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good quality of orpiment from China was available in England in the 19th century and known as "Chinese yellow."

It would have been wonderful to have a completely revised version of this book. However, it would not have been fair to the author, who has now retired, to suggest that she undertake this task. Fortunately what we do have here is a fully documented summary of our knowledge, as of 1982, of the subject of pigments in England from the 16th to the mid-19th century, and, as the author herself remarks, the book provides a basis on which the researcher can depend before pursuing the publications and other resources of the past 20 years.

The first edition of this book was a slightly altered version of Rosamond Harley's Ph.D. thesis awarded in 1967 by the Courtauld Institute of the University of London. She worked in the artist's color industry, at Winsor & Newton Ltd., from 1958 to 1973, and then for two years was chief of scientific documentation at the Canadian Conservation Institute. The balance of her career since 1975 was as senior lecturer in conservation at Gateshead Technical College, where in more recent years she was also in charge of the M.A. degree course in conservation of the fine arts.

Finally I cannot end this review without a tribute to Archetype Publications. It produces significant original publications such as the recent *The Art of All Colours: Medieval Recipe Books for Painters and Illuminators* by Mark Clarke and reprints important classics like this one. This volume is just one of many examples of this publisher's contributions to our field, for which we should all be grateful.

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BARBARA WILLS, ED., *LEATHER WET AND DRY: CURRENT TREATMENTS IN THE CONSERVATION OF WATERLOGGED AND DESICCATED ARCHAEOLOGICAL LEATHER.* London: Archetype Publications Ltd., 2001. 77 pages, softcover, $25. Available from Archetype Publications, 6 Fitzroy Square, London W1T 5HJ, or Cotsen Institute of Archaeology at UCLA, A210 Fowler Building, Box 951510, Los Angeles, Calif. 90095. ISBN 1-873132-77-8.

Leather Wet and Dry is the proceedings of a joint meeting of the United Kingdom Institute for Conservation (UKIC) Archaeological Leather Group and the Department of Conservation at the British Museum (BM) held March 23, 1998. Edited by Barbara Wills, chair of the Archaeological Leather Group and a senior conservator in the Organic Artefacts Section of the BM, it collects some information about conservation approaches to leather objects excavated from two extreme environments where organic preservation is more common—waterlogged and desiccated.

The conference was held to pull together information about conservation of leather from both waterlogged and desiccated environments. As noted in the preface, treatments for waterlogged leather often come under the rubric of other waterlogged organic materials. Treatments for desiccated leather are much less published and, as reflected in the articles, much less standardized. This situation reflects to some extent the current international development of archaeological conservation, in which there is a longer history of conservation and support by governmental institutions in northern climes where waterlogged material is more commonly found. In contrast, in many arid areas of the world where desiccated leather is more likely to be excavated (often by foreign expeditions), internal institutional support is limited and conservation is carried out in short-term programs that may accompany the excavation. All the authors in this volume did their conservation training in northern Europe and now work in northern Europe, though they may work outside this area on sponsored projects. Five of the papers discuss waterlogged leather from northern Europe, two papers discuss conservation of desiccated leather using examples from the Middle East, and the final paper describes experimental work on buried leather in England.

The papers on waterlogged leather reflect its longer history of treatment at a number of venues and showcase a number of approaches to preservation, both active and passive, that have been used over the years. Kirsten Suenson-Taylor's paper summarizes work at the Museum of London to evaluate the effectiveness of a glycerol pretreatment–freeze-drying method used for more than 20 years. This work has been previously published in detail in several articles that are individually summarized in this paper. Including it in this volume simply ensures that readers new to the literature will be aware of that previous work. Elizabeth Peacock reviews the fashions in conservation treatment of medieval waterlogged leather used at Vitenskapsmuseum in Trondheim, Norway, and describes experimental work done on leather previously treated with a variety of lanolin-based impregnants and dressings. The research resulted in a bulk retreatment of these objects with extraction using Genklene followed by impregnation with a 10% polyethylene glycol to 10% glycerol volume to volume in water combination (10%/10% PEG/glycerol). Based on this experience, the treatment for newly recovered leather was reevaluated and is now also based on a PEG-glycerol mixture followed by freeze-drying. An important aspect of this paper is not just its focus on the laboratory treatments but its discussion of the ramifications of field treatment methods and long-term storage. Iva Hovmand and Jennifer Jones describe experimental evaluation of a common pretreatment technique for waterlogged leather using disodium ethylene diamine tetra-acetic acid (2NaEDTA) to remove metal ions (especially iron) deposited in leather during burial. They used energy dispersive x-ray fluorescence (EDXRF) analysis to evaluate the mineral content of the leather and found that 2NaEDTA did remove some of the elements analyzed for. However, some of the minerals still remain in the leather and may cause deterioration in the long term. They also found that the shrinkage temperature of the leather dropped, though not below normal storage temperatures. Marquita Volken's paper summarizes the "pragmatic" approach used by the State Service for Archaeological Investigation in the Netherlands. The weakest paper in the volume, it celebrates an approach to treatment based on the human senses and experience. The technique used for waterlogged wood is slow air-drying and impregnation in 60% PEG 600. Although the evaluation techniques are not stated, the author reports that leather treated up to 30 years ago is still stable except for a little lightening of color. The author also gives a number of brief descriptions of treatments she has tried on dry leather with variable success. The final paper on waterlogged leather by Veroniqué Montembault reviews the treatments commonly used in France since the late 1970s and reports on more recent work by the Centre de Recherche sur la Conservation des Documents Graphiques to evaluate waterlogged leather treatments. The treatment currently used for waterlogged leather is impregnation with 33% PEG 400 followed by freeze-drying.

