



# CONSERVATION OF LEATHER

and related materials



Marion Kite • Roy Thomson

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Marion Kite



Roy Thomson

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*Chairman,  
The Leather Conservation Centre*

*Former Chief Executive,  
The Leather Conservation Centre*



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## Foreword

The first time I wished for a book like this was in 1957 when, as a member of the Victoria and Albert Artwork Room, I was asked to conserve sixteenth and seventeenth century gloves with beautiful embroidered cuffs. I knew little about leather. It was essential to learn about the methods of turning skins into leather and how they could be recognized. Available written information did not begin at the beginning.

It was then I met Dr Claude Spiers. Claude was a senior lecturer at the Leathersellers' Technical College in Bermondsey and he invited me to visit. There he showed me the vats in the floor where the skins were held in suspension in the various processing liquors and explained how tanning works. He then arranged a meeting with John Waterer; designer, antiquarian, author, historian and leather craftsman. John guided me through the conservation of the superfine tawed skins of the gloves and later wrote the chapter on leather for *Textile Conservation*,

published by Butterworth in 1972. It was in the same year that his *Guide to the Conservation and Restoration of Objects made Wholly or in Part of Leather* was published for the International Institution for Conservation. These are still excellent introductions but *The Conservation of Leather and Related Materials* widens the scope to the benefit of collectors, conservators, curators and anyone with responsibility for the care of leather objects. It outlines the history and development of the different types of tanning and what makes each type of skin and each type of tanning suitable for particular purposes. Most importantly, it describes how to recognize skin patterns and treatments. Finally the case studies indicate the range of treatments available for the preservation of this often overlooked segment of our cultural heritage.

Karen Finch OBE

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## Dedications



**John W. Waterer R.D.I., F.S.A.,  
F.I.I.C., 1892–1977**

### **‘FITNESS FOR PURPOSE’**

This book is dedicated to John Waterer. Although John died in 1977, his lifelong involvement with leather was such that, without the interest, influence and enthusiasm he created it is doubtful whether this book could have been written. Much loved and respected, with an ever-ready smile, he epitomized Chaucer’s words in the *Canterbury Tales* – ‘To any kind of man he was indeed the very pattern of a noble Knight.’

John was born in South London in 1892 and after leaving school was invited in 1909 to join a well-known leathersgoods company as an apprentice in their luggage department. Although John had very considerable career prospects as a talented musician,

this proved, almost by chance, to be the stepping stone to his lifetime’s work. After a break in the Navy during the Great War he rejoined his old company and became increasingly involved in the design and creation of the new ‘lightweight’ luggage, being increasingly demanded by the travelling public due to the evolution of the small inexpensive motor car and the slow but steady growth in air travel.

With the knowledge thus gained, in 1936 John joined S. Clarke & Co., a well-established but progressive travel goods manufacturer, as managing director. John was then able to fulfil his design flair but always with ‘Fitness for Purpose’ in his mind – a guiding principle throughout this life. After three exciting years came the Second World War. By then John was 47 years of age, happily married with a daughter and at the peak of his professional skill and ability.

The war years had a profound influence on John Waterer’s life. With all its attendant problems, including bomb damage, S. Clarke & Co. continued making luggage but with part of its production given over to war work. With his ever-enquiring mind, John found time – possibly during the long hours of fire watching – to begin his research into the history of leather and its early uses. This led to a well-received lecture to the Royal Society of Arts in 1942 for which he subsequently received their Silver Medal. At the same time both the government and trade association set up committees to consider the best way forward in the immediate post-war years, little realizing that the years of difficulty and austerity would linger on until well into the 1950s. Here John preached his gospel: a vision of a better future where design and fitness for purpose would be paramount, overcoming the innate conservatism of manufacturers, by encouraging them to embrace the benefits that good design would bring to the manufacturing process.

All this led to the publication in 1946 of *Leather in Life, Art and Industry*. Although in later years John wrote many further well-researched books, this book

set him up as an outstanding leather historian and authority and can truly be regarded as his magnum opus. If that was not enough, John was then instrumental in setting up the Museum of Leathercraft to enable others to see the use and evolution of leather over the ages, thereby fostering design and craftsmanship in the years to come.

John was by now conducting a worldwide correspondence on leather-related matters. In 1953 his total virtuosity resulted in his being elected to the faculty of Royal Designers for Industry. This appointment is considered the highest honour to be obtained in the United Kingdom in the field of industrial design and shows the high regard in which he was held by his contemporaries. In the same year he was also admitted to the Livery of the Worshipful Company of Saddlers, with whom he had a long, friendly and supportive association in the years that followed.

