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TEXTILE CONSERVATION NEWSLETTER

Tapestry Conservation:
an Annotated Bibliography

by
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Introduction

This annotated bibliography is designed to assist conservators in locating information on specific aspects of tapestry conservation, and provide an historical overview of the development of modern practices. It is organized chronologically, as the comprehensive nature of most articles made listing by subject impossible. Out of necessity, this report is limited to English-language sources only. Tapestry conservation has been documented in almost every European language, and those sources are also of vital importance to this field. The task of bringing together such a volume of literature has been a daunting one, and omissions are inevitable. Additions to the list are gladly welcome.

1912

Marillier, H. C. 1912. *The Preservation and Care of Tapestry*. Privately printed for Morris and Company, Ltd., London.

This manuscript contains not only recommendations for tapestry conservation but also a brief history of tapestry weaving. On the topic of conservation, Marillier complained that France's traditional female tapestry repairers, or *tisseuses*, had no counterpart at that time in England. Instead, seamstresses performed restoration, often including cutting tapestries up or stitching to patches "as if they were mending stockings". If this type of repair was encountered, Marillier saw no choice but to remove weakened material and old repairs and reweave the tapestry "until the whole surface is once more strong and complete." If there was any way to save original material, however, Marillier recommended a method called *piquage*, which closely resembles the modern method of darning, or tabby mending. It appears, therefore, that the English preference for repairing tapestries to support fabrics contrasted with the French penchant for full restoration as early as the beginning of this century.

1955

Anon. 1955. The Tapestries of the Apocalypse at the Castle of Angers. *Museum* 8:2. 132.

Green, F. S. 1955. The Cleaning and Mounting of a Large Wool Tapestry. *Studies in Conservation* 2:6. 1-16.

One of the first professional articles written in the United States on the topic of tapestry conservation, it addresses the cleaning, assembly, and mounting of several fragments of an archaeological tapestry owned by the Textile Museum in Washington, D.C. Of particular interest is the early use of Orvus WA Paste (Sodium Lauryl Sulfate), the detergent of choice for many American textile conservators today. Also, wool was used as the support fabric because its sympathetic appearance and "tooth" helped bear the weight of the tapestry.

1964

The 1964 IIC Delft meeting marks the true beginning of the age of modern textile conservation literature. The original conference papers are not easy to find but for those who persevere there are these two articles written in English on the topic of tapestry conservation.

Diehl, J. 1964. The Workshop for the Restoration of Ancient Textiles, Haarlem. *Delft Conference on the Conservation of Textiles*, IIC. 105-108.

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This is an interesting history of the facility, which was set up in 1939 to care for tapestries removed from sites all over Holland at the beginning of World War I.

Fusek, J. 1964. An Attempt to Regain the Original Colour and Structure of an Old Tapestry. *Delft Conference on the Conservation of Textiles*, IIC. 109–112.

1966

Digby, G. W. 1966. The Restoration of the Devonshire Hunting Tapestries. *Victoria and Albert Museum Bulletin* 2:3. 81–92.

This article concerns four medieval tapestries, each over 35 feet wide, which were donated to the V&A in 1957. Digby recounts the challenge faced in replacing the early-twentieth-century repair yarns that were connecting the many fragments composing each tapestry. A detailed description of the restoration of three of these tapestries at the Haarlem Workshop is included.

Siegel, T. 1966. An Example of Preventative Maintenance: The Constantine Tapestry Installation. *Philadelphia Museum of Art Bulletin*. 143–5.

1967

Bellinger, L. 1967. Preliminary Report on the Cleaning of the Mazarin Tapestry. *ICOM Report* 67:4.

Silver threads on this tapestry were detamished with a thiourea preparation.

1968

Jarry, M. 1968. The Restoration of the Malta Tapestries by the Tapestry Repair Workshop of the Mobilier National, Paris. *Museum* 21:4. 301–304.

Previous treatments of these tapestries are outlined, together with washing, mothproofing, and reweaving.

Rice, J. W. 1968. How Humidity May Affect Rug, Tapestry, and Other Textile Collections. In *Principles of Textile Conservation Science* IX. 53–56.

The article defines terms dealing with humidity, and explains the cause of bubbling in lined tapestries and rugs.

1969

Finch, K. 1969. Note on the Damaging Effect of Flameproofing on a Tapestry Hanging. *Studies in Conservation* 14. 132.

A brief description of damage caused on a 1950s tapestry from the application of a crystalline salt based on ammonium sulfate, which had combined with humid air to form strong acid products.

1970

Pow, C. 1970. The Conservation of Tapestries for Museum Display. *Studies in Conservation* 15. 134–153.

