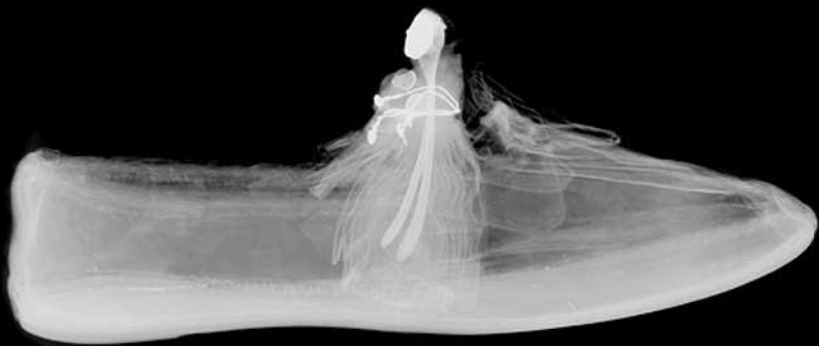


X-RADIOGRAPHY OF TEXTILES, DRESS AND RELATED OBJECTS



Sonia O'Connor • Mary M Brooks

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OF TEXTILES, DRESS
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Preface

Mary M. Brooks and Sonia O'Connor

This book presents results from a research project exploring the potential of X-radiography as a tool for the characterisation, condition assessment and study of ancient, historic and contemporary textiles and hence to aid conservation decision making and curatorial studies. The project formed part of the research supported by the Arts and Humanities Research Council (AHRC)¹ *Research Centre for Textile Conservation and Textile Studies*. The Research Centre was established in July 2002 by the Textile Conservation Centre (TCC), University of Southampton, in conjunction with the Department of Archaeological Sciences, University of Bradford, and School of Art History and Archaeology and the Whitworth Art Gallery, University of Manchester. The Research Centre's goal is to improve the conservation and interpretation of historic textiles by enhancing knowledge and understanding. To this end, research is structured into four themes: *Textile Materials*, *Modern Materials*, *Textiles and Text* and *Worldly Goods*. This radiography project is part of the *Textile Materials* theme and is a collaborative project between the University of Southampton and the University of Bradford.

The first questions that are asked about radiography of textiles are:

- Is it safe for me and safe for the artefact?
- Will it show me anything I would want to know?
- Can I get it done easily?

This book addresses these questions and presents conservators, curators and others interested in understanding textile artefacts and their histories with a comprehensive view of the role radiography has to play in the study and conservation of textiles.

We have deliberately taken a broad view of textiles and dress – ranging from single layered fragments to complex three-dimensional mixed-media artefacts. The first part of this book covers the principles of radiography and explores the techniques that are best suited to the taking of high quality images of textile artefacts at no risk to the object or personnel. How the resulting radiographs can be best examined and interpreted is explained and developing technologies, which increase the range and depth of information obtainable through radiography, are also introduced.

The aim of the second part has been to demonstrate the extraordinary contribution that radiographic investigation can make to our understanding of textiles and to encourage further research and exploration. The concluding case histories in the third part, written by colleagues with experience in the radiography of textiles, demonstrate the added value that radiography can provide in very diverse circumstances.

We hope this book will be the catalyst for the wider use and exploration of radiography in relation to the study and conservation of textiles and that the examples and case studies presented will excite and inspire conservators to feel confident both to undertake radiography of textiles themselves and those unfamiliar with radiography to brief others on appropriate techniques when commissioning textile radiographs.

Researching the systematic application of the established technique of radiography to textiles has been a fascinating journey. Our goal throughout has been to communicate what we have learnt to the wider conservation and textile communities through presentations, publications and teaching. Many people have generously shared their experiences, given us guidance

Note

1. On 1 April 2005, the Arts & Humanities Research Board (AHRB) became the Arts & Humanities Research Council (AHRC).

and suggested avenues for further exploration. It has been our privilege to draw together work from practitioners in this area and we are very grateful both to those who made us aware of such work and also to our colleagues for participating in the book and sharing their knowledge. We are grateful to all those individuals and institutions who have allowed us to

photograph and radiograph objects from their collections and given permission for their reproduction. Unless otherwise specified, objects are from private collections. We thank all the case studies authors for their input and acknowledge that any errors or omissions are our own.

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Mary M. Brooks and Sonia O'Connor

Contributors

Alfredo Aldrovandi obtained his degree in Physics at the University of Modena, Italy. He has worked at the *Opificio delle Pietre Dure e Laboratori di Restauro* (OPD) in Florence since 1983. As Head of the Physics Laboratory at the OPD, his research focuses on the development and application of diagnostic, non-invasive analysis for works of art. He also teaches physics on the OPD's four-year conservation training course, the *Scuola di Alta Formazione* (SAF). Among his many activities, he collaborates with several institutions in the field of Fine Arts Conservation, taking part in research projects, conferences and courses.

Louise Bacon has been Head of Collections, Conservation and Care at the Horniman Museum in South East London since 1986. An objects conservator trained at the Institute of Archaeology (University College London), she has been an Associate Member of the Museums Association since 1984 and completed her doctorate in Archaeometallurgy in 2003. She has more than 30 years of experience of museums and heritage organisations both in Britain and abroad where radiography has always played an important role in her work.