John remained as managing director of S. Clarke & Co. until the early 1960s, producing modern looking luggage designs which have stood the test of time. It was then by a turn of fate that Clarke's was acquired by the company he had joined way back in 1909! John was then 71 years 'young' but with undimmed enthusiasm and no concept of the meaning of retirement – it seems to have slipped his mind – which enabled him to give his increasing free time to further his research into leather history. This led to his realization that although there were many beautiful and historic leather artefacts there was little or no knowledge as to how they might be conserved for the benefit of future generations. After considerable research this led to his writing his *Guide to the Conservation and Restoration of Objects made Wholly or in Part of Leather*, first published in 1972, and his election as Fellow of the International Institute for Conservation.

His vision also led to the creation of the Leather Conservation Centre in 1978. The Centre is now housed in purpose-built premises in Northampton, through the generosity of the Worshipful Company of Leathersellers. John did not live to see this, but together with the Waterer/Spiers Collection, it is a fitting memorial to a very special and dedicated man whose like will not come again. The Waterer/Spiers Collection was the inspired decision of the Council of the Museum of Leathercraft, taken after John's death, to commission each year an article in leather to show the best in contemporary design, skill and workmanship. It was decided to conjoin his friend Claude Spiers – a leather chemist – who had been instrumental with John in setting up the museum during the Second World War. This annually growing collection now provides an outward and visible sign that leather

design, excellence and workmanship, which John spent his life preaching and encouraging, still prosper.

Peter Salisbury

**Betty M. Haines MBE, B.Sc., F.R.M.S.,  
F.S.L.T.C., 1925–2003**

Betty Haines, whose name is known throughout the conservation world as a writer and teacher on all aspects of collagen, skin and leather science, died following a short illness while this book was being brought together.

Betty graduated from Chelsea College of the University of London in 1945 with a B.Sc. in Botany, Chemistry and Zoology. She joined the British Leather Manufacturers' Research Association in 1946 becoming one of a line of eminent lady scientists employed by them from its foundation in 1920 to the present day. Working in the Biology Department she applied her knowledge of protein science, bacteriology and entomology in the fields of hide and skin quality and the pretanning processes. In particular she developed the field of leather microscopy first using conventional light microscopes and later with the new electron microscopes.

One application of this microscopical expertise was with the identification of archaeological material and Betty's advice was sought by major museums throughout the UK. This led to collaboration with Dr Baines-Cope of the British Museum Research Laboratory which culminated in the publication of *The Conservation of Bookbinding Leather* in 1984.

It was in 1978 while this work was being undertaken that Betty was invited to join the Trustees of the newly formed Leather Conservation Centre. She was elected Chairman of the Technical Advisory Panel in 1984, Chairman of Trustees in 1987 and President from 1999.

During this period she contributed to summer schools and wrote a series of monographs for the Centre. She also lectured to students and gave papers at professional conferences and seminars both in the UK and abroad.

The chapters prepared by Betty for this volume will, sadly, be her last written contributions in a series of publications stretching over half a century. Her deep knowledge of leather and its conservation will, however, remain in the memories of those who were privileged to know or work with her.

Roy Thomson

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## Acknowledgements

The editors wish to thank the many contributors to this volume for their hard work and patience during the editorial process. Particular appreciation is expressed to the Victoria and Albert Museum and the Leather Conservation Centre for permission to spend time on the preparation and editing of this work and to our respective colleagues there for their support.

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Thanks also must go to Carole Spring for her help in the preparation of the texts and to Stephen Kirsch for supplying an almost impossible to obtain image of a sewing machine used to sew furs and gloves.

We would both like to thank our respective spouses, John and Pat, for their unfailing help, encouragement and tolerance throughout this project.

Marion Kite  
Roy Thomson



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## Contributors

### Priscilla Anderson

Priscilla Anderson was awarded a Bachelor of Arts *cum laude* majoring in the History of Art from Yale University in 1990. She also holds a Master of Library Science from the University of Maryland and a Master of Science in Art Conservation from the Winterthur/University of Delaware program. Following internships at the Wilson Library, University of North Carolina; the Walters Art Museum, Baltimore and the University of Maryland Libraries, she worked as a conservator/rare book-binder at the Library of Congress. She is now a Special Collections Conservator at the Weissman Preservation Centre of the University of Harvard Library. She is a Professional Associate Member of the American Institute for Conservation.