In this account we learn several interesting things: Velcro was introduced by the V&A in 1970 in place of a sleeve or rings; 1960s repairs consisted of reweaving, stitching to backing, and synthetic resins adhesion to a woven support; A solution of 4% solution of Lissapol N (nonionic surfactant) in deionized water was used for wetcleaning; tapestries were draped over a rod to dry because they were considered too thick to dry safely on plastic without risking mould growth; and drycleaning with white spirits or perchloroethylene

was recommended if colors bled in water. An excellent A to Z of tapestry conservation standards of the time.

1972

Anon. 1972. Drycleaning's Delicate Touch. *DuPont Magazine* 3.16–19.
Applications of Valclene fluorocarbon drycleaning solvent on three tapestries in the Museum für Kunst und Gewerbe, Hamburg are described.

Diehl, J. and F. Visser. 1972. Tapestries in *Textile Conservation*. Leene, J. E., ed. Smithsonian Institution, Washington, D.C. 153–163.
This text book is the offspring of the 1964 IIC conference held in Delft, considered to be the first modern conference of textile conservators. The chapter on tapestries outlines recommended treatments for cleaning and repairs, including both restoration (reweaving) and conservation (couching of weak areas onto support fabric). Readers are warned to never treat tapestries by touching them up with paint, cutting up one to repair another, or passing threads from the back to the front in order to display the brighter colors preserved on the reverse. Adhesive treatment, however, was still acceptable.

Digby, G. W. ed. 1972. *The Devonshire Hunting Tapestries*. London: Victoria and Albert Museum.

Kajitani, N. 1972. Technical Notes. *Metropolitan Museum Journal* 56. 97–103.
A brief yet detailed technical breakdown of the structural analysis of a medieval tapestry with knotted pile and metal threads.

1973

Columbus, J. V. 1973. Tapestry Restoration in the National Gallery. *Bulletin of the American Institute for Conservation of Historic and Artistic Works* 13:2. 65–73.
Considered by many to be the father of American tapestry conservation, Columbus's seminal article outlines the removal of old lining materials; vacuuming through a fiberglass screen; examination and removal of harmful old repairs; testing yarns for colorfastness; preparation for washing; washing; drying; repairs in the form of reweaving; replacement of galons; strapping; lining (dust cover); and a Velcro hanging system. The use of glycerin and acetic acid as wash additives is uncommon today.

Grossi, B. 1973. Repair Shop for Tapestries. *CIBA Review* 3, 33–35.
The Pontificia Fabbrica degli Arazzi in the Vatican was first set up 1710, passed into public ownership in 1870, and was reopened in 1916 by Pope Benedict XV. At the time this article was written, tapestries were washed in softened water with soapwort (*radix saponariae officinalis*). Full restoration using working drawings followed.

Reeves, P. 1973. Alternate Methods of Hanging Tapestries. *Bulletin of the American Institute for Conservation of Historic and Artistic Works* 13:2. 86–98.

1974

Fikioris, M. 1974. Techniques for Mounting a Wool Tapestry. In *Mounting Techniques*. Survey Report, the Henry F. du Pont Winterthur Museum, Winterthur, DE.

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This survey of mounting techniques used by North American and European textile conservators shows a greater range of methods than are currently in use. Today, for example, mounting full-sized tapestries by sewing them to a fabric-covered strainer is rare, unless the tapestry can no longer bear its own weight. Other techniques used by participants of this survey, such as suspending tapestries by a pole or rings, are also now outdated.

1975

Reeves, P. 1975. Conserving Tapestries with Volunteer Energy. *Curator* 18:3. 182–191.

The recently merged Fine Arts Museums of San Francisco developed tapestry storage and workroom facilities, staffed by volunteers, to conserve their collection of over 100 tapestries.

1976

Anon. 1976. Wire Cloth Cures Tapestry "Hang-up" Problems. *Technology & Conservation* 1: Spring. 7–17.

The solution presented in this paper for raising, hanging, and lowering a tapestry uses stainless-steel wire mesh.

1977

Nancarrow, C. 1977. Conservation of Chinese silk tapestries. *Arts Victoria* 3:5. 13–15.

Lemberg, M. 1977. The Problem of Brown Wool in Mediaeval Tapestries: The Restoration of the Fourth Caesar Tapestry. *Studies on Textile History. Papers given in memory of Harold B. Burnham. Ontario, Royal Ontario Museum.* 178–183.

1978

Block-Bolten, I. 1978. Complex Problems in Conservation: A Flemish Tapestry. *Rotunda* 11:3. 20–25.

Marko, K. 1978. Experiments in Supporting a Tapestry Using the Adhesive Method. *Conservator* 2. 26–29.

