party gilt' was used in painting accounts to describe the technique, and the way in which it came to be applied is well illustrated by a set of notes for the gilding intended on the ceiling of the Drawing Room at Thirkleby Park, Yorkshire, (c. 1784-7), Wyatt's design for which is illustrated:\*

\*128

'Ceiling - Center Rose, seed white, leaves round d.<sup>o</sup> gilt; stems of ruffled leaves & edges gilt: stems of water leaf white, leaf gilt. Frame cut fillet, & inward bead gilt. Ribbon on reed molding gilt, & all the Wreath. Great Border, gilt fillet; small ogee white, ornament [sketch'd] gilt. 8 Roses at corners gilt, except the seed.'\*

Wyatt seems also to have proposed the use of party gilding in a similar way in the centre rose (later altered to a painted

\*Fig. 141

roundel) in the ceiling of the Pink Drawing Room at Heveningham. The detail of his drawing illustrated\* shows clearly both the lightness of character it bestowed on the design in contrast to the ponderous effect of the solid gilding typical of an earlier generation, and the importance which this method of adding the sought-after quality of 'variety' to a beautiful composition came to acquire.

Composition of  
gilding schemes

To achieve a good balance in such a gilding scheme needed careful thought, and Chambers observed:

\*129 'It requires a great deal of judgement to distribute the gilding properly: care must be taken not to leave some places bare, while others are so much covered that they appear like lumps of gold; and, in general, it is to be observed, that, wherever the gilding tends, in the least, to confuse the Design, or make the outline of any part indistinct, it is ill employed.'\*

\*Fig. 142

\*130 The consummate skill of Adam in this respect may be appreciated immediately from the ceiling of the Drawing Room at Osterley Park,\* which, samples taken in connection with the present study have shown, retains its original gilding.\* Although Adam's drawing, in accordance with his general practice, seems to show  
\*131 solid gilding throughout,\* a combination of solid gilding, party gilding, and hatched gilding (the terms used in David Adamson's bill for the ceiling dated 1772-4)\* was adopted and  
\*132 may be seen in the room today. The centre ornament is party gilt, whilst the mouldings and fillets are solid gilt, and the ornaments in the spandrels around the central oval are described as 'solid gilt and part hatched and party Gilt'. The flowers, each 1 ft. 10 in. in diameter, in the seventy-two octagons are similarly treated, the one hundred and eighty-nine flowers 4 in. square are party gilt, and the two hundred and eighty-eight husks 6 in. long are solid gilt. As mentioned in Chapter VI, the account shows that three of the 1 ft. 10 in. diameter flowers were first gilded differently, probably as samples for Adam's approval; and a further measure of the care and attention afforded to the gilding is given by the contrast of its total cost at £262 3s. 3d. with that of the elaborately picked paintwork at the comparatively smaller sum of £66 12s.

11½d. Even the latter was, of course, itself costly by more ordinary eighteenth-century standards.

Naturally, the mouldings of the elevations of the Osterley Drawing Room were included in the gilding scheme, and it is clear that such a unity between wall and ceiling was usual. Indeed, in a passage expanded from the first edition of his Treatise, Chambers observed:

\*133 'Where the profiles or other parts of a room are gilt, the ceiling must likewise be so, and that full as profusely as the rest.'\*

Sometimes the gilding would even be extended to the glazing bars of the window sashes, a treatment which seems from Adam's drawing to have been intended in the Drawing Room at North-  
\*134 umberland House;\* and gilded pier glasses, overmantel mirrors, and other furniture would often be placed in interiors. Such objects would often, however, be placed in rooms whose architecture was ungilded, and several drawings by Wyatt, including that already illustrated for the Drawing Room at Aldwark Hall,\*  
\*Fig. 116 appear to show this intention.\*  
\*135

Fashions for  
and use of  
gilding within  
the house

\*Figs. 67, 89

To a certain extent, of course, any judgement about the role played by gilding during the second half of the eighteenth century is dependent on the interpretation of coloured drawings and on an assumption that bright yellow applied to architectural ornament stood for the use of gold in execution. In a number of recent restorations based on drawings, including those of the ceilings in the Dining Room at Kedleston and the Library at Osterley,\* this convention has not been accepted and, indeed, there must always remain a measure of reserve in propounding a general rule that yellow on architectural ornament was intended to convey the use of gold. It is clear, nevertheless, that yellow did often stand for gilding, and on his design for an octagonal ceiling in a garden building for Lord Melcombe dated 1762 showing yellow ornament on a white ground Adam specifically noted: 'The Mouldings & Ornaments proposed to be executed in Stucco & Gilt', making it explicit in this instance.\*  
\*136

Yellow appears on architectural ornament on nearly all



Adam's 'antique' ceilings at the Soane Museum, but in slightly fewer than one-fifth of his ceiling designs with tinted grounds. Although it has been suggested that gilding became unfashionable in the latter part of the eighteenth century\* (and it was certainly less prevalent than modern popular taste assumes) apparent examples in Adam's oeuvre as revealed by his drawings at the Soane Museum occur, nevertheless, in nearly every year from 1760 to 1780. Some houses (notably, by Lady Mary Coke's account of the early 1770s, Luton Hoo, Bedfordshire;\* and, by Walpole's account of 1782 Portman House at the north-west corner of Portman Square, London)\* were, doubtless, without gilding; but it obviously continued to play an important part in the decoration of others. Its use did, however, become more limited in one very important respect, in that it would often be the drawing room alone in which gilding was employed. At Houghton, as already mentioned, gilding seems to have been used throughout the state rooms on the piano nobile, but not in the Hall or family rooms; and the same was true of Norfolk House where the Hall, Staircase, and ground floor rooms were without gold, but every one of the sequence on the first floor from Music Room to Bedroom, Dressing Room, and Closet was elaborately embellished with gold leaf.\* By contrast, apart from Sir George Colebrooke's House in Arlington Street, the designs for which (dated 1771) indicate that gilding was intended in at least six rooms (including the Front and Back Parlours, the Back Room on the first floor, the Gallery, and a Bedroom),\* in most other Adam houses gilding, if present, seems to have been confined to the drawing room. Thus, leaving aside the 'antique' rooms, of the Adam drawings at the Soane Museum noted in connection with the present study, more than a score of drawing room designs have yellow washes which appear to stand for gilding, but only 4 dressing rooms, 4 libraries, 2 galleries, 2 parlours, 1 bedroom, and 1 staircase.\*

Disposition of colour within the house

This leads naturally to the final consideration to be discussed in this chapter, the disposition of colour within the house. Given the constraints imposed by the materials available to the house-painter and their cost discussed in Part One of this study, two aesthetic principles seem to have been important, firstly the use of cheaper colours in humbler rooms and circulation spaces, and secondly a strong emphasis on variety,

so that successive rooms in a suite or apartment would be decorated differently. With the gradual change in relative importance of the rooms forming an apartment, however, rather than following a sequence of increasing richness as the closet, now often described as the dressing room, was approached (the progression seen, it will be remembered from Chapter IV, at Dyrham in the 1690s) money was increasingly lavished on the drawing room. Symptomatic of this is the use of gilding here to a much larger extent which has just been observed.

Technical  
constraints  
and cost

\*143

Before looking at this in more detail, three ways in which technical constraints were important must be mentioned. In the first place it will be remembered that flatting was considerably more expensive than ordinary paintwork. Its use was accordingly reserved for the fine rooms of a building as is clear from contemporary painting accounts including, for example, those for Somerset House.\* Hence, servants' rooms are likely to have had paintwork with a rather greater sheen than the fine, virtually matt finish in grand apartments. Secondly, the cheap 'common' colours would have provided the everyday background of ordinary paintwork in humble dwellings and servants' rooms. Thus in a contract of 1770 for the erection of a dwelling house and shop in the parish of St. Anne, Middlesex, the painter was required to,

'paint all the outside and Inside wood work of the dwelling house Shop and little Room three times in Oil in any common colour that shall be approved of'.

\*144

In this instance the internal joinery consisted in general of a softwood dado, cornice, and window linings, with closets either side of the chimney breasts (although in the garrets there were only a skirting and chair rail in place of the full dado). All the plasterwork was simply whitened, but, no doubt, colour in one form or another, possibly distemper or wallpaper, would later have been applied to the walls by the occupier.\* A corresponding scheme in the rooms belonging to the House-keeper of the Royal Society and Secretary of the Society of Antiquaries at Somerset House in 1780, employing stone colour joinery and chocolate brown doors and skirting, has already been described. The former room was provided with a grey,

\*145

patterned wallpaper, and the latter with a more expensive paper in two greens.\* Lastly, even within fairly grand rooms cost would constrain the way in which colours were used. This may be seen clearly in Dance's scheme of 1786 for the Library at Lansdowne House (formerly Shelburne House but renamed after the Earl had been made Marquis of Lansdowne in 1784) in which the walls and ceiling are shown painted in cream and the fine colours are reserved for the small areas of superimposed, painted Pompeian ornament.\* Thus, the more expensive colours are conceived as set on a cheaper background in the same way that noble metal would be set into base metal or marble into free-stone, rather than an expensive material being employed as a setting for one more common.

\*Fig. 143

Such considerations completely explain advice given by Chambers to two of his clients. Writing to Robert Gregory concerning his house in Berners Street in 1771 he commented,

'if you have any Particular fancy about the Painting your principal Rooms be pleased to let me know[.] my intention is to finish the whole of a fine stone Colour as us[u]al excepting the Eating Parlour which I purpose to finish pea Green with white mouldings & ornaments'.\*

\*146

The previous year he had advised Gilbert Meason, a Leith merchant, that in regard to painting his parlours,

'if they are for Common use Stone Colour will last best & is Cheapest but if you mean them to be very neat pea green & white Buff Colour & white or pearl or what is called paris Gray and White are the handsomest'.\*

\*147

It is thus clear that expensive colours were generally reserved for rooms where they were particularly desired, whilst stone colour would often be preferred for halls, passages, or staircases in view of its economy and on account of its longer life than white, which might soon become soiled. This pattern may be seen in many surviving designs, including Chambers's 1759 drawing for York House with its stone-coloured entrance hall and stairs, and reception rooms with their fine papers or

\*Fig. 126 hangings.\* A similar convention may be seen in the work of his pupils. The section now attributed to Stevens shows a creamy yellow entrance hall with fine colours and paintings in the bedroom and other interiors,\* and Stevens's section of 1763 is comparable.\* Yenn too used the same convention in a second sectional elevation,\* and it is clear from the building accounts that at Somerset House Chambers had the Halls and Stairs painted stone colour, although some of the ornament was placed on a grey ground.\*

Use of more expensive colours in halls and staircases

\*148

\*149

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\*151

By the 1770s, however, exceptions are found, possibly as the result of French influence. In his compendious book of painting, gilding, and varnishing Watin noted that charcoal mixed with white distemper made a beautiful grey for ceilings and staircases;\* and in 1771 Mrs. Powys recorded that the Hall at Fawley Court was painted French grey,\* whilst a memorandum in connection with a house in Arlington Street dated 17th July 1775 noted:

\*152

'Ground of the great Staircase to be painted a light French Grey & the Ornaments White'.\*

\*153

\*154

\*Fig. 119

French grey was used on the window shutters and door friezes in the Hall at Osterley in 1772-4 suggesting, perhaps, that the walls and ceilings too were finished in that colour (possibly in distemper since they are not mentioned in the painter's account); but certainly in 1787 the ceiling, semi-domes of the apses, and trophy panels of the walls were painted in varied tints of the same colour in oil.\* Grey, however, was not the only colour to be used in such rooms, and George Richardson's design of 1774 for the Hall at Kedleston shows that he proposed the use of pink and green on ceiling and walls;\* whilst on the Yenn drawing illustrated\* it will be seen that green was used in both the entrance hall and staircase. How far these were isolated examples it is impossible to say with the evidence available, but it seems significant that of the Adam drawings at the Soane Museum, no ceiling design for a hall is coloured; and it seems likely, therefore, that whilst particular opulence was displayed in a number of instances by the use of expensive colours in such interiors the general rule was to paint them in white or a stone colour.

On entering a typical neo-classical house, one's first impression would thus have been rather colourless, but with anticipation of more exciting things to come. In Palladian times, as at Houghton with its Stone Hall, the same would have been true; but at Holkham the Hall was particularly rich, having alabaster columns standing on an alabaster pedestal. From this one entered the Saloon with its white and gold ceiling and joinery, hung with crimson velvet, on one side of which in 1756 were, in the words of Mrs. Powys,

\*155 'a dressing-room, bed-chamber, and inner apartment, called the Duke of Cumberland's, all to be hung with and furnished as the saloon; on the other side are the same rooms, called the Duke of Bedford's, hung with and furnished with crimson damask'.\*

\*156 Assuming that these observations are correct, Holkham seems to have followed the earlier taste for uniformity of treatment throughout an apartment; but the same does not seem to have been true of Houghton, except in the Green Velvet Bedchamber and its Closet, both of which, Walpole recorded, were hung with tapestry.\*

\*157 A similar tendency away from uniformity of colour in a sequence of rooms may, perhaps, also be seen in Pelham's house in Arlington Street where, the Inventory taken after his death in 1754 records, the Long Room on the ground floor had blue damask hangings and curtains, the Great Room adjoining to the left had red damask hangings and curtains, and Pelham's Library to the right had green lutestring curtains.\* It should not be surprising, therefore, that at Norfolk House every room in the grand apartment on the first floor was treated in a different way, but that this was still a fairly new idea is suggested by Farington's

\*158 comment that it 'used to be reckon'd absurd'.\*

On the eve of the neo-classical revolution, as will be evident from the references already made to it in this and the previous chapter, Norfolk House seems to have been of immense importance in bringing together many developments in taste and fashion from the first half of the eighteenth century and focusing them so that they became the root onto which the new interest in antique forms could be grafted. The Entrance Hall, painted dead white, was described by Farington as 'very Plain';

but he gave no description of the colour of the Staircase, and, although the accounts show that it was party coloured, it is possible that it was simply white and a rather neutral tone. The Ante-room on the first floor and Music Room to which it gave access were both party coloured, but the latter, like the remainder of the apartment, was gilded. The next room, the Green Damask Room, was hung with green damask. Here, as already mentioned, the entablature, window shutters, and architraves were all picked in with party colours, and similar elaboration was practised in the next room, hung with crimson damask, in which further variety was introduced by the use of green gold. From this the Great Drawing Room, hung with fabulously expensive tapestry which Farington recorded cost £900, was entered; whilst the mirrors, which he believed were the largest ever imported from France, had cost £1,000. The State Bedroom which followed, was much smaller in size and hung with 'Blew-Velour'. It had a party-coloured rococo ceiling in contrast to the geometrical forms of those in the three preceding rooms which were white; whilst the State Dressing Moom was 'intirely Chinese', with 'Hangings Painted either upon Sattin or Taffity, in the most Beautiful India Pattern you can Imagine, Curtains & Chairs the same', a 'French cornice', and party-coloured ceiling. The final room, the Closet, seems simply to have been dead white and gold, 'furnished w<sup>t</sup> a taffity painted with Flowers' and filled with 'an infinite number of Curiosites, in an Alcove'.\*

\*159

Altogether, therefore, with this glittering display of varied ornament and colour leading up to and contrasted with the Great Drawing Room followed by a more intimate Bedroom and Dressing Room, Norfolk House provided a notable background to appreciation of the designs by Chambers and his pupils described above. Chambers's York House design of 1759,\* the sectional elevation by Stevens of 1763,\* another now attributed to Stevens,\* and that by Yenn+ all show the same avoidance of monotonous repetition of colour in different rooms, and this is found too in the work of Adam. At Nostell Priory, for example, where Adam superseded Paine in the mid-1760s, samples recently taken from the Top Hall (Adam's drawing for which is uncoloured)\* have shown that its walls and ceiling were originally painted a uniform off-white, possibly matching the pair of freestone

\*Fig. 126

\*Fig. 127

\*Fig. 128 +Fig.119

\*160

\*161 chimneypieces.\* From it one entered the Saloon, which Adam  
shows on his drawings with an ungilded pink, green, and straw  
coloured ceiling inset with medallions on a dark red ground  
\*162 and placed above green walls with a pink frieze.\* The Draw-  
ing Room beyond was 'antique' in style with a gilded ceiling  
\*163 containing inset paintings and coloured arabesque\* set above  
walls embellished with fourteen pilasters (now removed) painted  
\*164 in arabesque.\* Completing the enfilade was the Library, whose  
bookcases, walls, and ceiling had grounds picked in with pink,  
\*165 green, and blue.\*

Although Adam seems to have designed the sequence over a number of years and in reverse order (Library, 1766; Drawing Room, 1767; Saloon, 1767-70; and Hall, 1771-2), there is, it will be observed, just as at Norfolk House, a considered progression to the richness of the Drawing Room, and every interior was treated in a different way. At Osterley too, where the gilded Drawing Room giving access to the great apartment designed between 1772 and 1775 has already been described, the same is true; but it may be seen in addition that, whilst variety is maintained, each room of the Apartment is so rich in its own way that any overall sense of marked progression in richness beyond the Drawing Room is rather lost. The Hall was French grey; the Drawing Room elaborately coloured and gilded and hung with 'pea green Silk Damask'; the Ante-room hung with immensely expensive Gobelins tapestry beneath an ornately coloured, but ungilded, ceiling; the State Bedroom (in which the magnificent state bed stands) was hung with green velvet beneath a comparatively simply coloured ceiling; and the Dress-  
\*166 ing Room decorated in the elaborate Etruscan style.\*

This uncertainty of progression seems to reflect a changing emphasis on the importance and usage of particular rooms, heralding the demise of the apartment. By the early nineteenth century the whole pattern of living had altered, so that ideals of decoration changed and the concepts of the eighteenth were superseded by attitudes which will be considered in the next chapter. Besides its studied opulence, Osterley is thus of importance in illustrating the outlook of its age; and, moreover, sums up its belief in established standards of beauty. At this time, the influence of Adam and his contemporaries was

felt strongly in France, and it is not inappropriate, therefore, to allow Watin to summarise formally the aspirations of the era. The great art of house-painting, he observed,

'est de plaire par une uniformité soutenue; d'en médionner les teintes, pour qu'elles ne soient ni trop dures ni trop foibles; de ne point choquer le regard, mais de la nourrir; de soutenir la vue sans l'embarasser; enfin, de ne point donner les couleurs trop tranchantes, de n'en pas substituer d'ondoyantes, & qui tiennent à plusieurs.'\*

\*167



It will be apparent that the years covered by Chapters IV to VII saw a significant development in attitudes to the use of colour in buildings. In the sixteenth century, it will be recalled, Serlio had regarded the use of blue on ceilings as a straightforward matter of convention; whilst Pratt, at the beginning of the period covered by this study, seems to have suggested that the proper colour for an element was one analogous to the material from which it was constructed, a second convention which, as has been shown, was observed in many interiors. A century later, however, Burke had come to see architectural colour in terms of completely abstract qualities such as delicacy or luminosity which, to his generation, suggested the appropriate application of certain classes of colour in the pursuit of the distinct ideals of Beauty and the Sublime.