Gabriella Barbieri originally trained as a linguist, gaining a BA (Hons) in French and Italian from Bristol University in 1989, and a diploma in Technical and Specialised Translation from the University of Westminster in 1990. She subsequently followed a career in technical and legal translation with the UK's largest independent translation company. In 2000 Gabriella decided to pursue her life-long interests in textiles and costume and retrained at the Textile Conservation Centre, University of Southampton, and was awarded an MA in Textile Conservation. After graduation, Gabriella worked on a number of projects at the Textile Conservation Centre before taking up a position at a private conservation studio in London which specialised in the conservation of early Middle Eastern textiles and carpets. Since February

2005, she has been working at the Bowes Museum, County Durham, England, where she is involved primarily in the conservation and display of the Bowes Founders' Collection, which includes a unique collection of embroidered and tapestry-woven seat covers, 16th and 17th century European lace and 15th to 18th century ecclesiastical textiles.

Liz Barham has worked as a conservator for Museum of London Specialist Services since 1999, where the conservation team provides contract conservation services to archaeological units on fresh archaeological finds from sites across the UK, as well as practical conservation services and preventive conservation advice on wide-ranging historic and archaeological artefact collections for museums, archaeological archives, private institutions and individuals. She has an MA in the Conservation of Historic Objects (Archaeology) from the University of Durham and an Honours degree in Classical Civilisation from the University of Warwick.

Clare Bowyer was a Project Assistant for the Fashion Gallery at Snibston Discovery Park and is now at Kettering Museum. Prior to this, she worked as an exhibition researcher at Charnwood Museum, Loughborough and as curator for the costume web pages at the Gallery of Costume, Manchester. As well as volunteering in museums and galleries, she has worked for the Community Fund, English Heritage and Liberty, London. She read History of Fine and Decorative Arts at the University of Leeds before gaining an MA in the History of Dress at the Courtauld Institute, London.

Mary M. Brooks MA, DMS, DipTexCons, FIIC, ACR, HEAM took her BA at Cambridge University. After working in the book world, she moved into management consultancy and then developed her long-term interest in textiles by taking the Postgraduate Diploma in Textile Conservation. She has since worked as a curator and conservator in the USA and Europe, including

developing an award-winning exhibition on conservation. She is now Reader at the Textile Conservation Centre, University of Southampton and has a special interest in the contribution that object-based research and conservation approaches can make to the wider interpretation and presentation of cultural artefacts.

Fiona Cahill graduated from De Montfort University in 2002 with a degree in Restoration and Conservation. Since then she has worked for an architectural conservation company and was a project conservator for the National Trust in Liverpool. She joined the Royal Armouries as a conservator in 2004.

Susanna Conti received her art diplomas in Painting and in Weaving in 1972 and 1974 respectively. In 1975 she qualified as an art teacher in the secondary school where she taught for one year. Subsequently, she trained in tapestry conservation and obtained her diploma in Textile Conservation from the prestigious *Opificio delle Pietre Dure e Laboratori di Restauro* (OPD) in Florence in 1980. She won her position as *Capo Tecnico* of the Textile Conservation Laboratory at OPD as a result of open national competition in 1981; in 2006 she was appointed Textile Conservation Director. During her 25 years at the OPD, she has carried out conservation treatments on a wide variety of projects focused on textile and textile-related artefacts and also conducted their four-year textile conservation training course, the *Scuola di Alta Formazione* (SAF). She collaborates with state institutions and museums on research projects, displays, publications, conferences and training courses, both in Italy and abroad.

Sylvie François holds the Postgraduate Diploma in Textile Conservation from the Textile Conservation Centre (Courtauld Institute of Art, University of London). Her previous studies were in Canada where she received a Bachelor of Fine Arts (Major in Art History and Studio Arts) from Concordia University. Her early interest in textiles and costumes led her to pursue technical studies sanctioned by a Professional Collegial Diploma in Fashion from Cegep Marie-Victorin. She is currently Conservation Officer at Cirque du Soleil, an international performing arts company that has its headquarters in Montreal, Canada. In 1999, she developed their Heritage Costume Collection and, since 2000, manages this collection and the art collections. In this role, she oversees the development

and application of conservation policies and strategies.

Kathryn Gill gained a BA (Hons) in Textiles and Fashion at Manchester Polytechnic, after which she trained and worked as a textile conservator, specialising in upholstery conservation at the Textile Conservation Centre, Hampton Court Palace. In 1984 Kate moved to the USA to set up the upholstery conservation section at the Metropolitan Museum of Art. After seven years as Senior Upholstery Conservator, she took a post at the Textile Conservation Centre, University of Southampton. Kate is Senior Conservator and Lecturer, combining practical conservation (textiles and upholstered furniture) with teaching and research. She is principal contributor to and co-editor (with Dinah Eastop) of *Upholstery Conservation: Principles and Practice* (2001).