This article contains a case study of a 1966 adhesive-coated, nylon-net treatment using copolymer polyvinyl acetate and polyvinyl caprate (Vinamul 6525). When reexamined in 1973, adhesion was found to have deteriorated, so it was decided to remove the old net with methylated spirits and remount the tapestry on new Dakron polyester leno-weave net with an emulsion of vinyl acetate and vinyl maleate (Mowliith DMC2, Mowliith DM5 and water). Some support stitching was done after adhesion, and the tapestry was given a dust cover and Velcro.

Reynolds, M. J. 1978. Another Method of Mounting a Tapestry Exhibition: Musée Royaux d'Art et d'Histoire, Brussels. *The Conservator* 2. 30–31.

The method of hanging tapestries is presented, consisting of stitching studded webbing to the top of the tapestry and then nailing it onto a wooden rod.

1979

The following five articles can all be found in a compilation known simply as *Acts*, which contains papers on both tapestry history and conservation given at a

conference in San Francisco in November 1976.

Hefford, W. 1979. "Bread, Brushes, and Brooms": Aspects of Tapestry Restoration in England, 1660–1760. *Acts of the Tapestry Symposium*, November 1976. The Fine Arts Museums of San Francisco, California. 65–75.

This paper provides fascinating background into the history of tapestry restoration that begs the question "how do tapestries survive at all?"

Kajitani, N. 1979. The Preservation of Medieval Tapestries. *Acts of the Tapestry Symposium*, November 1976. The Fine Arts Museums of San Francisco, California. 45–63.

This is a comprehensive study which, in the words of the author, "emphasizes objective information based on practical scientific and technical work."

Lundgren, H. P. 1979. Tapestry Wools, Ancient to Modern. *Acts of the Tapestry Symposium*, November 1976. The Fine Arts Museums of San Francisco, California. 21–28.

Masschelein-Kleiner, L. 1979. Dyeing Techniques of Tapestries in the Southern Netherlands During the Fifteenth and Sixteenth Centuries. *Acts of the Tapestry Symposium*, November 1976. The Fine Arts Museums of San Francisco, California. 29–44.

Thurman, C. M. 1979. Tapestry: The Purposes, Form, and Function of the Medium From Its Inception Until Today. *Acts of the Tapestry Symposium*, November 1976. The Fine Arts Museums of San Francisco, California. 3–19.

1980

Anon. 1980. *The Conservation of Tapestries*. Research report, Textile Conservation Centre, Surrey.

Finch, K. 1980. Some Notes on the Care of Tapestries. *Museums Journal* 80:1. 40–41.

Finch, K. 1980. *The Conservation of Tapestries*. Research report, Textile Conservation Centre, Hampton Court Palace, Surrey.

Little, S. 1980. Aubusson tapestry: gift maps National Capital Region. *CCI Journal* 4: Spring. 30–35.

This article addresses the cleaning and remounting of a modern tapestry.

Although the title of the following book is in Italian, it contains many articles in English on various textile conservation subjects, including tapestries.

Columbus, J. V., and B. A. Miller. 1980. Treating a Tapestry Containing Tarnished Silver. *Conservazione e Restauro dei Tessili*, papers given at the International Conference on the Conservation and Restoration of Textiles, Como, October 13–18, 1980. Centro Italiano per lo Studio della Storia del Tessuto, Milan. 168–172. As its title suggests, this article talks about cleaning tapestries containing metal thread using an electrochemical reaction. The tapestry was washed on aluminum screening using a 5% solution of sodium chloride (to carry the charge) and .5%

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Orvus WA Paste. This resulted in the removal of tarnish from the metal threads.

de Graaf, A. J. 1980. Tensile Properties and Flexibility of Textiles. *Conservazione e Restauro dei Tessili*, papers given at the International Conference on the Conservation and Restoration of Textiles, Como, October 13–18, 1980. Centro Italiano per lo Studio della Storia del Tessuto, Milan. 54–61.

This paper contains excellent scientific information behind how tapestries respond to exhibition and handling.

Finch, K. Changing Attitudes—New Developments—Full Circle. 1980. *Conservazione e Restauro dei Tessili*, papers given at the International Conference on the Conservation and Restoration of Textiles, Como, October 13–18, 1980. Centro Italiano per lo Studio della Storia del Tessuto, Milan. 82–86.

We can learn as much about the evolution of tapestry conservation from looking back at Karen Finch's 1980 article as she learned by evaluating the twenty years prior to writing it. In addition to general comments, this article has a detailed description of the reversal of a Vinumun resin adhesive treatment on a 17th-century Soho tapestry done in or around 1960. Other past adhesive treatments, along with their relative success, are discussed.