At the same time, certain colours were given associations with particular concepts. In the 1680s Randle Holme, as has been mentioned, associated green, for example, with felicity and pleasure; but although it is possible such ideas may have been used on occasion to suggest the predominant colour within a room, there seems to be a complete absence of suggestions in eighteenth-century architectural literature as to the ways in which particular colours might be successfully combined to form a harmonious composition. This may, of course, be due in part at least to the general nature of the colour schemes in use up to the mid-eighteenth century, and although, as noted above, John Smith did provide a list of colours which 'set off best one with another', later indicating that by this he meant 'their making each other look most pleasant', it seems likely this was conceived more in terms of the visibility of figures painted on clock dial boards than intended for use in room decoration.

On the other hand, some years previously in the early 1660s, Sir Balthazar Gerbier, criticising Inigo Jones's Banqueting House in Whitehall, London, in his Brief Discourse Concerning... Magnificent Building, took offence at,

\*1

'Colours placed together, which agree not one with the other, as blew & green. God in his Rainbow having shewed us the best way of ordering Colours.'\*

He gave no justification, however, for his belief that these two colours, lying adjacent to one another in the Newtonian spectrum, should be antipathetic; although, after remaining dormant for many years, the sentiment which lay behind his remark, that the natural order of things would provide the key, was to become of outstanding importance a century and a half later. It seems, therefore, that it may have been left to Lairese at the beginning of the eighteenth century to provide the only explicit architectural framework for the use of different colours; but it will be recalled his outlook was specifically related to the choice of marbles for the different orders and their members (which were conceived as ranged one above the other) rather than to the general question of the combination of ordinary paint colours within a room. Hence, in the apparent absence of any more abstract considerations, the most comprehensive factor to constrain the combination of colours in a particular way was the hierarchy imposed by cost. This, of which there was universal awareness, provided a framework within which cheaper colours would be exploited as a setting or preparation for finer and more expensive tints, rather than vice versa, and thus exercised a negative influence by inhibiting the use of certain combinations which would have been seen as appropriate.

At the end of the eighteenth century and beginning of the nineteenth, however, colour began quite suddenly to be written about in a more positive way. Attempts were made by the study of natural philosophy to achieve a more intimate understanding of its character and to provide rules for its successful combination which were soon to be of application in buildings. One enthusiastic author summed up the fever which gripped those fascinated by the subject in the choice of a quotation from the French author Du Fresnoy as an embellishment to her title page:

\*2

'Return fair Colouring! ... Chaste Seducer! say,  
What Laws controul Thee, and what Powers obey.'\*

Strong ideas quickly emerged in the matter of the association of colour with the character of rooms for different purposes, thus developing in a dramatic way the broad considerations of economy familiar to architects such as Chambers, and the simple duality of the separate characters of Beauty and the Sublime postulated by Burke. Increasing use too was made of colour as a direct aid in the romantic reproduction of styles variously exotic or imbued with historical associations; and as the nineteenth century progressed, as scholarship increased and more accurate and more satisfactory information became available, all these ideas were developed to their fullest possible extent. They have thus come to form today an unconscious background to our use of colour, and for this reason understanding of them comes naturally to us. All are considerations with which we are familiar, all seem undeniably valid and even archetypal, and it is through their unquestioned universality that we have been accustomed to approach the problem of the use of colour in eighteenth-century architecture.

Today, moreover, it seems natural to expect any architect attempting the recovery of classical interior architecture to reproduce colour with the same painstaking care and accuracy as he bestows on form and motif, but, as has been shown, this does not seem entirely to have been the case during the eighteenth century, and even Robert Adam could scarcely have made this claim for his later tinted ceilings. Parallel instances of what may seem to us an abdication of scholarly completeness are easily cited. At Milton Abbey, James Wyatt, restoring the monastic church in 1789-91 as a family chapel, seems to have proposed the use of a pale blue ground picked in between the ribs of the vault erected about 1500 just as if it was a neo-classical domestic ceiling.\* A few years earlier, William Ivory, the son and successor of Thomas Ivory, the Norwich architect and builder, moved and adapted the Jacobean staircase at Blickling Hall, Norfolk. Unlike the old parts, which are oak, the new work is all in pine, suggesting it was intended that, once complete, the entire staircase was to be painted; and indeed a watercolour by Buckler dated 1820 shows the staircase, the treads excepted, white.\* Although today the paint has been largely removed, traces still remain in places, and sampling has indicated that all the layers present beneath the present

\*5 varnish are this colour without exception.\* Such 'non-archaeological' treatment of valued earlier timber elements was paralleled almost exactly at Audley End. Full of mid-nineteenth-century enlightenment, Richard Lord Braybrooke, describing the oak screen at the north end of the Hall in his History of Audley End published in 1836 recorded:

'The general appearance of the screen was materially impaired about the year 1740, when the Earl of Suffolk caused the whole surface to be covered over with white paint, and this operation was, in spite of all remonstrances, extended to the wainscoting with which the walls were fitted, as well as to the oak chimney-piece.'

Needless to say, by the time he was writing, all this paint had been taken off, so that, he remarked, 'the screen and chimney-piece look as well as they could have done before they were painted.'\*

\*6

Thus, although it seems perfectly natural to us to assume a quest for an absolute standard of archaeological accuracy, or to ask the question: 'How were colours harmonised in the eighteenth century?', neither is, it may be seen on reflection, strictly relevant. Adam, as has been shown combined archaeology with what he saw as the improvements in taste of a later age, and there is little evidence to suggest that there was an eighteenth-century concept of colour harmony in a modern sense. Should this seem surprising, it is worth bearing in mind that it is only in the writings of the Catholic architect A.W.N. Pugin (1811-52) in the 1830s that the idea is found that in building a church it is necessary to reproduce the complete mediaeval form as well as providing accuracy of detail. To look for the recognition of such concepts in eighteenth-century architectural colour is therefore perhaps like expecting a mid-eighteenth-century chemist to describe the properties of oxygen, a gas unidentified until the 1770s, or an eighteenth-century physicist to discuss the implication of Ohm's law, which was not propounded until 1827. In parallel with developing awareness of colour was the growing scientific knowledge of the relationships between the identified elements; and, just as the discoveries made in this field obscured earlier concepts

of the nature of things (so that the phlogiston theory of combustion, exploded by the isolation of oxygen in the 1770s, was largely forgotten by the mid-nineteenth century) so too by this date had eighteenth-century concepts of colour become overlaid and obscured by new ideas. In the same way, as early as 1857 when Wyatt Papworth (1822-94) read his paper to the Royal Institute of British Architects dealing with the introduction of house-painting to England, he had to quote the evidence of a friend then aged 85 to describe the bare bones of the basic eighteenth-century colour scheme, with its dark door and skirting, discussed in Chapters V and VII.\*

\*7

The purpose of this chapter is therefore two-fold: Firstly to describe the new concepts of colour which arose during the closing years of the eighteenth century, and their development during the first three or four decades of the nineteenth; and secondly, by means of this, to permit an appreciation of the way these have formed present-day attitudes. This will, at the same time, permit the contrast between our thinking and the comparative 'innocence' of earlier years to be grasped still more clearly, and reinforce the need for interiors of the century and a quarter covered in the previous four chapters to be approached in their own right, free from modern preconceptions.

\*Fig. 144

\*Fig. 145

The extent of the revolution effected around the year 1800 is immediately apparent in the contrast between a typical neo-classical interior of the variety discussed in the last chapter, and, for example, the Hall at Carlton House, London, as portrayed by W.H. Pyne in his History of the Royal Residences of 1819,\* or the design by Edward Blore (1787-1879) for the Staircase Hall at Corehouse, Lanarkshire, of some years later.\* How, it may be asked, can these be remotely related to the use of colour by the previous generation? Where, most importantly, is the hitherto all-pervasive white architectural framework? Of course, these two examples have not been chosen entirely at random, and instances are common where practice of the immediately preceding decades persisted and was used as a matter of normal course. Thus, for example, even the revived gothic interiors of Eaton Hall, Cheshire, (1803-12, 1820-6, demolished 1963) by William Porden (c. 1755-1822) which are shown in Buckler's watercolours dated 1824\* conform precisely with

\*8

\*Fig. 146

standard neo-classical practice, having dark doors and coloured walls set in a white architectural frame;\* whilst in such books as the Designs for Architects, Upholsterers, Cabinet-Makers, &c., published by Rudolph Ackermann in 1801, the same basis for colouring remained, although doors by this date were also often painted white, or in some instances perhaps, as the author suggested in the case of Staircase Hall he illustrated, a 'fine soft colour'.\* When the room belonging to the Housekeeper of the Royal Society at Somerset House was first redecorated, probably about 1790, the chocolate brown door and skirting were repainted like the remainder of the joinery in stone colour;\* and another, later, example of the same treatment is provided by William Evans's design for the Library at Quedgeley House, Gloucestershire, dated 1819.\*

\*Fig. 147

In fact, in the final analysis it is almost possible to see the white framework as implicit in the Hall at Carlton House and in the Staircase Hall at Corehouse, and still fulfilling a role in these interiors; although in neither case is it explicit in the colour scheme, and has become hidden by an overlay of new concepts. To understand these, certain influential factors must be analysed, and for purpose of discussion will be considered under three main headings, all of which, however, are closely inter-related: The first is the advance of archaeological knowledge, in particular in the field of Roman antiquity; the second the development of colour theory based on the study of natural philosophy and overlaid by the Germanic romanticism of Goethe; and the third the association of colour with the character of a room as a function of its purpose.

\*11

The period following the battle of Waterloo (1815) has been appropriately described as a time for the 'general dealer in styles' and the role played by the taste of the nouveau riche for such novelties emphasised.\* The stocks onto which these imported blooms were grafted were, of course, rooted deeply in the eighteenth century; and, indeed, in the last chapter the romantic incorporation of motifs from surviving classical ceilings, cinquecento arabesque, and 'Etruscan' ceramics in interior compositions was observed. Towards the end of the century examples became more numerous, and within the first fifteen years of the nineteenth there had been added to those listed above a plethora of coloured motifs drawn from more or less digested styles including Pompeian, Turkish, Saracenic, Indian, and Chinese; whilst by 1840, when H.W. and A. Arrowsmith's House Decorator and Painter's Guide appeared, nostalgia was culling specimens from nearer at home, and Louis XIV, Louis XV, Gothic, and Elizabethan items were being exploited in addition.

Over this period there were major developments in the use of colour in house-painting, although this process does not seem to have taken place in a coherent sequence, let alone in all the 'styles' simultaneously. Indeed, such was the vigour of the ferment produced by this harvest of fruit from alien climes, that one of the difficulties in attempting to discuss the period is to set down a logically connected chain of events. Nevertheless, it may be suggested that there were four main features in the process, each of which may be considered as representing an advance in outlook: In the first place, as has been shown, it was sufficient merely to import coloured motifs in order to lend 'authentic' character to a room; a second stage involved the use of special house-painting techniques such as marbling or bronzing to reproduce effects found in archaeological prototypes; a third development is found in a tendency to abstract colour from motifs and apply it to a general wall surface, as in the use of 'Etruscan' colours; and the fourth is the search for truly authentic house-painting colour. Taken overall, of course, these add up to no more than the steady increase in scholarship and accuracy of data in an age when the transmission of information about the colours used in buildings was a matter of extreme difficulty,\* and the only

\*12

reasonably satisfactory means by which this could be achieved was in the form of carefully produced, individually executed architectural record drawings. Even so, this was often an imperfect method, depending on the interpretation of the individual draughtsman, and examples may be found where independent drawings of the same subject offer conflicting data in the matter of the colours employed.\* There remains too, of course, the difficulty of translating a watercolour representation back into the true colour of the original at a time when no comprehensive standard of colour classification was available.

Motifs

Clouded  
ceilings

A glance through the sections of Pyne's Royal Residences illustrating the interiors of Frogmore House, Berkshire, rebuilt in 1792 by James Wyatt for Queen Charlotte, and Carlton House, London, rebuilt by Henry Holland (1745-1806) for the Prince of Wales over a number of years from 1783 onwards, will reveal numerous examples of ceilings painted to look like a cloudy sky.\* Pyne described that in the Dining Room at the latter, which formed part of the 'Lower Suite of Apartments' designed by John Nash (1752-1835) in 1814, for example, as 'painted to represent a light summer sky';\* but, although this and others in the building consisted simply of clouds, in some instances other motifs were introduced. On the ceiling of the West Ante-room, for example, a winged eagle appeared to support the chandelier, on that of the Throne Room cherubic figures fulfilled the same function, and comparable figures were present in the Blue Velvet Room.\* It seems quite likely that the use of such ceilings at Carlton House, a building which exhibited many stylistic connections with France, may owe much to French taste, and it is perhaps this that added impetus to the vogue in England. Late eighteenth-century French examples include the ceiling in the Boudoir of Madame de Sérilly (c. 1780), now in the Victoria and Albert Museum, in which the central panel, forming in effect a central oculus, depicts Jupiter astride an eagle in the clouds. This has been attributed to Jean-Jaques Lagrenée le jeune (1740-1821), who is known to have executed other panels for architectural settings. Similar figures amongst clouds appear too in other French designs of the period, including an example of about 1770 by the architect Claude-Nicolas Ledoux (1736-1806) for the Chambre of the Princesse de Montmorency at the Hôtel de Montmorency, Paris,



\*17 and another by Antoine Vaudoyer (1756-1846).\*

Such ceilings were not, however, entirely new in England. Pratt described the varieties of figure, including cupids,  
\*18 which were suitable for use in clouded ceiling panels,\* and the open Gallery in the Privy Garden at Oatlands, Surrey, had been furnished with a ceiling painted with 'cloudes and sky  
\*19 coulour' in 1638-9.\* Although this has been destroyed an extant example dating from the first half of the eighteenth century may be seen in Lord Preston's Study at Nunnington Hall, York-  
\*20 shire, forming a ground to painted armorials. In the early 1760s Chambers showed a clouded ceiling on the inside of the dome in his design for the 'Mosque' at Kew Gardens, Surrey;\* and it will be recalled that in 1780 the same architect had provided an oval ceiling 'Painted with a Sky in proper Colours'  
\*21 in the Exhibition Room of the Royal Academy at Somerset House.\* In 1775 Adam had proposed the use of clouds in the trompe l'oeil  
\*22 oculus of a box at the Theatre Royal, Drury Lane, London;\* and in 1785 the use of clouded ceilings seems to have been strongly advocated by Peacock, who wrote:

'In the ceiling should prevail, the light, cool, and delicately softened azure of the sky, diversified with such meliorated tints only, as the fleecy clouds produce, when illumined by the morning sun with "orient pearl and  
\*23 gold"'.\*

From this point, clouded ceilings seem to have become extremely popular and were, indeed, regarded as a normal trade item. The London grainer William Davies, for example, adver-  
\*24 tised 'ceilings clouded' on his trade card,\* and, as already noted in Chapter II, Vanherman gave details of the 'trade  
\*25 secrets' involved in this aspect of the house-painter's work.\* Examples are ubiquitous, and a clouded ceiling appears in a design dated 1797 by Joseph Rose (1745-99) for the Vestibule  
\*26 to the family pavilion at Kedleston Hall;\* other examples appear  
\*27 in the Ante-room and Drawing Room of Ackermann's Designs (1801);\* and in 1802 John Soane (1753-1837) proposed the use of 'light clouds' in the oculus of his Breakfast Room at Pitzhanger Manor, the villa which he built for himself at Ealing, Middle-  
\*28 sex.\* In 1808, George Smith published a design for a boudoir

\*29 with a clouded ceiling,\* and another is shown in the deliberately fashionable Living Room illustrating the thirteenth of the Fragments on the Theory and Practice of Landscape Gardening published in 1816 by Humphrey Repton (1752-1818).\* Such  
\*30 ceilings were to be seen in several rooms at the Royal Pavilion, Brighton, in the early 1820s, that in the Saloon being embellished with a dragon;\* and another example appears in a ceiling  
\*31 design by Nathaniel Whittock in The Decorative Painters' and Glaziers' Guide of 1827.\* The latter was intended as an embellishment for a concert room, the main circular panel being painted with a lyre in the centre, around which the clouding should, he directed,

\*Fig. 149

'be a deep yellow, with rays proceeding from it in every direction, of a bright yellow and white. The thin edges of the clouds are painted of this colour, and the larger masses with a red grey, making it darker as it approaches the outline of the border.'\*

\*32

Final examples are provided by the central rectangle in a ceiling design which probably dates from a few years later by Alexander Roos (an accomplished designer and draughtsman who seems to have been in Rome during the late 1820s and early  
\*33 1830s, but was active in England from 1834),\* and an aggressively portrayed instance extant in the Drawing Room at Capesthorpe  
\*34 Hall, Cheshire, about 1840.\* By 1828, however, Vanherman remarked that 'the rage' for clouded ceilings had 'of late much  
\*35 fallen off',\* and in 1840 the Arrowsmiths gave no example,  
\*36 suggesting that by then the fashion had indeed been superseded.\*

Trellis ceilings

In the course of his tour of Italy, James Adam had visited the Villa di Castello near Florence in early 1761 and seen its ceilings painted with a trellis, noting that they did 'vastly  
\*37 well in the country'.\* This motif obviously appealed to Horace Walpole too, who described the ceiling of his China Room at Strawberry Hill, Middlesex, as 'painted with convolvuluses on poles, by Müntz, from a ceiling in the little Borghese villa  
\*38 at Frascati';\* and it was also used by Soane in his Library at 12 Lincoln's Inn Fields on which he was at work from 1792. This seems to have given him much pleasure since in October 1802 he noted the same intention for that at Pitzhanger:

'Library. / Ceiling Trellis at / 6 Inches Squares /  
Sunk Pannels with / the same Plant as / in my  
\*39 Library'.\*

The ceiling at Lincoln's Inn Fields has recently been uncovered,  
and is thus available for inspection, although in a rather dam-  
aged condition; but such ceilings, which naturally form part of  
the much wider subject of 'The Panoramic Room' considered fully  
by Edward Croft-Murray (who describes both antique and cinque-  
\*40 cento precedents),\* probably enjoyed only occasional use.  
Nevertheless, in his Encyclopaedia of Cottage, Farm, and Villa  
Architecture (1833) J.C. Loudon noted that wallpapers with a  
trellis pattern were sometimes applied to ceilings, although  
he considered this in bad taste in country cottages 'as not  
\*41 contrasting with local circumstances'\* (an outlook differing  
from that of James Adam); and the fashion provides an interesting  
example of the application in early nineteenth-century English  
interiors of an imported exotic motif of Italian origin.