### Aline Angus

Aline Angus was educated in Scotland and has an honours degree in Ancient History and Archaeology from the University of Durham. She gained a Higher National Diploma in Conservation and Restoration at Lincolnshire College of Art and Design in 1992. She has worked on ethnographic collections at the Horniman Museum in London and the Royal Albert Museum in Exeter. She was at the Royal Museum in Edinburgh for three years preparing 18c and 19c objects for the new Museum of Scotland. She has spent seven years at the Leather Conservation Centre, Northampton.

### David Brock

After studying at the University of Texas at Austin and being awarded a degree majoring in Photographic Studies at the Columbia College of Chicago,

David Brock received his first instruction in hand bookbinding from Joan Flasch and Gary Frost at the Art Institute of Chicago in 1977. In the following year he began a six year apprenticeship with William Anthony in hand bookbinding and conservation. This was followed by five and a half years as a Rare Book Conservator at the Library of Congress. In 1990 David became a conservator in private practice and ran his own business for eight years, closing it in 1998 to assume his current position as Rare Book Conservator for Stanford University.

### Anthony Cains

Anthony Cains was indentured to a London trade bookbinder in 1953. As part of his training he attended the London School of Printing where he received several prizes. During his National Service he studied under William Matthews at Guildford who recommended him to Douglas Cockerell and Sons where the foundation of his career in book and manuscript conservation was laid. He served both the British and American funded rescue teams after the Florence floods of 1966, being appointed Technical Director of the programme set up in the Biblioteca Nazionale Centrale Firenze. He was subsequently invited to design and establish a workshop in the Library of Trinity College Dublin which he ran until his retirement in 2002. He is a founding director and committee member of the Institute for the Conservation of Historic and Artistic Works in Ireland.

### Esther Cameron

After reading Archaeology at Birmingham University, Esther Cameron trained in Archaeological Conservation at Durham University, gained a Masters

degree and later went on to complete a doctorate at Oxford University. She has worked for the Wiltshire and Kent County Museums Services and for the Institute of Archaeology at the University of Oxford. She is now a freelance archaeological finds specialist working on a range of materials including leather. She is a Fellow of the Royal Society of Antiquaries of London and has served on the executive committees of the United Kingdom Institute for Conservation and the Archaeological Leather Group. She is a Trustee of the Leather Conservation Centre.

## Anthony Covington

Tony Covington is Professor of Leather Science at the British School of Leather Technology at University College Northampton. He is also Visiting Professor at Sichuan Union University, Chengdu, China and Nayudamma-Wahid Professor at Anna University, Chennai, India. He studied for Graduateship of the Royal Institute of Chemistry at Teesside Polytechnic and was awarded a doctorate at Stirling University in Physical Organic Chemistry. Before joining University College Northampton he carried out research at BLC the Leather Technology Centre for eighteen years. He is Past President of the Society of Leather Technologists and Chemists and of the International Union of Leather Technologists and Chemists' Societies. He is a Fellow of the Royal Society of Chemistry and the Society of Leather Technologists and Chemists.

## Caroline Darke

Caroline Darke graduated from St Martins School of Art with a National Diploma in Design (Fashion). Running her own business SKIMP she produced bags, belts, small leather goods and fashion accessories for major shops and stores in UK, USA, Europe and Japan. She has taught part time at Manchester College of Art, Guildford School of Art, St. Martins School of Art, Croydon College of Art and Brighton School of Art. From 1965–94 she was Associate Lecturer at London College of Fashion, from 1994–2000 Associate Lecturer and Accessories Co-ordinator at Cordwainers College and from 1995 MA Accessories course leader at Royal College of Art. In 2000 Caroline was appointed Course Director Professional Development Unit-Cordwainers at London's University of Arts.

## Laura Davies

Laura Davies graduated with a Fine Art Degree from Staffordshire University specialising in Sculpture. She then studied for a Masters degree at the Royal College of Art/Victoria and Albert Museum joint course in Conservation. During the three year duration of the course she was placed in the Applied Arts Conservation Department of the Museum of London for the practical content of the course where she gained experience with *cuir bouilli* objects. In 1999 she was awarded the Museums and Galleries Commission Student Conservator of the Year Award. After graduating she spent a year as an Objects Conservator at London's National Museum of Science and Industry. She is now a Sculpture Conservator at the Tate Gallery.