Smith, L. M. Conservation Practices at the Museum of Fine Arts, Boston. 1980. *Conservazione e Restauro dei Tessili*, papers given at the International Conference on the Conservation and Restoration of Textiles, Como, October 13–18, 1980. Centro Italiano per lo Studio della Storia del Tessuto, Milan. 251–258.

This article discusses textile conservation procedures at the MFA, briefly mentioning that tapestries were rewarping and rewoven if losses were small and stable; larger losses were usually reinforced with ribbed fabric.

1981

Bullock, M. 1981. Tapestry Restoration at the Isabella Stuart Gardner Museum. *Textile Conservation Group Newsletter* 3:7. 2–3.

Finch, K. 1981. Problems of Tapestry Preservation. *Tecniche di Conservazione degli Arazzi*, Proceedings of the meeting in Florence. 39–45.

Marko, K., V. Blyth, and J. Kendall. 1981. Three Methods of Handling and Washing Large Tapestries. *The Conservator* 5. 1–8.

Marko describes the large washing and drying cylinder built for tapestries at the V&A in the late 70s to overcome a lack of floor space. Blyth tells how the Burrell Collection had a 5' x 14' aluminum-surface wash table built based on one at the V&A facilities at Osterley Park. Kendall describes the setup of temporary washing facilities on the lawn at Hatfield House to remove an old adhesive treatment.

1982

Anon. 1982. The Art of Conservation: a Look Behind Closed Doors; Conserving a Tapestry Collection. *Fiber Arts* Jan/Feb. 48–49.

Columbus, J. V. 1982. Tapestry Wet Cleaning Facility. *SSCR Newsletter* 40. 11–12. Describes the newly built wetcleaning facility for tapestries at the National Gallery of Art, Washington, D.C.

De Carbonnel, K. 1982. Remounting of the Tapestry Cat. No. 1. *Textile Museum Journal* 21. 109–110.

Finch, K. 1982. Problems of Tapestry Conservation. *V&A Conservation Newsletter* 16: Winter. 40–43.

This research report discusses the removal of PVA adhesive from an English Chinoiserie tapestry, and the method used for the removal of a heavy nylon net held in place with a thermoplastic adhesive.

Hottelet, A. 1982. Textile Conservationists Geert Meert and Alex Dircken. *Needle Arts* 13: Summer. 18–20.

The conservation of late-18th-century French tapestries at the Wadsworth Atheneum in Hartford, Connecticut, by two Belgian textile conservators is described.

Maran, M. 1982. Tapestry Conservation at the Palace of Holyrood House, Edinburgh. *SSCR Newsletter* 40. 13–14.

The program begun in 1981 for the conservation of Holyrood House's large collection of tapestries is described.

1983

Drysdale, L. 1983. Conservation of a 16th-Century Flemish Tapestry in the Poldi Pezzoli Museum, Milan. *V&A Conservation Newsletter* 17: Spring. 34–39.

Putnam, G. 1983. *The Conservation of Tapestries*. Research report, Textile Conservation Centre, Hampton Court Palace, Surrey. 10–14.

Chapters include: examination of tapestries prior to conservation; taking a tapestry down; equipment in tapestry conservation department; a detergent formulation for washing historic tapestries; washing a tapestry; consideration of colour changes in the conservation of tapestries; conservation methods and techniques; lining a tapestry; hanging a tapestry; and vacuum-cleaning hanging tapestries.

1984

Bennett, A. G. 1984. Recycling the Apocalypse: a Reconstruction Using Fourteenth-Century Fragments.

Bulletin de liaison du centre international d'étude des textiles anciens. 1–2:59–60. 17–23.

Bennett associated five 14th-century tapestry fragments that were included in a 19th-century tapestry with the famous mediaeval *Apocalypse of Angers* set.

Finch, K. 1984. *Tapestry Conservation Report*. Research report, Textile Conservation Centre, Hampton Court Palace, Surrey.

Keyserlingk, E. 1984. Backing Research Project. *Textile Conservation Newsletter* fall. 9–11.

Putnam, Greta, Ed. 1984. *The Conservation of Tapestries*. Research report, Textile Conservation Centre, Hampton Court Palace, Surrey.

Smith, L. M. 1984. The Exception to the Rule: Conservation of a Tapestry Fragment.

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Textile History 15:2. 209–218.

Smith explains that conservation policies at the MFA Boston were less formalized for tapestries than other textiles. The general policy was to couch weak areas to fabric and not to replace missing elements. Dyed pieces of rep fabric would be placed behind larger areas of loss. In the case of a 15th-century fragment called *Penelope at her Loom*, however, a more sympathetic repair in the form of a woven inlay was chosen.

The 1984 IFROA volume is not widely found outside of Europe, however a list of some English-language articles it contains appears below.