Arabesque and  
the treatment  
of bas relief

Arabesque too was imported from Italy by both English and  
French neo-classical architects, and in the last two chapters  
the way in which this brightly coloured motif was lifted from  
its native ground and re-set on English ceilings and walls  
whose basic colouration reflected contemporary ideals of Beauty  
was described. Use of this motif continued for at least a  
short time during the period which is now being considered,  
and in the Throne Room at Carlton House it was set on a gold  
\*42 ground.\* In the late seventeenth century D'Aviler had remarked  
that coloured ornament could be placed on grounds of matt or  
\*43 burnished gold,\* and Edward Croft-Murray has suggested the  
Carlton House examples were derived from French varietes of  
the type found in earlier panels such as those in the Victoria  
and Albert Museum thought to be by Clérisseau and Lavallé-  
Poussin, which are believed to date from about 1775 and to have  
\*44 come originally from the Hôtel Grimôd de la Reynière, Paris.\*  
The ultimate source for such motifs was, nevertheless, Italy,  
whose classical examples were discussed in Chapter VI, and where  
antique precedents may even be found for the increased richness  
\*45 provided by the gold grounds of the Carlton House specimens.\*

\*46 In the Circular Room at Carlton House it is, moreover, worth noting that arabesque on the doors was painted on silver;\* and it is also of interest that in the 1791 edition of his Treatise Chambers added to the passage quoted in Chapter VI above concerning the gilding of ornament on a white or coloured ground,

\*47 'but I have frequently seen that practice reversed with more success, by gilding the grounds, and leaving the foliage white, parti-coloured, or streaked with gold.'\*

\*48 Bas relief panels treated in this way may be seen in the designs of 1811 by Benjamin Dean Wyatt (1775-?1850) for the Theatre Royal in Drury Lane.\*

#### Pompeian motifs

The effect which an increase of archaeological knowledge had on design is well illustrated by the transition from the 'Etruscan' rooms of Robert and James Adam, Thomas Leverton, and James Wyatt, described in the last chapter, to the fully developed 'Pompeian' designs of Roos in the 1830s. As late as the 1790s, Wyatt's Etruscan Room at Heveningham provided its effect largely by the representation of figure motifs and other ornament simply transposed from pottery of 'Etruscan' type, whilst the dominant brownish colour which provided the keynote in both this and the earlier Adam rooms was taken, as the Brothers noted, from these ceramic objects. As if to emphasise the invented nature of their schemes, however, they also observed:

\*49 'It is nevertheless remarkable, that neither in Adrian's villa, where so much attention was paid to elegance and variety, nor in the Cryptae of Rome or of Baia, nor in any part of Herculaneum or Pompeii, has any fragment been yet produced of interior decoration, executed in the taste now before us.'\*

The continued momentum of the excavations at Pompeii during the last quarter of the eighteenth century, however, provided much novel material which could be exploited in interior decoration. In his design for the Library at Lansdowne House of 1786, for instance,\* George Dance the younger incorporated

\*50 'flying' figures typical of those found on the site,\* set in  
a gaily coloured framework of Pompeian wreaths and foliage.  
Similar figures occur again in panels set above the book-cases  
\*51 in one of his designs dated 1803 for the Library at Stratton  
Park, Hampshire (demolished 1960),\* together with another motif  
\*52 no doubt inspired by paintings found at Pompeii,\* that of  
paired birds eating from a raised cup. Another design by Dance,  
which is undated, that for an octagonal room for T.J. Heathcote  
Esq. in St. James's Square, contains a similar panel above the  
\*53 doors.\*

In the last two of these examples especially, it is appar-  
ent that the motifs were simply applied to a room of more or  
less standard contemporary overall design, in the same way that  
Adam was able to provide an 'Etruscan' effect using ceramic  
motifs in an otherwise normal interior. The same is probably  
true of the Library at Packington Hall, Warwickshire, dating  
from before 1810 and attributed by Croft-Murray to John Francis  
\*54 Rigaud.\* Thus, in each instance, although the rooms contained  
allusions to 'Etruscan' or Pompeian objects or motifs, there  
was no attempt to re-create a completely authentic classical  
interior in toto. A more archaeologically correct approach may  
be seen, however, in a room which formed part of the unsuccess-  
ful entry by John Goldicutt (1793-1842) in the competition held  
in 1823 for the erection of new buildings at King's College,  
Cambridge. Goldicutt had spent four years in Italy, returning  
to England in 1819, and in 1825 published his Specimens of  
Ancient Decorations from Pompeii with, as he remarked in the  
introductory text, 'a view to assist the Artist in the interior  
\*55 decoration of houses, as well in what regards figure as colour.'\*  
His design for King's shows a marbled dado and wall which pro-  
vide a suitable background to the flying figure applied to the  
\*56 main area of the latter.\*

Even this room though seems to depend largely on allusion  
rather than literal reproduction; but such designs were clearly  
popular, and in The Cabinet-Maker and Upholsterer's Guide, which  
he published in 1826, George Smith provided an exemplar for an  
'Etruscan' room, proclaiming it to be based on a recently dis-  
covered fresco in the villa of 'Marcus Arius Dioscoride' at  
\*57 Pompeii.\* In Britain it was, however, in all probability left

to Roos in the 1830s to pursue objective accuracy in a single-minded way, and amongst a number of other drawings by him which seem to be designs based on his first-hand knowledge of Pompeii, are two interior elevations dated 1833.\* Each is almost fastidiously correct in detail and colour, the only concession to modernity being the white stone or marble fireplace shown on one wall.\* From the same volume of drawings a ceiling bearing the subscription 'Leamington' may also be mentioned.\* The name suggests it was intended as a design for a particular site, and it was clearly based on one of the ceilings from the villa of 'Marcus Arrius Diomede' which had been published by Goldicutt,\* although it may well have been drawn from Roos's own direct knowledge of the remains.

\*58

\*Fig. 150

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#### Other styles

For the interior decoration of buildings throughout the period covered by this chapter, the importance of the coloured, imported motif (which, as indicated in Chapter VI, was now firmly established as lying within the province of the house-painter) is therefore clear. So too is the way in which its use followed closely on increasing archaeological knowledge. In the selection of a suitable motif fashion and personal leaning or interest played a large part; and, besides those already enumerated, an increasingly dominant role was played by heraldic devices with their mediaeval or old-English associations in buildings such as Fonthill Abbey or Eaton Hall.\* More whimsical and shorter-lived associations were provided by the Chinese 'props' at the Royal Pavilion, Brighton, which was decorated under the direction of Nash between 1815 and 1821; and an echo of these may, perhaps, be found in the design for a 'Chinese Apartment' provided for decorative painters by Whittock only a few years later.\* This contained the essential ingredients of bamboo framing for the 'Chinese' landscapes on the walls, and 'Chinese' trellis around the dado, but lacked the extravagant dragons and mandarins of Brighton. Other styles were, perhaps, less endowed with distinctively coloured motifs, and attention must now be turned to the use of special techniques in the reproduction of authentic effects.

\*Fig. 146

\*61

#### Techniques Marbling

To the architect, a necessary corollary of increasing archaeological and stylistic knowledge was awareness of the integrity which existed between a motif and its historical

setting. Although marble or scagliola had often been used for columns, a return was seen in the closing years of the eighteenth century to the use of painted imitations, or 'marbling'. Soon, moreover, it was not only used on such limited elements but also on walls in a way reminiscent of the late seventeenth century in both France and England, as, for example, in the Balcony Room at Dyrham Park discussed in Chapter IV. Together with clouded ceilings, this renewed favour for marbling was common to both France and England; and again, although one may suspect French influence helped to lend impetus to its use, it is clear that in both countries classical Italy acted as a first-hand source. The use of marbling by the ancients was mentioned by Vitruvius,\* and classical examples appear to have been extant in the eighteenth century at Rome. When in Italy between 1776 and 1779, Thomas Hardwick, for instance, made record drawings showing the 'manner of finishing one of the rooms in the house discovered in 1777 near the Villa Negroni at Rome'.\* In this antique room marbling seems to have played an important part, and examples, perhaps similar to the two eventually published by Goldicutt, may also have been visible at Pompeii.\*

\*62

\*Fig. 151

\*63

Pyne's view of the Entrance Hall at Carlton House, and the description of 1819 which accompanies it, present an interior in which real marble and imitations were united in the composition.\* The columns and antae on each wall were of Siena marble supporting an entablature painted in imitation of the same, whilst the walls themselves were described by Pyne as,

\*Fig. 144

'granite-green, which accords admirably with the effect of the Siena marble, the verd antique [on the dado], porphyry, and the several imitations of these costly materials'.\*

\*64

It has been suggested that this interior was amongst those completed by 1789 under the direction of Holland, and, together with the Staircase and Tribune, was one of the few to escape the changes to which others had been subject by the time Pyne prepared his account of the building.\* Significantly, in the discussion which followed Wyatt Papworth's lecture to the R.I.B.A. in 1857, Mr. J.G. Crace stated that his father remembered the

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introduction of both graining and marbling to this country  
'about the year 1782' by the French workmen employed at  
Carlton House, when they were 'considered as great novelties,  
\*66 or at all events as a re-introduction'.\* It seems, however,  
as will be shown, that at least as far as graining is concerned  
his memory may have been slightly at fault; and the possibility  
that the Hall may have been repainted, perhaps under Nash's  
direction as part of his work at the house in 1814, cannot  
be entirely ruled out, especially since the Staircase and  
\*67 Tribune seem so much more conservative in their use of colour.\*  
Nevertheless, that the marbling did form part of the original  
scheme appears quite likely since in Ackermann's Designs for  
Architects the use of a 'tender yellow marble' for the walls  
of the Staircase is suggested. Use of a slightly veined marble  
on the walls is also given as a suitable finish in the Dining  
Room, and in the Bath the 'plainest uniform marble' formed one  
\*68 of the alternatives.\*

By at least 1801, therefore, marbling had again entered  
the English design repertoire in a significant way, and on his  
drawing dated 14th February that year Soane recorded his  
intention to employ marbling in the Entrance Hall of his own  
\*69 villa, Pitzhanger Manor.\* The variety to be imitated was  
'veined marble or Giallo', and in October the following year  
he noted further details, indicating that the 'Basement' was  
to be of black with gold veins, and other elements were to be  
\*70 porphyry.\* It appears that this or a similar scheme was put  
into execution since the 1832 sale catalogue described the Hall  
\*71 as marbled.\* It is also probable that the scheme Soane pre-  
pared in the same year (1802) for an Entrance Hall for Robert  
Knight at 48 Grosvenor Square, London, was to be executed in  
marbling. His drawing shows a blue-grey marble on the walls,  
above a dark grey plinth or skirting; whilst the columns, which  
\*72 are of the Ionic order, are shown in a veined yellow.\*

At the same time Soane was at work on designs for the  
Breakfast Room at Pitzhanger in which marbling was also em-  
ployed. The design and colour scheme for this seem to have  
cost him a great deal of trouble, and several versions of  
sketches and more or less finished drawings survive. From  
these it is possible to see that the use of a dark plinth was



\*73 settled by May 1802,\* and by June the choice of jasper and  
yellow marble for the chimneypiece (both genuine, and the  
only part of the original colour scheme visible in the room  
\*74 today) had been made.\* In August Soane produced a working  
drawing\* which shows the room more or less as executed,  
\*Fig. 152 although he reverted to his earlier ideas in certain details;  
and this drawing is annotated with details of the colour  
scheme intended. The skirting is designated 'porphyry or  
black'; the ground of the flat areas of plaster wall either  
side of the doors, shown divided into panels and fretted, is  
keyed by the letter 'B' to a marginal note showing these were  
to be 'Dark blue and the fillet lighter'; the centre panel of  
this area is labelled 'red', and the attenuated panel between  
it and the doors 'yellow'; and finally a letter 'A' on the  
segmental area above the doors again relates to a note at the  
side showing it was intended this should be painted 'Dark brown'.

\*Fig. 151

A comparison of this design and colour schedule with  
Thomas Hardwick's record drawing of the room discovered in  
1777 near the Villa Negrone at Rome\* immediately reveals the  
likely source of Soane's colour scheme. Not only is the fret  
clearly derived from this or a similar example, but the choice  
of red, yellow, and blue seems more than coincidental; whilst  
Soane hung coloured drawings of the same decoration in his  
Breakfast Room at 13 Lincoln's Inn Fields (the yellow on which  
has now greatly faded).\* How far Soane was relying on his own  
\*75 knowledge of Rome and Italy, or depending on record drawings  
prepared by others is not clear; but investigation in connection  
with the present study has shown his scheme was certainly car-  
\*76 ried into execution in most significant respects.\* It is likely,  
however, that the choice of colours for the marbling either side  
of the door was modified to blue and green, although it was not  
possible at the time paint sampling was carried out to make  
the necessary careful arrangements for revealing a section of  
this in order to establish whether the fret proposed on the  
drawings was also modified, or even omitted. The examination  
of cross sections, however, did indicate that further elements  
were also marbled, including the blocks and piers against which  
the caryatides stand, and the mouldings surrounding the ceiling  
and its central oculus.

The following year (1803) Dance was at work on the designs for Stratton Park. The Hall of Communication, which acted as the means of access between the Staircase Hall and the Library (to whose Pompeian motifs reference has already been made) is shown on the drawings as having walls apparently of green marble, again presumably with the intention that they should be painted in imitation of that material. The plinth or skirting is grey, and the pilasters, which have no bases, yellow with grey and white veins.\*

\*77 Close parallels exist between the interior of the Hall of Communication at Stratton, in which, it has been suggested, may be found influences from the post-revolutionary neo-classicism of Paris, in particular its details based on Pompeian and Egyptian examples,\* and the

\*78 Breakfast Room at Pitzhanger Manor on which Soane was almost simultaneously at work. Their end elevations in particular share a common form, each having a central doorway flanked in the first case by pilasters, and in the second by caryatides supporting the ceiling. At Stratton this takes the form of a segmental barrel vault, whilst at Pitzhanger a shallow dome is used to cover a square room; but in each case the result is to give the end elevation a segmental head. Attention has been drawn to the constant use at Stratton of 'an element like the lid of a Roman sarcophagus - a flat "pediment" between two lugs or "acroters"', and this has been especially cited as a

\*79 prima facie example of French influence.\* The doorcase shown on the drawing of the Hall of Communication is clearly of this type, although of an elaborate form; whilst in his early perspective of the Pitzhanger Breakfast Room dated May 1802, which was not completely followed through in execution, Soane showed a much more straightforward doorcase, again of this type but

\*80 with a simpler pediment.\* The setting out of the door panels at the two buildings, moreover, shows a similarly close affinity. Altogether it is clear that Soane and Dance were working in close parallel, and, if French influence was also responsible for the choice of marbling as the finish in their respective rooms, it seems significant that Soane at least was relying on an ultimately classical source for his decorative scheme.

In 1808, George Smith published designs for Egyptian and 'Etruscan' style rooms, the latter based, he indicated, on an example at Herculaneum, advocating that in interiors of this

style the dado should be painted to imitate 'antique marble'; and in 1826 he again proposed a marbled dado and skirting in his room of 'Etruscan' style, which, it will be remembered, was based on a Pompeian precedent.\* In his 'Roman' room of the latter date too, the use of marbling on pilasters and dado was indicated;\* and, not to be out-done, in his publication of the following year Whittock provided a scheme for an 'Egyptian' room in which marbling played an important part.\* In this he made an appropriate choice of verde antico and porphyry, adding a new subtlety to his design since varieties of both had been obtained from that country. In 1823, Goldicutt too was directly influenced by examples of classical decoration in the use of marbling on the dado and general wall areas of the Pompeian room already mentioned which formed part of his scheme for King's College, Cambridge.\*

By 1828 marbling had clearly become so ubiquitously practised that Vanherman felt the need to strike a cautionary note, remarking that 'marble graining' was,

'only suitable for columns, pilasters, arches, dados, chimneypieces, and such parts where the appearance of solidity and coolness is desirable.\*'

Nevertheless, it is clear its use continued to remain a common element in decorative schemes, although whether the marbled effects shown in Blore's perspective of 1846-7 for the Queen's Private Entrance at Buckingham Palace, London, on skirting, dado, pilasters, and general wall surfaces were executed in imitation or in natural marble is not immediately apparent.\* In later years, of course, marbling became a natural target for John Ruskin and his followers, in particular the architect George Gilbert Scott (1811-78), who in 1857 devoted an entire chapter of his Remarks on Secular & Domestic Architecture to the 'Boundaries of Truth and Falsehood in Architecture'. His disapproving attitude provides another notable example of nineteenth-century thinking still acting to colour our outlook today; and having established the key moral question, which he believed was one of an intention to deceive, he proceeded to denounce:

'The whole system of marble-papers in halls, marble and granite painting on shop-fronts, &c., &c., [as] a sort of petty lying without wishing to be believed, - mere falsehood from habit, - the working out at the pores of the poison with which our entire system is saturated';

to which he added, with true Protestant fervour: 'Quid Romae faciam? Mentiri nescio'.\*

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### Bronzing

Hand in hand with contemporary enthusiasm for marbling during the closing years of the eighteenth century and opening years of the nineteenth went a fashion for 'bronzing', that is the painting of capitals, mouldings, and other decorative architectural elements to represent patinated bronze. The methods by which this was achieved have been described in the technical section on imitations in Chapter II above, the effect often being intensified by the use of bronze powder on the highlights. On furniture, however, it seems that real bronze may have found occasional use, left, in the words of the influential early nineteenth-century collector Thomas Hope (1769-1831) 'simply to exhibit its own green patina', an effect which, he continued, was cheaply produced.\*

\*88

### \*Fig. 144

Bronzing was used extensively at Carlton House, and may be seen in Pyne's illustrations. In the Hall\* it was used on the bases and capitals of the columns and pilasters, on the architectural ornaments, on the sculptures, and even on the doors themselves, which, Pyne mentioned, were painted in imitation of bronze inlaid with marble.\* In the Vestibule or Tribune, bronzing was used on the raised stucco ornaments,\* and in the Staircase on the statues and sculptured lamp holders.\* As already noted, the precise dating of this decoration presents a problem, and it is difficult also to separate French influence from the direct interpretation of classical remains. No doubt almost every visitor to Rome had seen the bronze doors listed by Palladio of,

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'the Rotunda, formerly the Pantheon; that of St. Adriano, formerly the temple of SATURN; that of St. Cosmo and St. Domiano, formerly the temple of CASTOR and POLLUX, or rather of ROMULUS and REMUS; and that of St. Agnas, now

called St. Agnese, without the gate Viminalis su la  
via Numentana.'