Two articles deal specifically with desiccated leather, though two others in the volume treat it in a cursory way. Barbara Wills reviews the challenges of conserving desiccated leather using examples from excavation in Sudan and in the laboratory at the British Museum. She describes experience with two broad categories of ancient dry leather: well preserved material from very dry environments, and very deteriorated material from sites that may have been occasionally wet. A real strength of this paper is its argument for a conservator's analysis of the leather to uncover information about technologies and contribute to the understanding of broader archaeological questions. She also reviews experience with on-site treatment and consolidation of dry leather with an available polyvinyl butyral (PVB) , Mowital B30H. A case study by Pippa Cruickshank describes the recovery and conservation of desiccated leather shrouds from the Jordan valley. Her honest review of the pros and cons of the success she had with the consolidants and methods used serve as good guidance for others going to work in similar environments. The limitations of the treatments and materials used in both these papers illustrate the need for research into effective consolidation and support techniques for desiccated leather that take place outside the constraints of fieldwork.

The last paper, by Glynis Edwards, gives an overview of two earthwork projects constructed in

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the 1960s to evaluate the deterioration of buried materials over time. She describes the leather that was buried at Overton Down and Wareham and gives information on where the publication of this work can be found. This paper, like the first paper in the volume, simply leads readers unfamiliar with the literature and history of archaeological leather conservation to research published elsewhere.

This book is a good overview of the recent history of conservation where many techniques were first based on craft or experience and then moved toward analytical techniques to better understand what is happening either at a microscopie or chemical level for individual objects, or over time to collections. As with most published proceedings, it is uneven, based on the experience and knowledge of each author. It will be most useful to individuals who are just beginning to work with archaeological leather who need to gain familiarity with past work. It is interesting to see how different techniques were popular in different countries.

Most techniques in archaeological conservation are developed in reaction to a need at the time a material is excavated. This happened with waterlogged leather, and it is only now, with older collections, that there is a review of the effectiveness of these techniques. For desiccated leather, it appears we are still at the reactive stage. By collecting papers on both waterlogged and desiccated leather, this book provides an opportunity to review the development of the field for one material in one area of the world. The UKIC Archaeological Leather Group, the British Museum, and Barbara Wills are to be commended for collecting this information from a number of northern European institutions and individuals. From her foreword, it is clear that Wills understood the "heterogeneous" and "individual" nature of these papers. It would be interesting to see a similar review by researchers from the Western Hemisphere: we would likely find the same pattern of information with lots of work on waterlogged leather and more sporadic attempts to preserve desiccated leather. By focusing on a single material, leather, this book clearly illustrates how conservation has evolved through fashions and by simply reacting to an immediate need. As with many other materials and treatments, now that we have more time and resources, we need to reexamine whether our earlier decisions were right.

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ACHIM UNGER, WIBKE UNGER, AND ARNO P. SCHNIEWIND. *CONSERVATION OF WOOD ARTIFACTS*. Berlin, Germany: Springer-Verlag, 2001. 578 pages, hardcover, DM 372.00. Available from Springer-Verglag Heidelberg, www.springer.de. ISBN: 3-540-41580-7.

The profession is well served by the recent release of this multiauthored publication on the conservation of wood objects from "before the Christian era to the year 2000" (p. vii). The authors' stated purpose is to present a "comprehensive source on the history of wood conservation" (p. 1) and to "systematically organize the extant literature on the conservation of cultural property made of wood" (p. vii). The book is a comprehensive publication of essential information on the nature of wood, how it can degrade, and how it can be preserved. The intended audience includes conservators and wood-conservation scientists. The work represents research performed and collected by the three authors from the Rathgen-Forschungslabor, Staatliche Museen zu Berlin, Germany; the University of Applied Sciences, Eberswalde, Germany; and the Forest Products Laboratory, University of California at Berkeley.

This publication is written in textbook fashion using a numerical system for organization. It is not intended to present new research, but rather to pull together existing work into one source, which is the book's clear strength. While readers may not necessarily find new information here, they will find material in one reference that heretofore would have been laboriously collected from a variety of publications. This is a book about wood rather than the objects