Bosworth, D. 1984. The Problems of Ethics and Aesthetics. *Seminar International la Restauration et la Conservation des Tapisseries*. Paris: IFROA. 102–103.

Cousens, S. 1984. The Effect of Old Repairs on the Choice of Conservation Treatment of Tapestries. *Seminar International la Restauration et la Conservation des Tapisseries*. Paris: IFROA. 138–142.

Finch, K. 1984. Evolution of Tapestry Repairs: A Personal Experience. *Seminar International la Restauration et la Conservation des Tapisseries*. Paris: IFROA. 125–132.

Finch, K. 1984. Special Problems. *Seminar International la Restauration et la Conservation des Tapisseries*. Paris: IFROA. 144–146.

Textile Conservation Centre. 1984. Lining a tapestry. *Seminar International la Restauration et la Conservation des Tapisseries*. Paris: IFROA. 81–84.

Textile Conservation Centre. 1984. Taking a Tapestry Down from the Wall. *Seminar International la Restauration et la Conservation des Tapisseries*. Paris: IFROA. 85–86

Textile Conservation Centre. 1984. Hanging a tapestry. *Seminar International la Restauration et la Conservation des Tapisseries*. Paris: IFROA. 87.

Textile Conservation Centre. 1984. Equipment in the tapestry conservation department. *Seminar International la Restauration et la Conservation des Tapisseries*. Paris: IFROA. 96–97.

The 1984 ICOM-CC meeting was the site of several important presentations concerning tapestry conservation, including the three below.

Masschelein-Kleiner, L., and J. De boeck. 1984. Contribution to the Study of the Conservation of Monumental Tapestries. *Proceedings of the Seventh Triennial Meeting*, Copenhagen. ICOM Committee for Conservation. 84.9.33–84.9.37. These two authors from the Royal Institute of Cultural Heritage in Brussels state that conservation choices were evaluated according to four criteria: aesthetics, strength, cost, and problems. The result was that very few tapestries are fully rewoven. The preferred method was consolidating to linen patches with occasional reweaving of small, well-documented areas. After repairs, tapestries were strapped for support and lined for protection.

Ordoñez, M. and A. Ordoñez. 1984. Evaluation of Mounting Techniques Used on Vertically Hung Textiles. *Proceedings of the Seventh Triennial Meeting*, Copenhagen. ICOM Committee for Conservation. 84.9.38–84.9.41.

This study asked the following questions: what properties are needed in a good backing fabric; which support method creates the least strain and distributes the strain as evenly as possible; which stitches are best in attaching backings; what arrangement of stitches is best; which combinations of techniques and materials offer best support; and how can strain from vertical exhibition be measured. Test results showed that vertical rows of stitching caused the greatest stress with all other methods of stitching producing little or no distortion.

Weiland, E. 1984. A 15th Century Tapestry of Nürnberg: The Different State of the Two Halves of One Piece, Which Had Been Divided in the 19th Century. *Proceedings of the Seventh Triennial Meeting*, Copenhagen. ICOM Committee for Conservation. 84.9.55–84.9.56.

These two fragments were wetcleaned with a 5% solution of Nekanil W in demineralized water before repairs, which consisted of rewarping and reweaving. In one case, weak original linen warps were strengthened by wining fine cotton thread around them before new weft was inserted. The two halves remained separate because they belong to two different museums, and because of concern over stress at the attachment point.

1985

Delmercel, G. and A. Volckaert. 1985. The Royal Manufacturers De Wit Today. In *Flemish Tapestries, Five Centuries of Tradition*. Mechelen: Stichting De Wit Mechelen.

Hidden at the back of the book, this chapter tells the history of the Royal Manufacturers De Wit in Mechelen, Belgium, and its development as a conservation facility.

Finch, K. and G. Putnam. 1985. Tapestries. In *The Care and Preservation of Textiles*. London: B. T. Batsford Ltd. 74–91.

The chapter on tapestries is still one of the best general descriptions of the processes of tapestry conservation, albeit from a European point of view. Little is mentioned about stitched repairs, however thorough descriptions of applying a full, linen support lining and Velcro hanging system are provided.

Finch, K. 1985. The Textile Conservation Centre: Tapestry Seminar—Paris 1984. *V&A Conservation Newsletter* 24. 19–24.

Landi, S. 1985. *The Textile Conservator's Manual*. London: Butterworths.

This is the most comprehensive text book for students of tapestry conservation, although information is scattered throughout and can be easily overlooked. All major methods are described, with a bias toward full-linings.

1986

Anon. 1986. The *Apocalypse of Angers*. *HALI* 25:30. 30–33.

This article reviews the 1982 campaign of cleaning, relining and restoration.