Graham Hart BSc, MSc, MIPEM, MSRP worked as a medical physicist within the National Health Service for 30 years and has for the last 15 years worked as a radiation/laser/non-ionising radiation protection adviser at the University of Bradford in the health, research, educational and veterinary sectors. Currently, Graham is a member of the Association of University Radiation Protection Officers' Technical Coordinating Committee, the Society for Radiological Protection's Non-Ionising Radiation Topic Group and an assessor for RPA 2000, an assessing body for Radiation and Laser Protection Advisers in the UK. He is also an independent radiation protection consultant.

Robert Holmes BA (Hons) is Senior Conservator of Antiquities and Fine Metalwork for the Hampshire County Council Museums and Archive Service. He has worked for the service since 1983 and has recently taken on the Keepership of the Firearms Collection. He joined the Metals Section of the Conservation Department of the British Museum in 1978, becoming a specialist in the restoration of Roman and Anglo-Saxon metalwork. Prior to joining the British Museum he took his degree in Silversmithing at Birmingham Polytechnic.

Sarah Howard BA (Hons), DipTexCons, ACR graduated from the Textile Conservation Centre in 1992 after completing the Postgraduate Diploma in Textile Conservation. After completion, she undertook a number of short-term contracts with freelance conservators and institutions such as the Victoria and Albert Museum. She joined

Hampshire County Council Museums and Archives Service in 1996 and is now Principal Conservator and Senior Textile Conservator working with their historic dress and textiles collection.

Marion Kite is Head of Furniture, Textiles and Frames Conservation at the Victoria and Albert Museum where she has worked since 1974. Her specialist discipline is textile conservation. She has published and lectured widely on many aspects of textile conservation and the conservation of organic materials associated with textile objects. During the past 20 years she has developed a particular interest in the conservation of animal products and unusual materials incorporated into textiles and dress accessories. She is co-editor with Roy Thomson of *Conservation of Leather and Related Materials*, published by Elsevier in 2005. Marion served on the Directory Board of the International Council of Museums Committee for Conservation between 1993 and 1999 and as Treasurer between 1993 and 1996. She is a Fellow of the International Institute for Conservation and currently serves on the IIC Council. She is Chairman of the Executive Council of the Leather Conservation Centre and also sits on the Council of the Museum of Leathercraft. She is a Fellow of the Royal Society of Arts and a Trustee of the Spence and Harborough Collections of Gloves administered by the Worshipful Company of Glovers of London.

Jason Maher has a degree in Archaeological Sciences from the University of Bradford and an MSc in Osteology, Palaeopathology and Funerary Archaeology from the Universities of Bradford and Sheffield. He was appointed Osteoarchaeological Technician in 1996 in the Department of Archaeological Sciences, University of Bradford. In 2000 he left the university to become an IT consultant and freelance trainer. Since then he has combined his interests in anthropology, computing and radiography particularly through the application of digital imaging solutions to archaeological problems.

Sonia O'Connor Dip Cons, FIIC, ACR trained as an archaeological conservator at the Institute of Archaeology, University of London, passing with distinction, and has worked in archaeological conservation at the National Maritime Museum, Greenwich, London; University College, Cardiff; and the York Archaeological Trust. In 1995, she joined the Department of Archaeological Sciences, University of Bradford. She now holds the post of Research Fellow in Conservation. Her research

forms part of the activities of the AHRC Research Centre for Textile Conservation and Textile Studies based at the University of Southampton in partnership with the University of Bradford. Her areas of expertise include the radiography of cultural material and she received the 2002 Nemet Award of the British Institute of Non-Destructive Testing for her work in this field.

Elizabeth E. Peacock is Professor in Conservation and Senior Research Conservator on the staff of Vitenskapsmuseum at the Norwegian University of Science and Technology (NTNU) in Trondheim, Norway. She holds a BA in Mathematics, an MAC in Art Conservation, and a PhD in Textile Science. During her conservation training she interned with a number of institutions in the USA and Europe. She is a Fellow and Council Member of the International Institute for Conservation. Elizabeth's main interests are: the interface between archaeological science, conservation science and conservation; the interaction of organic materials with the buried environment; and conservation education without borders. She has wide experience with organic archaeological materials, especially textiles and leather. Primarily this experience is with materials recovered from wet sites, but earlier in her conservation career she worked with finds from sites in the Eastern Mediterranean and Egypt. This extensive experience includes laboratory-based and field conservation, experimental and object-based research, and teaching and publishing.

Josie Sheppard has worked with costume and textile collections in museums for 25 years, specialising in fashionable and everyday dress of the last two centuries. Since 1988 she has been Curator of Costume and Textiles at York Castle Museum, where her remit includes the extensive collection of dolls. Previous posts have included working at the Warwickshire Museum, and at Worthing Museum and Art Gallery, where she was Assistant Curator of Costume.

David Starley initially trained as a metallurgist before studying Archaeological Sciences and undertaking a PhD studying steel in medieval armour (both at Bradford University). He worked in English Heritage's Ancient Monuments Laboratory before moving to the Royal Armouries, Leeds, in 1999, as Science Officer.

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Part 1

Textile X-radiography