## James Dickinson

In 1968 James Dickinson was awarded a Carnegie UK/Museums Association bursary to study taxidermy. This enabled him to train at various UK, German and Swiss museums. In 1973 he was appointed Senior Conservator Natural History at the North West Museum Service, working on material from museums all over north of England. In 2001 he became the Conservation Officer Natural Sciences for the Lancashire County Museum Service. He is a Founder Member and former Chair of the Guild of Taxidermists. In 1990 he was appointed a Member of the Order of the British Empire for services to taxidermy. In 1991 he became a Fellow of the Museums Association.

## Sherry Doyal

In 1981 Sherry Doyal was awarded a City and Guilds Certificate with distinction in Conservation and Restoration Studies from the Lincoln College of Art. In 1984 she gained a post graduate Certificate in Upholstery Conservation from the Textile Conservation Centre and was subsequently engaged as a conservator of furnishing textiles and upholstery by the TCC, the Crown Suppliers, the Metropolitan Museum of Art and the Victoria and Albert Museum. From 1991–94 she was the National Trust House and Collections Manager at Ham House. From 1995 Sherry pursued her interest in ethnography and natural history conservation, first at the Horniman Museum and then Exeter City Museums.

From 1999 she combined a part time position as Natural Trust Conservator and latterly Regional Historic Properties Advisor with freelance ethnobotanical conservation. In February 2005 Sherry was appointed Deputy Head, Conservation and Collections Care at the Horniman Museum and Gardens, London. She is a Trustee of the Leather Conservation Centre.

## **Don Etherington**

Don Etherington began his career in conservation and bookbinding in 1951 as an apprentice after which he worked as a conservator for the British Broadcasting Corporation and Roger Powell and Peter Waters. Between 1967 and 1969 he was a training consultant at the Biblioteca Nazionale in Florence where he trained workers in book conservation practices after the 1966 flood. Between 1960 and 1970 he was a lecturer at Southampton College of Art in England where he developed a four year programme in bookbinding and design. From there he went to the Library of Congress in Washington DC where he served as a Training Officer and Assistant Restoration Officer. In 1980 Mr Etherington became Assistant Director and Chief Conservation Officer at the Harry Ransom Humanities Research Center at the University of Texas in Austin. In 1987 he joined Information Conservation, Inc. located in Greensboro, North Carolina where he created a new conservation division for the preservation of library and archival collections. He is now President of the Etherington Conservation Center, Greensboro, North Carolina. He is an Accredited Member of the Institute of Paper Conservation and Fellow of both the American Institute of Conservation and the International Institute of Conservation.

## **Mary-Lou E. Florian**

Mary-Lou Florian is Conservation Scientist Emerita and Research Associate at the Royal British Columbia Museum. She has a Bachelors and Masters degree in biology specialising in fungi, insects and plant anatomy. Her first introduction to conservation was as a Biologist at the Conservation and Restoration Research Laboratory at the National Gallery of Canada in the early 1960s. She later worked as a Senior Conservation Scientist in Environment and Deterioration Services at the Canadian Conservation Institute in Ottawa. In 1978 she went to the Royal British Columbia Museum in Victoria,

British Columbia as a Conservation Scientist and retired as Head of Conservation Services there in 1991. In her present capacity as Research Associate at the Museum she is studying fungal stains and archaeological wood identification. She is a Lifetime Honorary Member of the American Institute of Conservation and besides other professional excellence awards has been awarded the 125th Commemorative Medal from the Governor General of Canada.

## **Rudi Graemer**

Rudi Graemer received his early education in Switzerland and in 1953 was awarded a First Class Diploma from the National Leathersellers College in London. His wide experience in technical management in the leather trade includes work in the UK, Switzerland, Australia and in the former Belgian Congo. He returned to the UK to work with the specialist reptile and exotic leather manufacturers, T. Kinswood and Co. in 1960 from where he retired as Managing Director in 1990.

## **Betty Haines**

See dedication page xiii.

## **Robert D. Higham**

Robert Higham qualified in leather technology at the National Leathersellers College, London, in 1959 and served in tannery technical management in Bolton, Galashiels and Edenbridge until 1969. In that year he became Technical Editor of *Leather*, the international journal for that industry, becoming Editor a few years later. In addition he carried out *ad hoc* consultancy work for several UN agencies. He moved to Aberdeen in 1980 to study for the Church of Scotland Ministry where he was awarded the degree of Bachelor of Divinity. During this period he continued as Consultant Editor of *Leather* and with consultancy for UNIDO. He retired from parish ministry in 2002 having served in Berwickshire and latterly the Isle of Tiree.

## **Marion Kite**

Marion Kite studied Textiles and Fashion at Goldsmiths College School of Art where she was