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Trendall, K. 1986. The Cleaning and Restoration of an Eighteenth Century Tapestry Using Traditional Materials. *ICCM Bulletin* 12:1-2. 77-81.
The cleaning and washing of this tapestry at the Hamilton City Gallery in Australia is described, including the decision to use fustic, indigo and madder to dye wool repair yarns.

1988

Bauer, R. 1988. Restoration or Conservation of Tapestries in the Kunsthistorisches Museum in Vienna. Translation Bureau No. 3240849. Ottawa: Department of the Secretary of State of Canada.

Biddulph, F. 1988. Point Counterpoint: Behind the Scenes at Hatfield House, Hertfordshire, Skilled Volunteers Conserve the Finest Early 17th-Century English Tapestries. *Traditional Interior Decoration*. 108-116.

Cooke, W. D. and D. Howell. 1988. Diagnosis of Deterioration in a Tapestry Using Scanning Electron Microscopy. *The Conservator* 12. 47-50.
This is a report of a study into the roughness of tapestries and whether chemical softeners could be used to improve their feel. Roughness seemed to be more concentrated in portions of tapestries that were faded, suggesting that roughness, or the presence of broken ends of fiber bundles, is probably caused by a combination of photodegradation and photo-induced iron mordant damage. The conclusion was that the application of a softener would not eliminate the cause of roughness, would reduce the remaining strength of the damaged areas due to the lubrication effect, and would accelerate the loss of the damaged weft during subsequent conservation activities.

Dolcini, L. and G. Bacci. 1988. Consolidation and Reconstruction of Tapestry Fabric: Technical and Critical Problems. Translation Bureau No. 3240850. Ottawa: Department of the Secretary of State of Canada.

Flury-Lemberg, M. 1988. *Textile Conservation and Research*. Bern: Abegg-Stiftung.

Howell, D. 1988. Metal Thread Cleaning at Hampton Court Palace. *Conservation Today*, Preprints for the UKIC 30th Anniversary Conference, October 10-14 1988. 36-37.
This paper describes the structure of corroded metal threads. Cleaning was done with a solution of 2% thiourea and 3% formic acid in acetone. SEM images showed this removed corrosion and left the gold surface visible. Textile materials were soaked in the solution and tested for tensile strength, and were not seen to be effected.

Landi, S. 1988. 25 Years in Conservation. *Conservation Today*, Preprints for the UKIC 30th Anniversary Conference, October 1988. 31-33.

Mancinelli, F. 1988. Conservation of Tapestries in the Vatican Museums. Translation Bureau No. 2934696. Ottawa: Department of the Secretary of State of Canada.

Ward, S. and P. Ewer. 1988. Tapestry Conservation at Biltmore House. *International Journal of Museum Management and Curatorship* 7. 381-388.

Yardley-Jones, A. 1988. Preliminary Treatment of a Sixteenth Century Tapestry. *Textile Conservation Newsletter* Fall. 23–24.

The treatment of an early-sixteenth-century Flemish tapestry is described, from the removal of some of the 1904 repairs, to thorough testing for fugitive dyes. Wetcleaning, reweaving, and "complete lining" would follow.

1989

Chevalier, P. and J. Merrit. 1989. Tapestry Restoration and Conservation. *Hali* 11:4. 103.

The distinction between restoration and conservation are explained for a general audience, with a warning that "in some eastern European countries" heat-gluing was still in use.

Ewer, P. 1989. Tapestry Conservation Project—Biltmore House. *Textile Conservation Newsletter* Spring. 11–14.

Simon, A. 1989. Restoration of the Rubens Tapestries of Cologne Cathedral. Translation Bureau No. 3623308. Ottawa: Department of the Secretary of State of Canada.

Because of the excellent distribution of this next book by its publishers, The Getty Conservation Institute, many have benefited from the information it contains. Eight of the articles are described here.

Brutillot, A. 1989. Conservation of a Fifteenth-Century Tapestry from Franconia. *The Conservation of Tapestries and Embroideries*, Proceedings of Meetings at the Institute Royal du Patrimoine Artistique, Belgium, September 1987. California: the Getty Conservation Institute. 75–79.

When washing is not a possibility, tapestries such as this German example can still be thoroughly cleaned. Brutillot describes a method of tweezing and vacuuming to remove dirt, dust, and mildew, before couching weak areas to wool patches.

De boeck, J., M. De Bruecker, C. Carpentier, and K. Housiaux. 1989. The Treatment of Two Sixteenth-Century Tapestries at the Institut Royal du Patrimoine Artistique. *The Conservation of Tapestries and Embroideries*, Proceedings of Meetings at the Institute Royal du Patrimoine Artistique, Belgium, September 1987. California: the Getty Conservation Institute. 113–118.