Students would also have been familiar with classical sculpture and ornament in this material, which Palladio described as 'often used by architects in making bases, columns, capitals, statues, and such-like ornaments.'\* At Pompeii too, wall-paintings were found which included representations of slender columns and architectural elements coloured in a green reminiscent of patinated bronze.\*

With the impetus given by such impeccable precedents, the use of bronzing became so widespread that it ousted the traditional blue from the ironwork of many staircase balustrades, although interestingly that at Carlton House was shown by Pyne as blue.\* In the Designs for Architects published by Ackermann the staircase balustrades were to be 'in bronze or in imitation of it',\* whilst at Stratton, although other drawings show blue ironwork,\* on one elevation of the screen at the head of the Staircase Dance showed the capitals and bases of the pinkish-red marble columns (eventually executed in scagliola imitating porphyry)\* together with the ironwork of the balustrade in a bronze-like green.\* In one version of Dance's drawing of a decade later for the Staircase at Ashburnham Place, Sussex (demolished 1959), the ironwork is green,\* although several other colours appear on alternative drawings;\* and on one of the sections forming part of Goldicutt's 1823 designs for King's College, Cambridge, the balustrade ironwork is indicated in a similar bronze-like green, the same colour appearing on other architectural ornaments.\*

Besides indicating a bronze colour on the capitals and bases in the Hall at Stratton, it is possible that Dance intended a similar effect in the frieze over the 'antique' bas relief panels above the bookcases in the Library, since he shows the ornament and its ground in a pale greenish grey on the drawings.\* A year or so later he seems to have considered the use of a bronze-like green on the attenuated columns supporting the galleries in the Theatre Royal at Bath (interior destroyed by fire in 1862),\* and further examples were to be found at Pitzhanger, where in 1802 Soane proposed the bronzing

\*104 +Fig.152 of ornaments in the Library, and the 1832 sale catalogue mentions the bronzed paterae and heads in the marbled Entrance Hall.\* In the Breakfast Room+ Soane recorded his intention that the Caryatides should be 'copper bro.' and the flying figures on the dome 'Silver bro:'.\* Investigation of the latter showed that this had been put into effect, using green and grey grounds with localised highlights of bronze and silver-coloured powder respectively; whilst the motif above the doors to the Library and the fret of the ceiling had also been bronzed green.\* Against the 'copper bro.', which was obviously of the conventional variety seen elsewhere, the 'Silver bro:' is of particular interest.

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The technique of bronzing remained a favourite with Soane throughout his working life. Green-coloured bas reliefs on a neutral ground appear, for example, in a perspective showing proposals for the Music Room at Taymouth Castle, Perthshire, on which he was at work in 1803;\* and a green overmantel and torchères in a perspective for the Drawing Room.\* Two years later, similar effects are found in a perspective for Lady Eliot's Sitting Room at Port Eliot, Cornwall, in which the dado-height bookcases, the figures (probably torchères) which they support, and the overmantel are shown in a bronze-like green.\* Later, Soane made extensive use of what is again presumably bronzing in his designs for the Houses of Parliament on which he was at work from 1820.\* Here, doors, torchères, and other ornaments are shown in green, an appropriately monumental use of the technique, and one perhaps closer to the Imperial splendours of ancient Rome than the more domestic situations with which this study is immediately concerned. Nevertheless, at Pellwall, Staffordshire, another commission of the 1820s, Soane indicated green ornaments on the white ceiling of the Eating Room, showing that the associations of its origin did not inhibit its use in less august situations.\* By this date too, and presumably for many years previously, the technique had been accepted into the repertoire of the decorative painter, and was used, for example, by Whittock in his 'Egyptian' room on the lions' heads and sphinxes which provided much of its essential character.\*

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\*Fig. 158

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\*Fig. 144

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In summing up its position in interior decoration at this time, the best analogy for the use of bronzing seems to be that of gilding, since it was generally applied to precisely those architectural elements which in previous years might have been embellished in gold. Looking again at the Entrance Hall at Carlton House\* and mentally substituting gilding for the 'patinated bronze' on the architectural ornament, it is possible to see, perhaps, an implication of the continued presence of a white architectural framework. This point emerges even more strongly in the case of the Tribune where, without this conceptual insight, the perspective may be 'mis-read' as showing dark ornament on a light ground.\* Bronzing was not, however, the only technique to obscure the earlier convention, and the practice of graining joinery contributed even more to the demise of the explicit white framework.

Graining

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Although as already mentioned it was the French workmen employed at Carlton House whom Crace credited with the re-introduction of graining to this country, it will be remembered that Chambers had made extensive use of the technique at Somerset House in 1780, all the doors being grained in imitation of mahogany. It also seems significant that in Pyne's description of Carlton House, apart from the Lower Vestibule and Golden Drawing Room, which formed part of the 'Lower Suite of Apartments' provided by Nash in 1814, the only room in which any mention is made of an effect which may be graining is the Crimson Drawing Room in which the doors and window shutters were, he said, painted black in imitation of ebony.\*

In approaching the topic, it is important to bear in mind that graining and the use of natural timber were regarded as more or less interchangeable throughout the period under discussion, and it is often difficult if not impossible to decide when a particular design drawing indicates the first rather than the second. No doubt many designs hopefully prepared with the finest cabinet timbers in mind saw realisation in softwood to which the necessary imitations were applied. It may be suggested, therefore, that the popular vogue for the use of graining on elements other than the traditional door, or on window shutters, came a few years later than its employment at Carlton House, and was intimately connected with the changes in attitude

towards the use of natural timber in design which took place in the early nineteenth century. The increasing use of oak, both for panelling and ceilings in houses of gothic or Elizabethan character, provides one particular instance of this; and another facet is revealed by advice given by the Reverend John Wyndham to his nephew William in connection with the erection of Dinton Park, Wiltshire, for which Jeffry Wyatt (later Sir Jeffry Wyatville, 1766-1840) was the architect. The interior was being fitted up in 1817, and in a note he suggested:

\*114 'Buy a Ship Load of Mahogany to make all y<sup>e</sup> Sashes & Doors, Architecture & Skirting Boards, Stair Case &c &c. &c. It may be a Considerable expence at first but it may be equal, As there will be no Paint Necessary.'\*

\*115 The change in outlook seems also to have owed something to France. Walpole, visiting Paris in 1765 remarked in a letter that he had seen but one idea in all the houses, 'the rooms are white and gold, or white'.\* This style of decoration, which had been used extensively by the Palladians, was by then almost completely superseded in England, but, it will be remembered, returned to favour at the end of the century and, combined with lavish use of fabrics, formed the basis of many of the interiors at Carlton House.\* Dealing with graining a few years later, in 1813, Thomas Martin observed in The Circle of the Mechanical Arts,

\*117 'at Paris, every species of wood-work used in their houses, as a part of the building, is done in this manner. The dead-white so much in vogue amongst us is not practised there.'\*

\*118 His comment appears to indicate clearly that the real popularity of graining in England may have developed only in the years after Waterloo, a suggestion which seems to be borne out by Whittock, who remarked that it was the great improvements made in the ten years before publication of his book in 1827 which had brought it into general use.\*



In looking at the historical precedents for the employment of graining in buildings, unlike marbling or bronzing it is not easy to point to classical examples known during the eighteenth or early nineteenth centuries. It is therefore likely, as suggested above, that French and late seventeenth-century English sources, coupled with growing contemporary interest in mediaeval, Tudor, and Jacobean interiors, with which brown wainscots would undoubtedly have been associated, were of primary importance. Thus, at Fonthill Abbey, designed by James Wyatt for William Beckford from 1796 (a building which stood incomplete at the architect's death in 1813), not only was an appropriately mediaeval effect achieved in many rooms by the use of ceilings constructed either in oak or grained in imitation of it, but the Oak Parlour was wainscoted with dark coloured oak, the Oak Library was wainscoted in the same material of a 'deep brown' shade, the Great Western Hall was lined to a height of eleven feet with oak panelling, and the Duchess's Dressing Room was 'wainscoted all over'.\* The same treatment was afforded to other corridors, passages, and galleries in the building, with their rib-vaulted and fretted ceilings, often embellished with brightly coloured heraldic devices.\* At Carlton House, in the aggressively detailed Gothic Dining Room, whose walls were lined with wainscot from which brackets extended across the ceiling to suggest a timber roof, Nash too used oak, here highly varnished and gilt;\* and again, at a slightly later date, Soane ranged wainscot along the walls in his designs for the Houses of Parliament.\*

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In both Jacobean and Palladian times, wainscot had not, of course, been invariably applied to the full height of the wall; and both William Kent's designs for Queen Caroline's Library at St. James's Palace and George Dance the elder's drawing for one of the rooms at the Mansion House, London, showing this treatment have already been illustrated.\* In these, the dark wainscot extends only to three-quarters of the wall elevation, leaving an area of wall and a white cornice or entablature above. The treatment of book-cases throughout the eighteenth century could, on occasion, be analogous, and Adam, for example, used mahogany for those of the Library at Croome Court, Worcestershire.\* A similar treatment is shown by Thomas Cundy (1765-1825) in a section for Brixton Lodge,

\*Figs. 52, 53

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Surrey (now London Borough of Lambeth), designed in 1803, in which brown book-cases are inserted either side of the chimney-breast, rising four-fifths of the room height and leaving a few inches of pale blue wall visible beneath a white cornice.\*

\*124 Ten years later, George Dance the younger provided a design for the Library at Ashburnham Place in which book-shelves, possibly re-used from elsewhere,\* are set in advance of the main wall plane, and rise just less than two-thirds of its height. These are elaborately veined on the drawing as if to indicate the use of cross-banded satin wood, and the wall above is

\*125 thrown back with a dark grey wash.\* This is precisely paralleled by another design, unfortunately undated, for a library for T.J. Heathcote in St. James's Square in which the wall above the presses is dark red and the entablature white;\* whilst Goldicutt indicated a similar layout in a design for an unidentified public building.\*

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\*127

\*Fig. 156

Of course, in none of these instances is it clear whether the joinery of the book-cases was to be in a fine cabinet timber, or whether it was intended that it should be grained in imitation of one or more of these. This is not in any case of great moment, since, as already pointed out, the two could be regarded as more or less interchangeable depending on financial circumstances. What is important, however, is the analogy which existed between such designs and partially wainscoted rooms; the panelling of which, standing in advance of the plaster wall, allowed only its upper part and the white entablature to be seen, leaving the white architectural framework of the lower section of the wall as implied only. Perhaps the clearest illustration of this is provided by the design by William Evans of 1819 for Quedgeley House reproduced above,\* in which the way the dark book-cases stand in front of the white dado and skirting makes the concept explicit. From such an instance it may be seen how small a step it was to incorporate the door and its architrave into the 'wainscot', especially at a time when the tradition of a dark door would have been well remembered; and it seems likely that it was the London upholsterer Thomas Ward who did precisely this when the Library at Nostell Priory was redecorated, probably in the 1820s.\* Not only were Adam's white and green book-cases grained, but also the dado, skirting, door architraves and friezes, and chimneypiece. All

\*Fig. 147

\*128

\*Fig. 153

this survives today, leaving a short height of wall and the entablature above.\* The parallel with the almost standard colour scheme of much ordinary nineteenth-century housing needs no emphasis, and it is possible to see in this albeit noble room the grained skirting, doors, architraves, and windows, the coloured plaster wall, and the white cornice and ceiling which typified the villas and terraces of London and many provincial cities for many decades to come.

\*129 The date at which such a scheme first made its appearance fully fledged is unclear, although much of it may be seen in the undated design for the octagonal room by Dance for T.J. Heathcote in St. James's Square, the Pompeian motifs of which  
\*130 have already been mentioned.\* By the time Soane was at work on Pellwall House, however, it was completely developed and may be seen in the Eating Room, Drawing Room, Lady's Morning Room and Lady's Dressing Room;\* whilst at Corehouse Blore shows its use in a full-blown 'Jacobean' interior.\* A similar treatment in more ordinary domestic interiors may be seen in a number of watercolours dating from the first half of the nineteenth  
\*131 century,\* including that of the Drawing Room at Meesdenbury, Hertfordshire, of about 1840;\* and Soane even seems to have employed matchboarding or graining in at least two instances on  
\*132 ceilings.\* The interchangeability of graining and natural hardwood has been stressed and the varieties imitated at this period described in Chapter II, but it seems likely the technique of imitation had become the more commonplace by the 1820s. Whittock, as already mentioned, referred to its growing importance in the decade prior to publishing his book of 1827, adding:

\*Fig. 145

\*Fig. 165

\*133 'There are few respectable houses erected where the talent of the decorative painter is not called into action, in graining doors, shutters, wainscots, &c.'\*

\*134 Although Vanherman remarked in 1828 that, whilst graining had formed a considerable part of the decorative system for some years, on account of its cost and short life it was then giving way to the plain and simple,\* this seems to have been more an expression of his own attitude to the technique than an accurate reflection of contemporary practice, since in 1833 Loudon wrote enthusiastically of it, suggesting its employment in cottages,

\*135 'not with a view of having the imitation mistaken for the original, but rather to create allusion to it, and, by a diversity of lines and shades, to produce a kind of variety and intricacy, which affords more pleasure to the eye than a flat shade of colour'.\*

\*136 In the 1834 edition of The Builder's and Workman's New Director, moreover, Peter Nicholson remarked on the late 'increased demand for this species of decorations';\* and, from the vehemence with which graining was denounced by Ruskin, Scott and others, it clearly had a long life which passed beyond the terminal years of the present survey.

Abstraction of  
colour from  
motifs

Two of the four suggested effects of increasing archaeological knowledge on attitudes towards the use of colour in buildings have now been examined, and the way in which both coloured stylistic motifs and techniques for the execution of finishes found in their historical context were utilised have been explored. The third facet of contemporary development put forward for consideration was the abstraction of colour from historical motifs in a continuing search for authenticity and its application as a major element in the colour scheme. This phase seems to have been of limited expression, and is indeed a comparatively naïve idea, much more in character with the eighteenth century than with the increasing scholarship of the early nineteenth.

\*137 It was but a small step from the thoughts of Lady Caroline Fox, who in 1759 had her Dressing Room painted pea green, matching some china,\* to the exciting novelties in the ancient specimens of 'Etruscan' pottery which were coming to light; and, as has been shown, the Adam brothers were not slow to exploit their knowledge of these. In 1779, it will be remembered, they publicised a number of their 'Etruscan' designs, disclosing that their style of ornament and colouring was 'imitated from the Vases and Urns of the Etruscans' and buttressing their academic respectability by citing an impressive list of published authorities including Montfaucon and Caylus.\*

\*138 Although, as already indicated, perhaps to cover their immediate line of retreat, they emphasised at the same time that no actual antique examples of the style of interior decoration had so far been discovered,

\*139 James Adam had visited Pompeii in the early 1760s\* and a certain amount was undoubtedly already known about truly authentic classical decoration, which, backed up with fresh discoveries, in due course rendered the Adam analogy with ceramics obsolete. Perhaps sensing this development, having visited Osterley in 1778, three years after completion of its Etruscan Room, Walpole commented that to enter it was to go 'out of a palace into a potter's field', an apposite, if cynically accurate, remark.\*

\*140

Nevertheless, the taste for 'Etruscan' colour remained deeply rooted, and by the end of the eighteenth century had become an integral part of the house-painting palette. In the 1790s Sir Uvedale Price observed that brownish 'autumnal hues' were proper to the Picturesque, a third character he had added to the duo of the Sublime and the Beautiful propounded by Burke;\* and the author of the Designs for Architects published by Ackermann was similarly seized with enthusiasm, exclaiming:

\*141

'How striking and picturesque might the Etruscan colouring properly disposed, be made to the lovers of the antique!'

\*142

By this stage, therefore, 'Etruscan' colour had been abstracted from the motif which originally gave it its name, and in 1803 Dance proposed the use of such browns and yellows on the doors in the Library at Stratton, combined with the bronzing and antique motifs on other elements which have already been mentioned.\* Altogether, these were undoubtedly seen as providing a suitable ambience in a room dedicated to academic pursuits, a point which will be picked up in due course below.