Both of these tapestries were too weak to be immersed, but were filthy and required cleaning. Damp sponges were applied to the surface and frequently rinsed, with satisfactory results. Linen support patches were attached using spaced support stitching with silk thread, and more concentrated tabby couching with silk and wool was done in areas of loss. A light-weight linen dust cover was then applied. This treatment aimed to provide the large-scale support of a full lining while leaving the stronger parts of the reverse uncovered.

Dolcini, L. 1989. The Tapestries of the Sala dei Duecento in the Palazzo Vecchio. *The Conservation of Tapestries and Embroideries*, Proceedings of Meetings at the Institute Royal du Patrimoine Artistique, Belgium, September 1987. California: the Getty Conservation Institute. 81–87.

Conservators at the Palazzo Vecchio developed a method of documenting the

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current state of conservation and location of damage and deterioration. A number was assigned to each area according to the following criteria: 1 slight wear; 2 more severe wear; 3 total loss of wefts; and 4 total loss of wefts and warps. A color was used on a diagram to indicate the location of each fiber type, and when this diagram was overlaid with a picture of damaged areas, conservators were able to see the relationship between types of damage, fiber, and color.

Finch, K. 1989. Tapestries: Conservation and Original Design. *The Conservation of Tapestries and Embroideries*, Proceedings of Meetings at the Institute Royal du Patrimoine Artistique, Belgium, September 1987. California: the Getty Conservation Institute. 67–74.

In this work, Finch discusses some of the factors that lead to distortion of historic tapestries, such as poor-quality repair materials, patching with pieces of other tapestries, myopic observation of the overall design, and the boredom of working on such large objects. She describes how her choice in the 1950s of using linen support patches to stabilize a tapestry was considered radical at the time. Removing old distorted repairs and couching the tapestry in rows to the support fabric with a neutral thread began to replace the then-standard practice of rewarping and reweaving. This patching technique evolved into the full-support lining associated today with England.

Hutchison, R. B. 1989. *Gluttony and Avarice: Two Different Approaches*. *The Conservation of Tapestries and Embroideries*, Proceedings of Meetings at the Institute Royal du Patrimoine Artistique, Belgium, September 1987. California: the Getty Conservation Institute. 89–94.

The contrast between two very different tapestry conservation treatments undertaken at the Cathedral of St. John the Divine in New York are discussed. While *Gluttony* received the majority of its repairs in the form of spaced darning within the structure of the tapestry, *Avarice* required a full-support lining. *Gluttony* got straps and then a dust cover, while *Avarice* was given a lighter-weight dust cover only. Hutchison stressed that the individual needs of each tapestry must be considered, including local or regional factors to which each tapestry has been exposed.

Kajitani, N. 1989. Conservation Maintenance of Tapestries at the Metropolitan Museum of Art, 1987. *The Conservation of Tapestries and Embroideries*, Proceedings of Meetings at the Institute Royal du Patrimoine Artistique, Belgium, September 1987. California: the Getty Conservation Institute. 53–65.

This article outlines the tapestry conservation program at the Metropolitan Museum, from management and administrative considerations, to washing, restoration, hanging preparation, and housekeeping. Of particular interest is Ms Kajitani's thorough breakdown of restoration (reweaving) and conservation (local stabilization using auxiliary fabrics) procedures, including guidelines for selecting the appropriate treatment.

Maes, Y. 1989. The Conservation/Restoration of the Sixteenth-Century Tapestry *The Gathering of the Manna*. *The Conservation of Tapestries and Embroideries*, Proceedings of Meetings at the Institute Royal du Patrimoine Artistique, Belgium, September 1987. California: the Getty Conservation Institute. 103–112.

Maes begins this paper by pointing out that private conservation facilities such as the Royal Art Tapestry Workshop Gaspard De Witt often were able to spend only

10 to 25 percent of the time public institutions are allowed for conserving tapestries. While initially this seems like a restriction, Maes argues that it has actually provided conservators with the freedom to develop new hybrid treatments. Repairs to *the Gathering of Manna*, consisting of couching to large support panels, are thoroughly described.

Marko, K. 1989. Two Case Histories: A Seventeenth-Century Antwerp Tapestry and an Eighteenth-Century English Soho Tapestry. *The Conservation of Tapestries and Embroideries*, Proceedings of Meetings at the Institute Royal du Patrimoine Artistique, Belgium, September 1987. California: the Getty Conservation Institute. 95–101.