\*143

About the same time that Dance was at work on the Stratton Library, the wealthy collector Thomas Hope, who set out to develop English taste in furniture and decoration, was faced with the problem of devising a colour scheme for his Drawing Room in Duchess Street, London (demolished 1849), in which paintings of India by Daniell were to be displayed. He had accordingly settled on the 'Saracenic Style', with a ceiling imitated 'from those prevailing in Turkish palaces', adding in his description of the room published in 1807 in his Household

Furniture and Interior Decoration that 'the colours of this room, in compliance with the oriental taste, are everywhere very vivid, and very strongly contrasted'. The sofa was upholstered in deep crimson, and there were Persian carpets on the floor, whilst the tint of the walls was 'sky blue; and that of the ceiling pale yellow, intermixed with azure and with sea green'.\* It is therefore tempting to see an association with oriental ceramics in the colours of the wall and ceilings, especially since Hope had travelled in the Near East, living in Constantinople for nearly twelve months,\* and would undoubtedly have been familiar with the brilliant blues, greens, and yellows of Islamic tile decoration in mosques and other buildings. It would have appeared an obvious precedent, and, in the absence of any other, seems clearly reflected in his choice for the room. To complete the scheme, he added, these colours were relieved and harmonised by ornaments in various shades of gold.

Another unstated abstraction of colour from a stylistic motif may perhaps be detected at Eaton Hall; designed by Porden for the second Earl of Grosvenor. As already mentioned, the interiors were of gothic style, but conceived in eighteenth-century terms, with the standard white architectural frame and dark doors. J. and J.C. Buckler prepared watercolours\* in preparation for the publication in 1826 of their Views of Eaton Hall, and these indicate the majority of the major reception rooms had walls red in colour above the dado. In general terms, choice of such a colour would not excite comment, and the Drawing Room seems perfectly conventional in its treatment with hangings of crimson velvet.\* For some reason, however, and apparently much against Porden's will,\* the Saloon walls were finished in blue, the shade of which seems to have been of a most unusual character but matched the heraldic tincture of the ceiling armorials. Furthermore, the Bucklers described the brilliant red walls of the Dining Room\* as 'scarlet', another colour of surprising aspect on so large a surface, but again to be found in the emblazonry with which the ceilings were embellished.\* In the Library too, their watercolour shows walls of a similar hue. Although the suggestion that these stunning finishes were 'lifted' from such mediaeval motifs is, of course, speculative, there must be some explanation for their unusual

\*Fig. 146

choice, especially since this was one which would have led to considerable expense; and an heraldic origin does seem to be an entirely satisfactory and not unlikely solution.

The search for  
authentic  
house-painting  
colour

\*Fig. 146

This use of colour by Lord Grosvenor and his architect was in all probability, therefore, an attempt to improve on those which had been used in earlier exercises evidencing an interest in the revival of the gothic or old English styles. William Ivory's white on the Staircase at Blickling Hall and James Wyatt's use of a pale blue in the panels of the vault at Milton Abbey Church have already been described, and it is interesting to note that a similar tint was used to pick the 'fan vault' of the Dining Room\* and central part of the Saloon ceiling at Eaton which dated from the time of Charles II and was surrounded by Porden with a plaster 'vault'.

Evidence of contemporary dissatisfaction with such neo-classical colouring in interiors of gothic or old English style, however, is provided by John Rutter in his Delineations of Fonthill published in 1823. In describing the Southern Entrance Hall he commented:

'The walls and ceiling have been jointed to represent stone, but part of the former have been injudiciously coloured pink',

A 'very faint pink' had also been used for the grounds between the stone-coloured mouldings of the ceiling in the Vaulted Library, and came in for censure again in the Oak Parlour. Its general effect Rutter considered unpleasing,

'from a deficiency of harmony between the cold pink ground and pale yellow mouldings of the ceiling, compared with the warm and rich colour of the wainscoting of the walls'.\*

\*150

It is clearly implicit in these criticisms that neo-classical tints of this nature were now seen as inappropriate in such a context, and it seems likely there would have existed a general preference for those interiors at Fonthill in which oak and stone colour plasterwork were employed to give a more academic-

ally correct appearance. Thus, as already noted, Nash employed oak in the Gothic Dining Room at Carlton House, no doubt because he regarded it as the authentic material for the style, to which it would therefore offer a colour which was unquestionably appropriate.

This search for authenticity of colour is found too in another room in Thomas Hope's house in Duchess Street. The prevailing colours of the walls, ceiling, and furniture in the room containing his Egyptian antiquities\* were, he indicated,

\*Fig. 154

. \*151 'that pale yellow and that bluish green which hold so conspicuous a rank among the Egyptian pigments'.\*

\*152 The bluish green pigment to which he referred was undoubtedly the so-called 'Egyptian frit' whose manufacture was described by Vitruvius and mentioned by Pliny, but became obsolete during the dark ages.\* During the early nineteenth century considerable attention was focused on the pigments used in classical antiquity, and in 1809 the French chemist J.A.C. Chaptal, who was active in the field of chemistry and its application to arts and manufactures, published the results of his investigations of specimens which had been discovered in the remains of a colour shop at Pompeii.\*

\*153 A few years later, Sir Humphrey Davy carried out a similar analysis of those which had been found in the Baths of Titus in Rome, together with other samples taken from paintings in this building, the 'Baths of Livia', and from examples at Pompeii. He published the results in the Philosophical Transactions in 1815 under the title 'Some experiments and observations on the colours used in painting by the Ancients', and from this article it is possible to see that his interest was not merely theoretical. Having briefly reviewed the information given by Vitruvius and Pliny, he described experiments he had carried out in the manufacture of Egyptian frit on the lines indicated by the former, which, he confirmed, produced a pigment of exactly the same tint as that possessed by one of the specimens from Rome. He was thus able to demonstrate the authentic character of the colour exhibited by these, and concluded his observations with a discussion on the relative permanence of modern pigments in comparison with those of antiquity.\*

\*154 A few years later, in 1837, the Elgin marbles received



similar attention from Dr. Michael Faraday of the Royal Institution at the behest of a Committee appointed by the Royal Institute of British Architects 'in order to ascertain whether any evidences remain as to the employment of colour in the decoration of the architecture or sculpture'; but although the results of his examination were in this instance rather negative, a few weeks earlier the examination of specimens removed by Mr. Donaldson from the Propyleum and Theseum at Athens had allowed Faraday to identify a copper carbonate pigment and a blue frit.\*

\*155

Science was, therefore, beginning to provide an important complement to the records of colour prepared by the archaeological draughtsman, although to the architect the productions of the latter undoubtedly remained of primary importance in design. Goldicutt, publishing his Specimens in 1825, was at pains to emphasise that the plates were 'with little exception, a perfect imitation of the original, both in form and colour';\* but, although his acquaintance with Pompeii dated only from about 1815-19, his aim in these respects had no doubt been shared by many visitors who preceded him in the preparation of their own personal records. At Pompeii, although quite large areas of green, blue, and grey were used in the grounds of many wall-paintings, the prevailing colour which struck the traveller immediately on entering the ruins would have been that of the yellow and red earth pigments which form such a prominent part of the view of the 'Casa del Posta' by Roos.\* It was natural, therefore, that these above all should be remembered; and, whilst the first became identified with the 'Etruscan yellow' of Adam, reds of 'Pompeian' type soon established themselves in the house-painting palette. From its occurrence on large areas of wall in antiquity it could quite legitimately claim classical precedent as a house-painting colour, and was used in several schemes by Dance. In the Library which he designed for Lansdowne House in 1786 he showed one version of the fireplace set on grounds of dark red and brown,\* whilst the dark red above the book-cases in his Library for T.J. Heathcote in St. James's Square has been mentioned.\* In the octagonal room in the latter building, tones of dull red on the walls, and brown on the joinery (the latter, of course, probably either grained or executed in hardwood) are combined with Pompeian motifs on a

\*156

\*Fig. 157

\*157

\*Fig. 156

\*158 blue ground in the panels above the cornice.\* Soane had  
painted the walls of his Library and contiguous Dining Room  
in Lincoln's Inn Fields a 'deep red colour, in imitation of  
\*159 the walls at Herculaneum and Pompeii' by 1827,\* and seems  
also to have used it in the Eating Room at Pellwall, his 1828  
\*160 perspective showing the walls coloured a dark red.\* This is  
unlikely to have been damask in a room of this purpose, and is  
therefore presumably paint or a plain paper. A final example  
is provided by Vanherman, who included in his list of 'the  
most approved tints now in use' a dark red 'blotting paper'  
colour of surely Pompeian inspiration, which was designed for  
\*161 use in a picture gallery.\*

Quite apart from the implications of a growing degree of historical scholarship, the increasing study of natural philosophy at a time when the arts, sciences, and manufactures were conceived as closely inter-related, brought about a major change in attitudes to the choice of colour in buildings. The intention of this section is therefore to describe the novel nature of those ideas current from the late eighteenth century onwards which culminated just beyond the terminal date of the present study in mid-nineteenth-century colour theory, whose implications are so fundamental to our attitudes today, and to attempt an appraisal of the effect the development of these may have had on house-painting.

Science in the seventeenth century was greatly concerned with the nature of light and the investigation of its phenomena. Francesco Grimaldi, Professor of Mathematics at the University of Bologna, carried out experiments on diffraction (the phenomenon responsible for the colour seen in peacock's tails and other bird plumage) which were published posthumously in 1665; and, in the same year, from his observations of the colours which could be seen in thin layers (such as that of an oil film floating on water) Robert Hooke attempted an explanation of the nature of colour. Most importantly, Sir Isaac Newton, who had bought a prism in 1666 knowing of its widely celebrated chromatic properties, carried out experiments on these; and, in a paper published in 1672, proved that white light was a mixture of lights of different hues. These he identified as red, orange, yellow, green, blue, indigo, and violet, the total of seven providing an analogy with the musical scale and its cycle of octaves.\*

\*162

Other observations had been made by Robert Boyle, a fellow-member of the Royal Society, who in 1664 had published his Experiments and Considerations Touching Colours. This contained, besides a review of earlier literature on the subject, a summary of experimental data, including a note on the phenomenon of the coloured after-image which was later to form a key element in early nineteenth-century colour theory. He described too experiments on the mixing of white, black, blue, yellow, and red pigments, illustrating a practical knowledge of the three subtractive primaries, and proceeded to show that when

\*163 yellow and blue pigments were combined to make a mixture which appears green to the eye, it could be seen under the microscope that the individual pigment particles had nevertheless retained their original colours and identities.\*

\*164 The mixing of the three primaries in this way to form secondary colours was also described about 1730 by J.C. Le Blon;\* and later in the century Moses Harris published The Natural System of Colours, dedicated to Sir Joshua Reynolds, a book whose date of publication has been put at 1766, and which is believed to contain the 'first known presentation of a color circle in full hue'.\* In his brief text Harris described how the three primaries and three secondaries might be arranged in a circle. He then added two intermediate gradations between each, thus bringing the total number of colours up to eighteen, and illustrated these in his circle of 'Prismatic' colours:

... red, orange-red, red-orange, orange, yellow-orange, orange-yellow, yellow, green-yellow, yellow-green, green, blue-green, green-blue, blue, purple-blue, blue-purple, purple, red-purple, purple-red, red, ...

He drew attention to the phenomenon of the complementary colour of the after-image, and pointed out that his colour circle presented an immediate way in which this 'contrasting' colour could be found.

It is notable, however, that in his book Harris did not develop the practical uses to which this information might be applied, although, as already noted, the idea that the spectral hues of the rainbow could provide a guide to the ordering of colours in architectural design was expressed by Gerbier in the mid-seventeenth century and would not have been new. It seems, therefore, that it may have been left to the German philosopher Johann Wolfgang Goethe to realise this step, and in his Zur Farbenlehre... Nebst einem Hefte mit sechzehn Kupfertafeln published in Tübingen in 1810, having described the phenomenon of the coloured after-image, he developed the idea that the eye sought a colourless space next to every hue in order to produce the complementary colour upon it, adding:

\*166 'Simple, therefore, as these strictly harmonious contrasts are... we have a natural phenomenon immediately applicable to aesthetic purposes.'\*

\*167 Although this book was not translated into English until 1820, and the manuscript Charles Eastlake then prepared was not published until 1840,\* Goethe's ideas seem to have been in the air in English art circles at least by the early 1800s. In 1791 he had published Beiträge zur Optik containing an account of experiments he had undertaken with prisms,\* and although he still had to develop these over the next two decades before publication of his complete theory, at least two important aspects of this as it was eventually to appear are contained in An Essay on Light and Shade on Colour by M. Gartside, which appeared in 1805. Gartside's main concern was with flower painting, but following general advice 'On Light and Shadow' in such compositions she moved on to discuss 'Colours and their arrangement in Groups'. Having noted the three primaries, she put forward three classes of colour: warm (those tending to red and yellow); cold (those tending to black and blue); and light (those tending to white). The need for balancing warm and cold tints in a painting is then indicated, followed by a consideration of 'harmonising tints' which correspond closely with Goethe's

\*168 'characterless combinations' discussed below.\* Other aspects of her book reflect the underlying attitudes of Goethe, to whom, therefore, more detailed attention must now be turned.

\*170 The trials Goethe carried out with prisms led him to see Newton's spectrum in an alternative way, edited and re-ordered thus: blue, violet, red, orange, yellow.\* He also concluded that blue, appearing next to darkness brought this principle (or character) with it whilst yellow, conversely, was associated with light.\*

\*171 Certain other trials convinced him that yellow could be 'intensified' to red, in the way that, for example, as a yellow liquid increases in depth it may appear to become a progressively deeper orange in tone; and it is possible to see a similar tendency towards purple in increasing depths of blue liquid.\*

\*172 This intensification of colour was matched, Goethe believed, by intensification of feeling, so that, he concluded, red possessed the 'highest of all appearances of colour'.\*

\*173 Goethe was led, therefore, to recognise only two primaries,

\*174 yellow and blue (although he conceded that to the painter red behaved as a primary),\* and saw colours as falling either side of a central axis:

<u>Plus</u>	<u>Minus</u>
yellow	blue
effect	deprivation
light	shadow
brightness	darkness
force	weakness
warmth	coldness
proximity	distance
repulsion	attraction
affinity with acids	affinity with alkalis

\*175 If these contrasting qualities were combined, they reacted not to destroy each other, but to produce a union of distinct character, which we called 'green'.\* In his recent commentary on Goethe's colour theory, Rupprecht Matthaei has summed up the effect of these ideas in diagrammatic form thus:\*

		<u>strong</u>	
		RED	
		highest of all colour manifestations	
		ideal satisfaction	
	seriousness/dignity		grace/charm
	( <u>warm</u>		<u>dark</u> )
	( YELLOW-RED		BLUE-RED )
	( vigorous		turbulent )
passive	( convulsive		unbearable )
turbulent	( RED-YELLOW		RED-BLUE )
soft	( splendid		lively, without )
longing	( agreeable		gaiety )
	( gently stimulating		shadowy )
	( cheerful, alert		wide-open )
	( YELLOW		BLUE )
	( <u>light</u>		<u>cold</u> )
		real satisfaction	
		simplicity	
		GREEN	
		<u>weak</u>	

As already noted, the phenomenon of the coloured after-image led Goethe to believe the eye sought to produce its complementary colour adjacent to every hue. He defined these as strictly harmonic contrasts, discussing also the less satisfactory characteristic combinations which occurred when any two of the three primaries, or yellow-red and blue-red were opposed, and the

characterless combinations of a primary and secondary adjacent on the colour circle, which formed the 'harmonising tints' of Gartside's Essay. To these could be added the possibility of variation by opposing two dark colours, or two light colours, or placing a light colour against a dark one, another idea exploited by Gartside and developed later by others.\*

\*177

Subsequently in his book of 1810, Goethe drew attention to the symbolic applications of colour, its allegorical applications, and its capacity for mystical allusion.\* This overlay of subjective association is far removed from the elegant and purely scientific experimentation of Newton, compared with which, in fact, Goethe's trials using the prism may be seen as blunderings into semi-obscurity. Nevertheless, the ramifications of his philosophy are still with us today, and had considerable influence during the nineteenth century, since it seemed to offer convincing explanations for such matters as the awe surrounding regal purple, or the repose natural to the green of the countryside. His obfuscation of the scientific issues seems, however, to have been clearly recognised by the colour-maker George Field, whose first book, Chromatics: or, An Essay on the Analogy and Harmony of Colours, was published in 1817. In this, he revealed a much more scientific attitude towards colour mixing, realising that the pigments available were physically far from perfect as primaries, and remarked rather pointedly that the successors of Le Blon and Harris had added nothing of importance to knowledge of the subject.\* He considered that just as in a piece of music there was a principal tone or key,

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\*179

\*180

'so also in every harmonic composition of colours there is a principal tone or predominant colour, to which its other hues refer subordinately.'\*

From this he was led to postulate the general rule:

\*181

'There can be no perfect harmony of colours in which either of the three primaries... is wanted; and... the distinctions of harmony depend on a predominance of one, and a subordination of the other two in the composition.'\*

\*182 In his system, besides the primaries and secondaries, Field made use of the tertiaries, which had been used by Harris in his second circle of 'compound colours'.\* These were made by the mixture of any two of the three secondary colours, and possessed a predominance of the primary which lay between them on the colour circle. Thus olive was mixed from purple and green, and its predominant colour was blue; citrine was made from green and orange, and in it yellow predominated; and russet was made up of purple and orange, producing a predominance of red.\*

\*183

Although in 1827, as will be shown, Whittock referred explicitly to these ideas and developed their use in decoration, the first book in which such approaches to the formal achievement of colour harmony were systematically applied to house-painting was not published until the following year, 1828, when D.R. Hay brought out The Laws of Harmonious Colouring adapted to House Painting. In the Introduction which he added to the second edition of a year later, having drawn attention to the generally prevailing belief that the arrangement of colours was a mere matter of taste, Hay, who described himself as an Edinburgh house-painter, stated his own conviction that the key to harmonious combination lay in the laws of optics. In adapting these to house-painting, however, he realised that some individuals would be fond of the brilliant and gay, and others the soft, delicate, and subdued (although none, he believed, would care for harshness or feeble monotony); and he accordingly developed a discussion, to be dealt with later in this chapter, on the uses of colour to assist the character of a room.\*

\*184

Hay began his description of the 'Laws of Harmony' by drawing attention to the green after-image of a red spot, and observed that the intensity of a colour was therefore increased by juxtaposition with its contrasting or 'accidental' tint. The direct union of the two opposites in this way, however, was harsh and unpleasant, and a third, or harmonising, colour was required to 'make the full concord', an idea already noted in Gartside's Essay a quarter of a century earlier. These harmonising colours, he indicated, were the original 'diluted with the colour in the next weakest degree of lightness', so that



orange would form the harmonising tint to yellow, red to orange, and so on, the progression from light to dark clearly following the order put forward by Goethe. To these, however, it was necessary to add a fourth 'neutralising' colour, possessing the properties of both the contrasting colour and the harmonising colour. This, he added, was the most difficult part, but went into frustratingly little detail to show how it was determined.\*

In drawing up a colour scheme, Hay set out the main considerations as 'tint', 'tone', 'depth', 'quantity', and 'situation'.\* He had earlier remarked, moreover, that as house-painters' colours were seen in full light it was necessary that they should be 'toned' to prevent an unpleasant crudeness,\* explaining elsewhere that clear colours occasioned a painful sensation by filling all the internal part of the eye with light.\* These two observations reveal the way in which the new attitudes to colour harmony had modified the eighteenth-century enthusiasm for the clean and unsullied tints considered beautiful by Burke; although another aspect of his thinking may still be detected, perhaps, behind Hay's remark that vivid and intense colours should always be,

'used with a sparing hand, and only employed to heighten the effect of splendour and richness by their contrasting and attractive qualities.'\*

Following these general observations on the principles of sound practice, Hay provided a summary of the properties of each colour and the way it could be used in practice.\* For example, in the case of yellow, which was the colour next to white in terms of brightness, its contrasting colour was purple in its 'deepest degree', and its harmonising tints orange and yellowish green. Full yellow, which he described as the colour of jasmine, should, he said, only be used to heighten other colours; whilst the cleanest yellow was of a lemon colour, which should never be allowed to predominate.\* Similar advice was given about the other primaries and secondaries in turn, establishing at the very end of the period which is the subject of this study a coherent theoretical framework specifically for the use of colour in interior decoration, apparently for the

first time. Later, in the 1840s, Hay elaborated his theories considerably, attempting to give numerical values to colour, bringing in the tertiaries, and suggesting the need not merely for a balance of colour, but for a balance of brightness and tone, so that a bright tint of rose pink, for example, should be balanced by a dark shade of dull green, or a pale dull orange by a bright but dark blue.\*

\*192

Although these complications fall beyond the immediate terms of reference of the present study, they are nevertheless important in indicating the way in which preoccupations with colour during the first half of the nineteenth century were developing. Also of extreme significance is the list of defects to be guarded against which Hay discussed in his earlier publication. The first and most obvious was when no particular colour was chosen as the basis for the design, an omission likely, he indicated, to produce an incongruous mixture and lack of unity between paintwork and furniture. In the second place, a common fault was the predominance of a bright or intense colour on large areas such as the walls or floor, overpowering the furniture. A third error lay in the use of pale and deep colours of unbalanced strength, and a fourth in the want of any harmonising tint. Lastly, it was important to avoid monotony, for, he said, 'some are so afraid of committing errors in point of Harmony, that neutral tints alone are introduced'.\*

\*193

Colour theory  
in practice

Having completed this brief summary of the development of colour theory up to the first published suggestion for the way in which it might be employed in a comprehensive way to buildings, it is necessary to attempt an assessment of the effect such ideas had had on house-painting practice by the 1830s. In fact there is little direct evidence for this in the years before the mid-1820s, and the majority of architects and house-painters alike no doubt shared the,

'dread of, nay, a decided aversion for all theoretical views respecting colour and everything belonging to it... hitherto found to exist among painters; a prejudice for which, after all, they were not to be blamed; for what has been hitherto called theory was groundless, vacillat-

In view of this, an element of coincidence cannot be ruled out in examining those drawings prepared during the opening years of the nineteenth century which do appear to reflect contemporary pronouncements in the matter of colour harmony, a situation paralleled, perhaps, in many of the attempts made to prove that this or that proportional system had been applied in the construction of any particular building or monument. Nevertheless, a number of such instances seem convincing as evidence, and it appears that two implications arising from possession of this new concept of colour harmony were of prime importance in the effects they had on design. These were the linking of paint colour to that of the furnishing fabrics in a consciously careful way, and the modification which theory caused to the traditional white architectural framework.

Direct application  
of colour theory

In the section on marbling above, Soane's intended use of the three primary colours, red, yellow, and blue, in his Breakfast Room at Pitzhanger Manor was described, and attention was drawn to a possible classical precedent. On the other hand, it is possible there may have been a second, theoretical consideration involved, since pale tints of the same three primaries appear on the walls of two designs for Lady Eliot's Sitting Room at Port Eliot, Cornwall, on which Soane was at work in 1805.\* In the latter, the general context is provided by the standard white architectural frame, and the wall space between the dado and entablature is occupied by an arrangement of yellow panels within a blue frame on a pink ground.\*

\*195

\*Fig. 158

Whether these wall areas were to be realised in paint or fabric is not clear, but use of these diluted primaries in a context very different from his own Breakfast Room suggests that Soane may have been playing quite deliberately with this very basic aspect of developing colour theory. Moreover, precisely comparable colours appear a few years later in one of his designs of 1808 for the Dining Room at Taymouth Castle, Perthshire,\* in this case disposed between walls, joinery, and curtains, the dado being yellow, the walls pink, and the curtains blue.

\*Fig. 160

In the light of subsequent developments in colour theory, however, such schemes later appeared quite unsatisfactory.

Informed most probably by Field's discussion of the subject, Whittock observed that the eye was offended to see walls of light red bordered by blue or yellow, although, he averred, it would see with satisfaction a similar combination where the red had been subdued to a light salmon by the addition of yellow and white.\* Such a combination may be noted in the designs of 1814 for the Wellington Club in Liverpool by Thomas Rickman (1776-1841), an architect better known for his ecclesiastical buildings and his studies of mediaeval architecture. In the Ball Room, blue and orange are shown juxtaposed, the former on the walls between dado and entablature, the latter on the pilasters and dado;\* whilst in another room a general brownish orange on the walls is complemented by panels of pale blue in the shallow domes covering each compartment.\* Pyne's description of the Blue Velvet Room at Carlton House\* and its associated Closet indicates a similar scheme in which joinery of a 'light peach-blossom' colour formed the setting for the panels of dark blue velvet on the walls.\* Of course, in neither instance is it clear whether the choice of colour resulted from the direct application of theory; but, it seems significant that Goethe noted 'peach blossom' as a prismatic colour in 1791,\* and, as already indicated, theory was certainly the basis for Whittock's parallel advice a few years later.

In his book, Whittock followed up his preliminary observations by giving a list of combinations he considered suitable for sample boards on which the apprentice house-decorator could display his accomplishment. The majority of these involved the use of complementaries such as a 'light plum colour' with a 'white or straw colour' border, a 'light delicate green' with a border of a 'delicate pink', a 'dark red' with a 'warm green', and a 'light grey' of mauvish cast with a 'straw colour' border.\* The first two of these combinations, all of which Goethe would have described as strictly harmonic contrasts, appear also amongst those suggested by Vanherman a year later in 1828 for picking out the mouldings of panels, cornices, and other architectural elements, here appearing as 'light plum colour' with 'light yellowish buff', and 'light green' with 'light pink'. In addition, however, both authorities offered a number of other suggestions, which, apart from those employ-

ing orange and green (reflecting Goethe's category of characteristic combinations), are more peripherally related to strict colour theory, suggesting, perhaps, that even by  
\*201 this date its complete application was not inevitable.\*

It will be remembered that part of colour theory, especially in its later development, called for the juxtaposition of shades and tints; and it is possible that Roos had this in mind in the undated design to which reference has already been made in connection with the clouded ceiling in its  
\*202 central rectangle.\* Surrounding this painted sky is an arrangement of octagonal coffers with small square panels between them. The grounds of these and the outer margins of the octagons are shown in a tint of beige or warm brown (in other words a pale orange shaded with black), whilst the inner grounds of the coffers are picked in with a pale blue matching that in the central clouded rectangle. A similar combination appears in his design for a ceiling in the Pompeian style dated 1836, together with small elements rendered in green, red, and darker blue, the first two perhaps intended as 'harmonising' and  
\*203 'neutralising' tints.\* Another drawing, however, also thought to be a design,\* provides the most tempting example of this; and it is possible to suggest that the blue ground of the central panel, giving the 'key', is contrasted with the complementary orange of its surrounding frame, this in turn being harmonised by the red ('the colour in the next weakest degree of lightness') of the central octagon, which is itself neutralised by the pale green of the outer frame. A glance at any of these designs, however, will show how easy it is to read such rationalisations into coloured drawings; but nevertheless, the evidence of these schemes by Roos, taken together with the positive and unequivocal suggestions made by Whittock, Hay, and Vanherman in the late 1820s, suggests strongly that by the 1830s colour theory was indeed being widely applied in design.

\*Fig. 159

Paint and  
upholstery

The effect that an abstract system of colour harmony had in the linking of paint and upholstery is particularly significant. Although such neo-classical architects as Adam and Wyatt had set their bright points of arabesque and inset panels of painting within what they saw as the naturally appropriate context of 'Beautiful' colours, an earlier, more positive, idea

that certain colours could act to enhance and highlight others will also be remembered. The use of dull, cheap paint colours as a background against which fine and expensive paintings or furnishings would be set off to advantage has, in particular, been mentioned; and it was no doubt with a similar idea in mind that the author of the Designs for Architects praised the 'Etruscan' colouring for its effect in adding to the brilliance of the draperies.\*

\*204

\*Fig. 158

Soane's design for Lady Eliot's Sitting Room\* reveals careful integration of the blue curtains and upholstery of the chairs and sofas with the blue framing the panels of the wall, which, as already suggested, may themselves have been of fabric. It is clear that the concept of integration in this way within a colour scheme embracing the three primaries was in his mind, even if this was not one strictly harmonious according to developed theory; whilst at Taymouth Castle, an alternative scheme for the Dining Room\* shows the colour of the wall and curtains reversed from the arrangement already illustrated,\* the curtains now being pink and the walls blue. That colour could be seen as capable of transposition between paint and fabric in this way argues again that these were seen as related within an abstract concept rather than, as in previous years, a quality related directly to cost and technological means. This change of attitude marks an essential step on the road to a universally applicable harmonic system, and, once accomplished, demanded the increasing refinement of colour theory, especially in later years as the ever-growing range of colours in paint and fabric made possible by advances in manufacture destroyed the traditional constraints on colour selection.

\*Fig. 161

\*Fig. 160

\*Fig. 148

The deliberate opposition of complementary paint and fabric colours in the Blue Velvet Room at Carlton House\* has already been suggested. In this too a common characteristic of the earlier part of the period may be discerned since in many instances it would have been extremely difficult to have achieved a precise match between colours on different materials, and to contrast them was therefore much more simple. This is far less true today, and one often encounters the desire to match colours between curtains, wallpapers, and paint, or to 'pick up' a colour from a multi-coloured fabric and have the

paint mixed to match. This attitude is natural in an age when colour ranges for the use of the designer are keyed to an abstract standard; but, however far the theorists of the early nineteenth century were progressing towards such an idealised outlook, technology still provided a major constraint, and accordingly its demands and that of theory were commonly met by the opposition of materials of differing colour, rather than their cross-linking. Having remarked that the paint colour should not detract from that of the furnishings, Hay observed that it was the choice of colour for the upholstery which generally fixed that of the former, but, interestingly, he did not set the two in diametric opposition as in the Blue Velvet Room. Instead, he indicated that the paint should match the general tone of the upholstery, so that, if the latter was blue, grey, cool green, or lilac, the paint should be cool in tone; but, if red, orange, brown, yellow, or a warm tint of green or purple (the last an interesting departure from a strict interpretation of Goethe) was employed, the paint too should be of a warm colour.\* Thus, although eighteenth-century architects might have designed their rooms in the belief that a choice of 'beautiful' colours, with their refinement and delicacy, could not but act as a proper setting for fine and expensive fabrics or tapestries, as a corollary of theory the latter was now undoubtedly asserting its precedence in the selection of colour for the paintwork.

Modification  
of the white  
framework

The other implication for design which lay in possession of a colour theory involved further modification of the traditional white architectural framework employed throughout the eighteenth century, on which the effects of the archaeological discoveries at Pompeii, the interest in gothic architecture, and the introduction of graining have already been noted. In 1828 Hay remarked:

\*206 'White, not many years ago, was the only colour in use for the woodwork of rooms of every description; it has now almost entirely given way to shades of various colours and imitations of the finer kinds of woods.'\*

The reason for the first of these modifications seems to lie in the phenomenon of the coloured after-image. Goethe, it will

\*Fig. 148

be remembered, had remarked that the eye sought to produce the complementary colour on the white space next to every hue; and it would have been a small step from this to give it a little practical assistance in the way already seen in the Blue Velvet woom at Carlton House, where the paint was given a complementary tint of 'light peach-blossom'.\* In Rickman's design for the Wellington Club at Liverpool also, the white framework had become a paler tint of the orange-brown used on the main wall areas, contrasting with the pale blue of the ceiling panels and leaving only the relief ornament of the pilaster panels and the column capitals and bases white.\*

\*207

A few years later, Vanherman provided an outline colour scheme for a typical apartment.\* The flat stucco walls were, he said, generally painted one colour (to which a single trompe l'oeil panel was applied), but the scheme was of equal application in cases where the walls were wainscoted and divided by mouldings. Using the alternative of 'light yellowish buff' and 'light plum colour' his scheme may be set out as follows:

\*208

<u>Buff</u>	<u>Plum</u>
	upper member of cornice
	ogee below
	corona
	ovolo
	panels and stiles
	panel mouldings
	upper moulding of dado
	ogee
	corona
	ovolo under corona
	die or dado
	torus or top of plinth
	plinth or skirting.

\*209

This seems unequivocally to be an expression of the idea that, if one element is tinted, the adjacent member must complement it in order to reflect the laws of nature observed in the phenomenon of the coloured after-image; and also reflects Vanherman's remark that white was better 'changed by the addition of the coloured pigments'.\* Inevitably, therefore, the white architectural framework was modified to complement the colour of the walls, and in a way can almost be seen to underly



schemes such as that proposed by Vanherman, although no longer explicitly expressed. It was, however, quickly forgotten, and the architectural elements and mouldings were completely integrated into schemes within which colour harmonies of different kinds were practised. Thus, although in the scheme described above Vanherman employed what Goethe described as a strictly harmonic contrast, he also suggested employment of the alternative colours already mentioned reflecting the latter's characteristic combinations and characterless combinations, all nevertheless disposed over the elements of the room in the same way. An example of such a treatment in practice was revealed in the fourth repainting of the Royal Society's House-keeper's room at Somerset House, which, assuming a ten year repainting cycle in accordance with the number of paint layers found on the samples taken from the room, seems to date from about 1830.\* Here, tints of blue and pink (a characteristic combination in Goethe's terms) were combined, the first being employed overall on the walls and joinery (except on the door, which was grained), and the latter being used to pick out the mouldings. From this it is possible to understand how great a revolution had taken place since the room was first decorated using stone colour joinery, a chocolate brown door and skirting, and grey wallpaper in 1780, and how totally different was the finished effect of about fifty years later.

\*210

COLOUR AND THE  
CHARACTER OF  
A ROOM

The mental link which came to exist between colour and certain styles in which an interior might be conceived has already been indicated. Although, of course, the choice of style would often be determined largely by personal inclination, on occasion this could be linked to the room's function in the same way that, during the eighteenth century, architects had often taken delight in decorating a room with motifs appropriate to its purpose. A particular instance is provided by the remarkable series of interiors which Thomas Hope designed for the display of his collections in Duchess Street in the opening years of the nineteenth century. In his Household Furniture Hope mentioned 'character', 'pleasing outline', and 'appropriate meaning' as constituents of design,\* and it was presumably the last of these which provided the link between the objects on display and the characters chosen for the various rooms. His choice of the 'Saracenic' style for the room containing his paintings of India by Daniell has already been mentioned, but an even more poignant indication of his total conception, which came to permeate later nineteenth-century thinking, is provided by another room, probably inspired by an interior at Fonthill Splendens, Wiltshire (largely demolished by 1814).\* In it,+ the principal object, Flaxman's sculpture of 1791 depicting Aurora visiting Cephalus on Mount Ida, was displayed before curtains drawn back either side of a mirror. Not only was the iconography of the frieze and other elements 'analogous to these personages', but the choice of colour too was symbolic, being designed to reflect directly 'the face of nature at the moment when the first of the two, the goddess of the morn, is supposed to announce approaching day'. The chimneypiece was of black marble,

\*211

\*212

+Fig.155

'whose broad frieze is studded with golden stars. The sides of the room display, in satin curtains... edged with black velvet, the fiery hue which fringes the clouds just before sunrise: and in a ceiling of cooler sky blue are sown, amidst a few still unextinguished luminaries of the night, the roses which the harbinger of day, in her course, spreads on every side around her.'\*

\*213

Close links between such a composition and Goethe's concern with the allegorical and symbolic associations of colour will,

of course, be obvious. Such thinking seems reflected too in the already-noted preference discernable in less esoteric domestic situations for the Pompeian style and its appropriately sombre colouring to provide a proper background of classical scholarship in libraries, a point to which a return will be made in due course. The strong interest of the age in such an outlook strengthened the already partially present link, which was totally abstract and quite independent of any special 'style', between the purposes of other, more ordinary interiors and the types of colour suitable for their decoration. These ideas, implicit in Laugier's mid-eighteenth-century suggestion that brightly coloured marbles should not be used in a mausoleum,\* and perhaps found too in Ware's list of finishes for rooms of different function described in Chapter V,\* were becoming well defined by the turn of the century, and are explicit in the Designs for Architects; whilst in succeeding years they received greater development, and eventually full expression by Hay.

\*214

\*215

Before looking at individual rooms of different function in this way, however, it is important to bear in mind that, besides ways of looking at colour, room uses themselves were undergoing considerable change, and that the earlier system of 'apartments' was breaking down. Hence, although as noted in the last chapter an apartment plan still formed the basis of the south wing at Osterley Park in the formal progression of state rooms completed by Adam during the 1770s, the focus of design was on the Drawing Room rather than the Closet; and the later fundamental alterations in styles of living, of which this was an early symptom, made changes in the planning of new buildings inevitable. These were reflected by Repton in his Fragments of 1816 in which he remarked that three rooms were required in a house, a dining room, a drawing room, and a book room or library; to which might sometimes be added a breakfast room. He stated that general practice in his day was to use the library as a general living room, commenting also that 'that sort of state-room, formerly called the best parlour, and of late years the drawing-room, is now generally found a melancholy apartment'.\* The 'formal gloom' of the 'cedar parlour' which Repton illustrated,\* with its bare floor boards and dark bolection moulded wainscot is intimidating indeed, but against

\*216

\*Fig. 162

it his 'living room', lined with books, suffuses an atmosphere of light-hearted academic enquiry. The author of the Designs for Architects and the later writer Hay, on the other hand, expressed rather different attitudes to the library and drawing room, a point which emphasises the difficulties attending the precise analysis of room function in an age when this was undergoing profound change; but before looking at their ideas a number of general considerations must first be examined.

Writing in 1828, Hay indicated that several matters affecting the building as a whole should be taken into account. These are all of a kind familiar to any architectural student today, but do not seem to have been expressed during the eighteenth century. He suggested that in country residences rooms facing north or east should be decorated in warm tones, whilst those enjoying a southerly or western aspect should be cool in character, especially if the house was intended for summer occupation. (Town houses, on the other hand, should, he advocated, be decorated in warm tones throughout.)\* Thus, he later suggested the use of cream, rather than white paint, in north-facing bedrooms.\* Such a proposition was not, of course, possible until an abstract association of colour with temperature had been made and systematised; but such ideas were easily accepted, and just over a decade later, in 1839, Wyattville criticised himself for not having used a warmer colour than white in a north-facing room at Chatsworth.\*

Vanherman too offered general advice, indicating that the use of light colours would make a room appear larger, whilst darker tones would have the opposite effect;\* and comparable advice was given in 1833 by Loudon, who observed that a cottage ceiling could be made to seem higher by keeping it lighter than the walls and painting them in turn a shade darker than usual.\* In 1785, Peacock had advocated the model of a landscape for the decoration of a room, so that beneath the 'sky' provided by the ceiling 'the walls should partake of a middle hue, and the floor in deeper die, should be imitative of the carpet of nature'.\* A similar analogy was used by Vanherman in connection with the overall planning of colours within the house. For this he made comparison with a good picture, indicating that the entrance hall was to be regarded as the foreground, whose parts should

accordingly combine form and strength of colouring, be strongly marked and well connected, and be of a warm hue. The staircase could be of the same tint, but two shades lighter; whilst, proceeding to the suite of rooms on the first floor, he remarked that in these the eye should be pleasantly surprised, yet not dazzled by too many glaring lights. He continued by observing that this,

'principal or middle group, should be the most splendid, but of a mellow and calm tone; brilliant, but not gaudy; magnificent, but not heavy';

\*223 and completed his simile by observing that the 'aerial tint' should be adopted the higher one advanced, in order to give a feeling of lightness.\*

The hall and staircase

\*224 It will be appropriate to commence detailed consideration of individual rooms with the hall and staircase, for which Vanherman had earlier recommended the use of a warm stone colour.\* This advice is clearly consistent both with his attitude to the overall planning of colour within the house, and with the general practice in the use of stone colour on the part of many architects during the eighteenth century. Hay too reflected a desire for solidity, stressing the need for simplicity and freedom from contrasts of colour in order to achieve architectural grandeur by the interplay of light and shade alone. In this way, he observed, the effect of the other rooms would be greatly enhanced, although, on the other hand, the hall should not be so free from colour as the exterior of the building. In contrast to Vanherman, however, Hay advocated \*225 the use of rather cool tones,\* a preference which seems to have been partially shared by the author of the Designs for Architects, who proposed the use of light grey on the walls of his staircase, but gave a 'tender yellow marble' as an alternative and suggested the employment of a colour having the 'tone of new stone' in the ante-room at its head. Contrast of colour in the staircase was, however, avoided by making the 'subbasement' (in this case the walls of the ground storey) 'more coloured, but still to correspond with the rest'; in other words, presumably, the same colour as the main areas of grey \*226 or marble, but of a darker shade.\*

A similar conception may be seen in both drawings by Dance for the Staircase at Stratton dating from 1803. His 'first thought' is rendered in tones of sepia with white capitals and bases to the columns,\* whilst on the other drawing the pinkish red drums of the colonnade with their bronzed capitals and bases, and a bronzed handrail, are set in an interior of otherwise neutral tone.\* Soane too expressed the Sublime, although on a smaller scale, in his marbled entrance Hall of 1802 for Robert Knight, with its cool, bluish grey walls, giallo columns, and neutrally toned architecture.\* Other examples of the use of marbling, and also imitations of freestone in Halls and Staircases, which were no doubt seen as appropriate in achieving grandeur are mentioned below; whilst in the Staircase Hall at Pellwall in the later 1820s Soane's perspective indicates a similarly neutral tone contributing to the monumental quality of the design.\*

#### The dining room

Both Hay and the author of the Designs for Architects saw the dining room as sharing to some extent the solid nature of the hall and staircase. Hay remarked on the substantial and sombre character requisite in its colouring, observing that this should be warm and rich, but avoiding vivid contrasts;\* whilst the latter advised that the colour should be 'uniform and still', suggesting a 'vigorous and warm grey' or a slightly veined marble.\* Grey is shown on the walls in the perspective by Joseph Bonomi (1739-1808) dated 1800 showing the Dining Room at Lambton Hall, Co. Durham, an austere room with a white segmental vault, white architectural framework, brown door, and brown skirting fascia.\* Soane's two alternative schemes of 1808 for the Dining Room at Taymouth Castle, however, are infinitely more domestic, and in their choice of a pink or a clear blue tint for the walls contrasting strongly with curtains reversing these colours, differ markedly from printed advice.\* Nevertheless, there is, perhaps, in both drawings a little of the 'still' character advocated by the author of the Designs for Architects; whilst Soane's perspective of the Eating room at Pellwall, prepared two decades later, with its deep red walls, grained woodwork, and white ceiling with bronzed ornament indicates, possibly, that here at least he wished to reflect more of the attitude expressed by Hay.\*

\*Figs. 160, 161

The drawing room

Despite the comments of Repton, drawing rooms were seen by both the author of the Designs for Architects and by Hay as possessing a less imposing character. They ought, indicated the former,

\*235 'to be the richest and the most decorated of all the Rooms. Gold, painting, bronze, marble, looking-glasses should be united to the furniture of the richest stuffs';\*

\*236 whilst Hay mentioned their atmosphere of vivacity and gaiety.\* In these remarks, as with the hall, both authors were, perhaps, at least to some extent, developing attitudes implicit in the work of an earlier generation. As already noted, gilding had often been reserved for the drawing room; and the wall covering which Soane had indicated on his design for the Withdrawing Room at Wimpole of 1792 was similarly rich, consisting of a deep yellow bordered with blue, and incorporated panels of

\*237 white grotesque on a black or dark grey ground.\* The two nineteenth-century writers, however, do exhibit a noticeable divergence of outlook. The earlier author laid stress on the use of 'the best chosen forms from the Antique', and on 'taking especial care to preserve the repose which the eye requires', to which end, variety of colour was, he indicated, to be avoided;\*

\*238 but a quarter of a century later, Hay, in search of 'vivacity, gaiety, and light cheerfulness', recommended the introduction of light shades of brilliant colours with a

\*239 considerable degree of contrast.\*

The library

Both authors, however, whilst differing from Repton, seem to have concurred completely over the treatment of the library. Hay indicated that a solemn and rather severe style of grandeur was appropriate for this room, and that this was to be achieved by the use of 'no richer colouring than necessary' to produce this effect.\* At the beginning of the century, the author of the Designs for Architects had decorated his design in a way consistent with this later advice, using paint of 'two grey yellows, or other still colours, but not brilliant', providing a brown morocco sofa, and a carpet of two browns with an Etruscan border, whilst the room contained in addition 'antiques of bronze supported on columns of precious

\*241 marble'.\* In 1805, George Smith produced a design for a

\*242 library sofa incorporating fascas at the angles;\* and the use of Pompeian and Etruscan motifs in libraries by George Dance the younger at Lansdowne House and at Stratton Park has already been mentioned. So too has their 'Pompeian' or 'Etruscan' colouring together with the former in his Library for T.J. Heathcote in St. James's Square;\* whilst Vanherman gave formulation details of a 'Crimson for libraries', observing, 'some gentlemen prefer having the colour subdued, by the addition of a small portion of black'.\* Thus, classical allusion both in motif and colour, was clearly contributing to the solemn and severe grandeur thought appropriate to rooms for academic pursuits.

\*Fig. 156

Picture galleries

A similar colour seems to have been a favourite in picture galleries. During the eighteenth century, red had often been used as a ground for pictures; and the Morning Room at Saltram, in which many are displayed, is thought to retain its original red velvet of about 1750.\* Nash's perspective of his Gallery at Attingham, completed about 1806, shows the walls painted in a dull red,\* which, a sample taken in connection with the present study seems to show, was executed using a formula dulled with black in the way later suggested by Vanherman for a 'dark blotting-paper colour' suitable for picture galleries.\* This, he said, 'harmonises with paintings and gilt frames'.\* Soane's perspectives for the Dulwich Picture Gallery, Surrey (now London Borough of Southwark), opened a few years later, showed his intention to use a similar red,\* which, having visited the Gallery in 1814, Joseph Farington recorded in execution as 'something like burnt Oker but heavier'.\* In the early 1820s Nash painted the walls of his own Gallery in Regent Street, London, a 'pale red', although it seems to have housed mostly books and sculpture;\* and a mid-nineteenth-century watercolour of the North Gallery at Petworth, completed in its present form in 1826, furthermore, shows the walls in a dark 'Pompeian' red.\* In view of this undoubted taste for red, it is of interest that the Duke of Wellington hung the Waterloo Gallery at Apsley House, built to the designs of Benjamin Dean Wyatt in 1828, with yellow damask. This was, however, strongly criticised by Mrs. Arbuthnot who believed it was the very worst colour for the pictures and that it would kill the effect of the gilding.\* Recent redecoration



of the Dulwich Gallery has allowed the advantages in this respect of Vanherman's red to be appreciated, and has, moreover, revealed it as a quiet and sympathetic colour lending the interior a character of gravity and repose, against which the majority of the late eighteenth-century collection of paintings are shown to excellent advantage.\*

\*Fig. 163

The boudoir

Against all the rooms so far considered, the boudoir stood in complete contrast. Vanherman, reviewing taste, divided it into two kinds, the classic and the fashionable. \*253 The first was ever consistent, the second ever changing;\* and it is tempting to suggest he would have seen the library as typifying the former, whilst the boudoir, described by \*254 Ackermann's author as 'elegant, brilliant, and showy',\* reflected the latter. Matters of taste were, Vanherman remarked, 'best managed by the ladies... who generally take \*255 pleasure in all that pertains to the interior arrangement';\* and feminine qualities are expressed to the full in the description of the boudoir illustrated in the Designs for Architects. This contained a,

'sopha and curtains of silk, of a soft colour, such as blue, rose or lilac; lined with yellow or white; all the draperies the same; fringes, tassels, and embroideries in silver; the remainder of the room and the ceiling painted, imitating the same stuff and the same embroidery all round, picked out with silver; the cornice and the pannels white, the flowers of the frieze painted, and all the ornaments in silver; the cauve a white grey'.

The chimneypiece was to be of the whitest and purest marble with mouldings and ornaments of polished steel, and, by way of additional embellishment to the room, flowers could be painted upon the windows, on the panels of the doors, and on the looking glasses, whilst all the furniture was also \*256 trimmed with silver.\*

The same feminine delicacy may be seen in the Boudoir at Attingham Hall, which is decorated in pure tints of pink, French grey, and mauve; its panels of refined grotesque, whose

\*Fig. 139

many hues and two colours of gold are of extreme delicacy, being set on a ground of a soft stone colour.\* The date of this decoration is uncertain, and it is definitely not the first scheme applied to the room,\* but it conveys immediately the atmosphere and character intended by Ackermann's author, whose design perhaps reflected elements in the Circular Room at Carlton House, most especially the use of silver leaf.\*

\*257

\*258

Such rooms, of course, must always have been somewhat exceptional, and there seems little concession to femininity on the part of Soane in his perspective of the Lady's Morning Room and Lady's Dressing Room at Pellwall beyond a certain lightness of tone, suggesting, perhaps, that Ackermann's boudoir was greatly idealised.\*

\*259

#### The bath

A similar tendency to idealisation may also be detected in Ackermann's bath, a room of strongly archaeological derivation, which, the author of the text stipulated,

'must either be painted of one colour, or be made of the plainest uniform marble, to bring out the chairs; all the ornaments, bas reliefs and chairs are in white... the stuffs brilliant, but still plain and uniform. The bath and the room ought not to be illuminated in a glaring style, but by a dim and gloomy light.'

\*260

#### Bedrooms

In the bedroom, however, there was no place for such dim and obscure conditions. They were, remarked Hay, to be light, cleanly, and cheerful in character. For this reason, although in other rooms the joinery was commonly painted a colour, or grained, white was here still adopted, especially in summer residences where its light, clean, and cheerful effect was extremely pleasing unless destroyed by the introduction of violent and deep colours. Light shades of yellow were, he naturally felt, particularly agreeable to bedrooms having a north or east light, and this would go well with white, lilac, or chintz furniture; whilst light shades of blue or grey were suitable for bedrooms in country residences. On the other hand, a great degree of contrast could also, he added, be admitted on occasion, since this could be amply balanced by the bed, curtains, and other furnishings.\*

\*261

The matters considered so far in this chapter have, it will be appreciated, been largely theoretical. Having thus considered the advance of archaeological and art-historical knowledge, the ramifications of early nineteenth-century colour theory, and the links between colour and the character of a room, it is necessary to conclude by making a number of observations concerning certain architectural developments and other aspects of everyday practice.

\*Fig. 166

In the first place, it is important to remember that paint had never been the only way in which colour could be added to the sides of a room, and wallpapers, often of a floral or striped pattern, were very commonly used in cottages and both town and country houses. By the end of the period covered by the present study the colour of the paintwork in a room could be linked to it, as may be seen in Charlotte Bosanquet's watercolour of the Drawing Room at Clay Hill, Enfield,\* where the blue is carried through into the picking out on the door and its architrave. Also, in grand rooms walls continued to be hung with fabric, the richness of those at Fonthill and Carlton House, indeed, being a byword. Pyne's list of materials used at the latter included dark and light blue velvets, and crimson and rose coloured satin damasks;\* 262 whilst at Fonthill Rutter scheduled a dazzling array of silks, damasks, and other fabrics, whose colours included crimson, yellow, 'garter blue', scarlet, and purple. The North Nunnery in the central tower was hung with a 'rich oriental silk', and other rooms contained Chintz, painted cloth, and tapestry.\* 263

\*Fig. 148

Fabrics came, however, to be used in a slightly different way, and despite the rhetorical question, 'what could be so mean as the thought of framing a piece of the hanging?' which Ware asked in a slightly different context in 1756,\* it became fashionable in the early nineteenth century to use fabric within panels applied to the wall. A light blue velvet was employed in this way, for example, in the Ante-chamber to the Throne Room at Carlton House; and a similar arrangement was used in the Blue Velvet Room\*and its adjoining Closet, the colour here being quite dark.\* 264 Similarly, Wyattville made a preliminary proposal for the use of crimson or purple velvet panels in the Dining Room at Chatsworth, decoration of which 265

\*266 commenced in 1831.\* On the panels of this room, as at  
Carlton House, pictures were to be hung; and, as Wyattville's  
biographer has pointed out, where the colour of the fabric  
was dark enough to provide a considerable contrast between  
the wall and panel ground, such a device was useful in dis-  
guising discrepancies in the sizes of large paintings. A  
comparable treatment in which a gilded diagonally-patterned  
infilling was employed was specifically used for this very  
purpose in the Gold Drawing Room at Chatsworth a few years  
later.\*

\*267

This treatment of the wall with applied panels had,  
moreover, found a parallel expression in paint, and, indeed,  
became quite common. The use of painted panels surrounded  
by raised gilt mouldings was advocated by George Smith in  
\*268 1812 and 1826,\* and it seems likely that gilded pressed metal  
strips and corner ornaments such as those still existing in  
the Sultana Room at Attingham became commercially available  
for the purpose. In 1819 and 1820 respectively, Buckler de-  
picted the Drawing Rooms at 45 Grosvenor Place and 33 Upper  
Brook Street, London, with panels which appear to have been  
\*269 +Fig.164 painted in this way;\* and a view of about 1830+ shows the  
Drawing Room at 45 Bedford Square, London, with the same treat-  
ment. In 1828, Vanherman observed that a single trompe l'oeil  
panel with corner ornaments should be painted on each wall of  
\*270 a room,\* and in 1833 Loudon advocated the use of stencils in  
painting panels on the walls of cottage interiors (a technique  
mentioned in 1830 by Tingry's editor for the imitation of  
\*271 wallpaper).\* In 1840, the Arrowsmiths used several panels on  
\*272 a single wall,\* a practice depicted in a watercolour of about  
\*273 1855 showing the Drawing Room at Longford Hall, Shropshire,\*  
By about 1870, it is interesting to note however, Eastlake  
observed that the fashion which had prevailed until about  
fifteen years before he was writing 'of arranging paper in  
panels round a room, and enclosing them with narrow strips  
of the same material stained and shaded in imitation of wood'  
\*274 had fallen into disuse.\*

In parallel with the use of wall panels, there was a  
contemporary movement away from the use of a dado. At Carlton  
House at least one room was without this feature,\* which had,

indeed, often been omitted in earlier years from bedrooms and other rooms on the uppermost floors of even grand residences such as that shown in the Yenn design illustrated above\* and the Great North Bedroom at Strawberry Hill drawn by John Carter in 1788.\* Dados seem to have been absent from the principal rooms in Thomas Hope's house in Duchess Street,\* and Soane too omitted the dado in his Breakfast Room at Pitzhanger. Nor was there a dado in his Picture Gallery at Dulwich.\* By the time the Arrowsmiths published their book in 1840, the dado was usually omitted, and in the majority of their schemes large panels fill the full height of the wall from skirting to cornice.\* This fashion naturally led to the alteration of earlier rooms, and, for example, by 1832 the dado appears to have been removed from Dance's Great Drawing Room at Pitzhanger, allowing the Chinese wallpaper to run the full height of the wall between the entablature and skirting;\*+ whilst in 1837, Charles Dickens also seems to have removed the dado from his Drawing Room in Doughty Street, London, (now No. 48, built in 1801) and to have papered the wall from skirting to cornice.\* Charlotte Bosanquet's watercolours of the 1840s, including those already illustrated,\* often show rooms in which there was no dado;\* but interestingly, by about 1870 Eastlake was extolling its lost advantages, both practical and aesthetic.\*

Finishes

With regard to the choice of finish, distemper seems to have enjoyed considerable use, both on walls and ceilings, even in better class houses. Whittock's book suggests its extensive employment,\* and, as already noted, it had been used in one of the Ante-rooms at Carlton House,\* here, no doubt, in order to achieve the bright distinctive blue only possible with blue verditer.\* Amongst more ordinary residences, about 1800 the Staircase and Bedrooms at 'Mr Firth's House' in Doncaster, and various rooms in 'Dr Steuart's house' in the same town had been coloured in distemper (restricted, presumably, to the walls above the dado and the ceilings), in each case pigments typical of this medium being employed. In both instances these included the variety known as 'pink', again, no doubt, in order to achieve the bright yellow only possible in this technique.\* Pincot's list of proprietary 'Water Colours' will also be recalled as containing verditer greens, blue, and yellow.\* Nevertheless, Tingry remarked that oil painting had a,

\*287 'character of solidity which causes it often to be preferred to that executed in varnish or distemper';\*

and oil no doubt continued as the norm in the best work. It would, in any case, have been the virtually invariable choice on all joinery, including that which was to be grained; whilst flatting seems to have retained its position of pre-eminence in the fine rooms of a house. Thus, Pincot remarked about 1811 that a flatting coat was necessary in 'the best rooms, as parlours, drawing and dining rooms',\* and Nicholson observed in 1819 that it was preferred for all superior work, although, he commented, it was rarely used for any other than the principal rooms.\* On occasion, however, it is possible that it was used more generally in a house (as in earlier years in the Hall at Osterley) since Vanherman mentioned its employment in halls and staircases.\*

Against this continuing preference for a dead matt finish, it is unquestionable that graining and marbling were generally varnished. This was the case, for example, in the Breakfast Rooms at Pitzhanger;\* and the painting which in 1838-9 replaced the unsatisfactory white scagliola (considered 'bad and lustreless' by the Duke of Devonshire) in the rooms at Chatsworth intended as the Private Dining Room was varnished and 'rubbed down like a coachpanel'.\* Other references to the practice have been mentioned in the sections on graining and marbling in Chapter II above. The availability of the varnish paints described in Chapter II, such as the 'Antique Ornamental Paints' of about 1816 and the French 'Couleurs Lucidoniques' of a few years earlier, perhaps suggests that glossy finishes may have been used on plain areas of paint from time to time; and certainly in France painted wainscot had been varnished on occasion during the second half of the eighteenth century. Tingry naturally described this practice, indicating in particular: 'Painting in distemper, when carefully varnished produces a fine effect'. Blue specifically, he suggested, acquired brilliancy and splendour when applied in this way; and he also remarked on the general practice on the Continent of covering dark areas of wainscot with varnish.\* Other than the possible use of the 'encaustic' technique in places such as the Pompeian Library at Packington Hall about

1810 and the British Museum later in the century, however, in  
\*294 which it was probably confined to elaborately decorated areas,\*  
firm evidence for the use of glossy finishes in England seems  
elusive; and as far as ordinary situations are concerned it  
probably remained uncommon other than on imitations.

#### Gilding

\*295 In 1827, Whittock remarked that gilding was fashionable  
in the decoration of apartments,\* and examples of its use in  
preceding years are numerous. It was employed on the orna-  
\*296 ments in Hope's Indian Drawing Room in Duchess Street,\* and  
appears on the ceiling mouldings and ornaments in Soane's  
\*297 1808 designs for the Drawing Room at Taymouth Castle.\*  
Buckler mentioned the gilding on the ornaments of the ceiling  
\*Fig. 146 +298 of the Dining Room at Eaton Hall,\*+ and Soane seems to have  
envisaged its use on the ceiling in the Lady's Morning Room at  
\*299 Pellwall in 1828.\* Lavish quantities had been used at Font-  
\*300 hill\* and Carlton House (at the latter both on ornament and  
\*301 as already mentioned for the grounds of coloured arabesque),\*  
\*302 and was also much in evidence at the Royal Pavilion, Brighton.\*  
King William IV is said to have had an extreme dislike of  
\*303 gilding;\* but in spite of his seeming reaction away from the  
extravagance of his predecessor in this respect, it is shown  
at Buckingham Palace in Blore's watercolour of 1846-7 on the  
\*304 ceiling ornaments of the Queen's Private Entrance.\* A later  
example is provided by the monumental design of 1880 for the  
Hall at Clumber, Nottinghamshire, by Charles Barry the younger  
\*305 (1823-1900),\* and there can be no doubt that the use of gild-  
ing continued throughout and well beyond the first half of  
the nineteenth century. In fairly ordinary interiors it had  
a particular use in the borders occasionally applied to the  
margins of wallpaper, an example of this having been illus-  
\*Fig. 166 trated;\* whilst in 1837 it seems Charles Dickens had that in  
his Drawing Room finished in this way.\* It was also used, it  
will be recalled, on the mouldings (either real or trompe  
l'oeil) around the false panels with which walls might be  
embellished, apropos which Vanherman advised that if the orna-  
\*307 ments of the panels were gilt or bronze, the mouldings should  
be of burnished gold.\* There also seems to have been an  
occasional use of silvering in certain rooms, and two exam-  
\*308 ples (the Circular Drawing Room at Carlton House,\* and the  
\*309 Boudoir of the Designs for Architects\*) have already been

mentioned. No doubt silvering was seen as especially appropriate for more feminine interiors, but it seems likely that tarnishing would have presented a considerable problem, and how long the fashion continued is uncertain. Perhaps Vanherman's 'mother-o'-pearl' imitation described in Chapter II was designed to overcome this.\*

\*310

The use of gold in domestic interiors during this period can be related to much that has already been considered above in connection with paint colour. Hay discussed it in terms of its contribution to colour harmony, using either gold or 'gold colour' in his colour scheme based on green in order to 'harmonise, relieve, and enliven' it. In blue schemes, however, he considered gilding unnecessary since, he remarked, white and pale yellow could be employed to lighten and relieve it. Use of gold was also intimately connected with the function of a room. For this reason, Hay indicated, it was appropriate used in a 'considerable degree' in drawing rooms, contributing to their atmosphere of vivacity, gaiety, and light cheerfulness; but in the more substantial and sombre atmosphere of the dining room its use, except in very small quantities, was, he observed, to be avoided.\*

\*311

## Conclusion

To sum up the use of paint colour during the period covered by this, the final chapter in Part Two, is not altogether simple. It is, however, notable that although many of the new factors and interests described above, in particular marbling, bronzing, graining, and the taste for Etruscan yellow and Pompeian red, added considerable weight to the house-painting palette, the paler eighteenth-century colours nevertheless remained in constant use and were, indeed, important in providing a well balanced, harmonious colour scheme. In fact, the new ideas seem to have gained ground fairly slowly and, as has been mentioned, as late as 1813 Martin remarked that in contrast to France, where joinery was grained, in England the dead white of the architectural frame was still in vogue.\* The publication in 1804 of an English edition of Tingry's Swiss work may well have been significant in this respect, for not only did it contain formulae for tints of the type advocated by Watin three decades earlier in the 1770s, but Tingry particularly indicated that light grey grounds were

\*312



much used in rooms, especially those exposed to the strong  
 \*313 light of the sun.\* It is clear too that at the beginning of  
 the next decade Pincot was retailing a range of familiar dis-  
 temper colours, comprising French grey, yellows of different  
 \*314 strengths, and greens and blue of verditer type,\* a variety  
 comparable with that mentioned (with the addition of fawn)  
 \*315 by Nicholson in 1819.\* Together with others of the Adam per-  
 iod, such colours appear on architectural drawings and in  
 illustrations of rooms throughout the whole of the period  
 covered by this chapter. The use of blue verditer distemper  
 \*Fig. 26 at Carlton House has been illustrated\* and discussed above;  
 whilst in 1791 Soane showed yellow walls in his design for the  
 \*316 Drawing Room at Bentley Priory, Middlesex.\* This, in fact,  
 seems to have been something of a favourite choice by him for  
 Drawing Rooms, and he later proposed it for those at Taymouth  
 \*317 (1808)\* and Pellwall (1828),+ using it also in his own first-  
 \*318 floor Drawing Rooms at Lincoln's Inn Fields.\* In 1801 he was  
 \*319 thinking in terms of a pale blue for the walls in his Library  
 \*320 at Pitzhanger,\* and shows it too on his perspectives of the  
 \*321 +Fig.161 Music Room\* and Dining Room at Taymouth.+ An alternative  
 \*Fig. 160 drawing shows the use of pink in the latter,\* whilst in the  
 \*322 Breakfast Room a pale green is indicated.\* About the same time,  
 James Johnson (d. 1807) showed pastel blue, pink, green, and  
 \*323 cream on three transverse sections for the New Mint, London;\*  
 whilst Buckler's drawing of 1816 for the Library-Drawing Room  
 at Bromley Hill, Kent, shows that it had walls of a subdued  
 \*324 green.\* In 1818 the Dining Room at Aubrey House, London,  
 \*325 had lilac-coloured walls,\* and a paler tint of the same colour  
 was also much in evidence in the North and South Drawing Rooms  
 \*326 at the Royal Pavilion, Brighton, in 1821;\* whilst about 1830  
 the Drawing Room at No. 45 Bedford Square had walls decorated  
 \*Fig. 164 in a series of off-whites.\*

The majority of these examples exhibited too a continued  
 use of the white architectural framework, but in 1828, well  
 after the popular acceptance of graining in its stead, Van-  
 herman still listed French grey, straw, lavender, a warm  
 stone colour, and pea green (together with his crimson for  
 libraries and red for picture galleries) as comprising 'some  
 of the most approved tints now in use'. To these he added,  
 \*327 however, sage and drab greens;\* and, in a context of what was

probably grained joinery, about the same time Soane indicated a dull green on the walls of the Lady's Morning Room and Lady's Dressing Room at Pellwall, together with the yellow (probably paper) and red already mentioned in the Drawing Room and Eating Room respectively.\* Yellow was to be seen in a similar context on the walls of the Entrance Corridor at Capesthorne about 1840,\* whilst at a roughly contemporary date at Vinters, near Maidstone, Kent, the late eighteenth-century Entrance Hall, whose doors and architraves appear to have been grained, was painted a light green.\*

Examples of similar tints may also be found on joinery, instances including that of the Drawing Room at Aubrey House, London, built by James Wyatt in 1774, which in 1818 was blue (here combined with blue picking on cornice and ceiling, whilst the walls were decorated as if hung with yellow drapery, an idea parallel with the décor advocated for the Boudoir in the Designs for Architects and probably executed in wallpaper).\* Blue was also used about 1830 in the room at Somerset House designated by Chambers for occupation by the Royal Society's Housekeeper,\* whilst in 1837 Charles Dickens painted all the joinery in his wallpapered Doughty Street Drawing Room lilac (before he arrived it had all been green, and before that white).\* At Vinters too, the Library,+ whose yellow marble (or scagliola, if not marbled) columns probably survived from an earlier decorative scheme, was lilac from skirting to cornice.

It seems clear, therefore, that in general, with the notable addition of certain dull greens, eighteenth-century colours continued to be used on walls independently of the use of graining or tinted joinery, and that the new 'Pompeian' colours and other hues of 'an historical nature were most generally reserved for special purposes. The use of the former in libraries and picture galleries has already been noted, and the Drawing Room at Bignor Park, Sussex, seems to have been decorated in a similar colour in the 1830s or 1840s, probably on account of the pictures it contained;\* whilst the Arrowsmiths (who used pale tints with white for many of the interiors they illustrated, especially those of the 'Louis XIV' and 'Louis XV' styles)\* employed stronger colours only

\*336 in those rooms for whose style it was appropriate, such as  
their 'Etruscan', 'Moorish', or 'Elizabethan' examples.\*  
Marbling, on the other hand, was particularly used in pas-  
sages, entrance halls, and staircases. Charlotte Bosanquet  
painted several examples, including the 'Gallery' at Vinters,  
the Staircase at Strood Park; the Hall and Stairs at Gabalva,  
\*337 and an unidentified minor staircase and passage.\* Sometimes  
it was simply blocks of stone which were imitated, and Rutter  
described the walls and ceiling of the Southern Entrance Hall  
\*338 at Fonthill as 'painted to represent stone';\* whilst in 1821  
the walls above the wainscot in the Hall at Dunham Massey  
\*339 were 'coloured and painted like stone'.\*

Although an exceptional building, and not entirely  
typical, Soane's house in Lincoln's Inn Fields seems to sum  
up appositely the attitudes of the period as fully developed  
in an immediately accessible way, with its Staircase painted  
in imitation of marble blocks, its ground-floor Library in  
'Pompeian' red with bronzed details, and its first-floor  
\*340 Drawing Rooms painted a cheerful yellow.\* Such a décor was  
probably quite common, and echoes may even be found in the  
advice offered in 1833 by Loudon for the decoration of a  
cottage. In the Entrance Lobby he advocated the use of a  
plain paper 'simply marked with lines in imitation of stone',  
whilst with regard to the distemper employed elsewhere in the  
cottage he observed:

'All the different colours are used for the walls of  
rooms; but the most common, after white, are some  
shades of yellow, red, green, or grey'.

Graining was to be employed on the joinery, whilst the cornice  
should, he stipulated, 'generally exhibit some colour belong-  
ing to stone, such as white, or some shades of yellow, grey,  
\*341 or brownish red'.\*

Turning finally to consider the everyday place of colour  
on ceilings, the continuing and common use of plain white,  
even in rooms of importance within the house, is particularly  
striking. This is especially noticeable in designs by Soane  
such as those already mentioned; whilst a glance through Pyne's

\*Fig. 26  
 \*342  
 \*343  
 \*Fig. 146  
 \*344  
 \*345  
 \*346

illustrations of Carlton House will show that in 1819, in rooms without clouded ceilings such as that already illustrated\* white predominated as the overall treatment (apart, that is, from the panels of inserted painting or arabesque).\* This is not, of course, to say that coloured panels were never used. Leaving aside such exotica as Hope's Duchess Street interiors, and Fonthill with its 'deep crimson' grounds in the vault of the Oratory\* and prevalence of oak or grained ceilings in other rooms, it will be recalled that at least two other rooms at the latter (the Oak Parlour and the Vaulted Library) had panels picked in pink; whilst at Eaton Hall the Dining Room\* and Saloon had ceiling panels picked in with pale blue. These examples no doubt represent a continuation of eighteenth-century taste applied to late 'gothick' interiors, but both Rickman at the Wellington Club, Liverpool, (1814)\* and Goldicutt in his designs for King's College, Cambridge, (1823)\* included blue panels in classical vaulted ceilings; whilst in 1827 Whittock provided instructions for the painting of a ceiling with coloured panels in trompe l'oeil, showing that to some extent eighteenth-century taste persisted well into the nineteenth.\*

\*347  
 \*Figs. 160, 161  
 \*348  
 \*349

On plain ceilings, however, although white seems to have remained the most common treatment, it was often modified, not only having its hard 'edge' removed as indicated in Chapter III by the addition of a small quantity of black pigment, but also being subtly tinted. In the Oak Library at Fonthill, for example, the 'reticulated' ceiling above the wainscoted walls was painted a 'light stone colour',\* and it seems possible that Soane may have intended a similar colour on the ceiling of the Dining Room at Taymouth Castle, this being washed in pale yellow on his designs.\* In this connection, however, it should be noted that, as in the case of several drawings for the Breakfast Room at Pitzhanger, Soane often showed quite a dark stone colour on ceilings;\* but at the latter, investigation showed it was executed in a very pale tint,\* and the same may have been generally true elsewhere. Stone colour was not the only alternative though, especially on plain ceilings; and, in a way parallel with the modification of the white joinery framework of the room, Vanherman, having described his 'Royal white' as excellent for common

ceilings, remarked that colour could be added to it. He noted that a general tint of light pink, lavender, light purple, or very light French grey had become common, adding  
\*350 that this was frequently the same tint as the wall panels.\*  
In 1833, the ceilings of the Dining Room, Drawing Room, and Breakfast Room at Dunham Massey were to be painted a 'rose  
\*351 tinted White' in this way;\* and about a decade later Dickens specified a 'faint pink blush' was to be used on that of his  
\*352 Drawing Room at Devonshire Terrace, London.\*

The final impression presented by the years marking the terminal date of this study is that of a total shift of emphasis in design away from the grand aristocratic interiors which formed the bulk of the examples discussed in Chapters IV to VII into the more homely rooms inhabited by the middle classes, such as the Drawing Room of Charles Dickens just mentioned. To a certain extent, this is undoubtedly owing to the pattern of evidence which survives, the bulk of which until about 1800 relates to noble houses, and allows only glimpses into more humble interiors; but from the beginning of the nineteenth century there is a clear concentration in published literature on the decoration of middle-class rooms. No doubt increasing wealth in the professions and amongst tradesmen had much to do with this, together with a gradual cheapening of fabrics, wallpapers, and other materials as the technology sired by the industrial revolution grew and advanced. Within a few years, cheap engine-produced goods became available to all sectors of the population, the debased nature of which led to reaction on the part of William Morris and others, and to the attempt made by Charles Eastlake in his Hints on Household Taste to 'improve... popular taste in objects of common use'.\*  
\*353 This battle lies, however, beyond the scope of the present study, which must conclude with the tranquil and nostalgic homeliness portrayed by Charlotte Bosanquet in her water-colours of the early 1840s, and hardly since recaptured.\*  
\*Figs.165, 166, 167