In the first case history, a 1978 treatment using painted patches and adhesive was reversed with dry-and wetcleaning. The painted patches were replaced with cotton ribbed fabric, and repairs to silk areas were made with cotton thread on linen support patches. The author mentions having used several techniques over the years to support weak silk, including laid-couching, rows of stitching passing over and under several warps at a time, and replacing silk repair thread with polyester. In the second case study, a strand each of silk and polyester were used, with the goal of combining the strength of the later with the quality of the former.

1991

Boring, M. and P. Ewer. 1991. Surfactant Comparison Test. *Proceedings of the AIC Paintings and Textiles Specialty Groups Joint Session*, Nineteenth Annual Meeting, Washington, D.C. 41–61.

This paper defines cleaning, as well as explaining surfactant classification, the difference between surfactants and detergents, how to choose a surfactant, test methods, cleaning procedures, and a discussion of cleaning results.

Gates, S. 1991. One Hundred Anatolian Flatweaves: Conservation for Exhibition, Travel, and Storage. *The Textile Museum Journal* 1990–1991. 65–76.
The technique described in detail here is almost identical to the English method of full tapestry lining.

Hansen, E. F., and S. Dereljan. 1991. Conservation I: Effects of Wet Cleaning on Silk Tapestries. *Museum Management and Curatorship* 10:1. 93–96.
This paper describes tests in which two different 18th-century silk threads were tested for tensile strength before and after wetcleaning. The belief of most tapestry conservators that washing in water is beneficial to most tapestries is backed by the results of this study.

Hutchison, B. 1991. From Restoration to Conservation: Parallels Between the Traditions of Tapestry Conservation and Carpet Conservation. *The Textile Museum Journal* 1990–1991. 9–12.
An intriguing look at the beginnings of tapestry conservation in the United States.

Simpson, L. P. 1991. Abrasiveness of Certain Backing Fabrics for Supporting Historic Textiles. *JAIC* 30. 179–185.

Windsor, D. 1991. A View From the Top: Reinstallation of the Rhode Island State House Tapestries. *The Textile Specialty Group Postprints*, Nineteenth Annual

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Meeting, Albuquerque, NM. 7–16.

Tapestries are often hung in hard-to-reach places, and this article describes how a set of ten early-twentieth-century Baumgarten tapestries were fitted with vertical straps and perimeter supports of Velcro-compatible fabric, and raised and lowered into place with the aid of pulleys.

1992

Bennett, A. G. 1992. *Five Centuries of Tapestry: The Fine Arts Museums of San Francisco*. San Francisco: The Fine Arts Museums of San Francisco and Chronicle Books.

This book was first issued in 1976 in conjunction with the exhibition of the same name. It was one of the first to address the concerns that so many major art museums in the United States had about their collections of European tapestry, which were rapidly aging.

Borg-Clyde, N. 1992. The "Roman de la Rose" Tapestry. In *the Art of the Conservator*. A. Oddy, ed. London: British Museum Press. 151–162.

Blyth, V. 1992. Restoration of the Unicorn Tapestry. *SSCR Journal* 3:2. 10–11.
Repairs of this 15th-century Flemish tapestry begun in 1984 and consisted of removing some of the older repairs and filling in the areas by horizontal warp couching (also called self couching or spaced tabby).

Derelian, S. 1992. Wet Cleaning of a Silk Tapestry. *Silk*, Harpers Ferry Regional Textile Group, 11th Symposium, Washington, D.C.

Landi, S. 1992. Modifications to Tressels and Frames. *UKIC Conservation News* 47: March. 26.

1993

Ewer, P., C. C. McLean, and R. Paar. 1993. Pre-Program Textile Conservation Internships. *AIC Textile Specialty Group Postprints*, Twenty First Annual Meeting, Denver, CO. 65–77.

This article includes an outline for a training program and instructions on constructing a cotton sateen dust cover.

Hartog, F. 1993. Tapestry Linings. *Conservation News* 51. 48–49.

This is a report of tests comparing the dustproofing ability of four fabrics for use in lining tapestries using a vacuum table: fine linen, cotton sateen, waxed cotton cambric, and downproof cotton cambric.

Jacobiec, W. 1993. Treatment of a 16th-Century Tapestry. *CCI Newsletter* 12. 1–3.

Maes, Y. 1993. The Conservation Treatment of the Tapestries of the Patrimonio Nacional in *Golden Weavings, Tapestries of the Spanish Crown*. Malines: Gaspard de Witt Foundation. 114–121.

Hidden within this exhibition catalog is a thorough description of conservation practices at the Royal Manufacturers De Witt, including their aerosol-suction table for cleaning and drying tapestries. Three methods of repairs are outlined: restoration (reweaving); conservation (stitching a linen patch to weak areas in a check pattern before couching down loose elements); and integration/conservation

(warp couching in a spaced tabby pattern).

Maran, M. 1993. The Conservation of a 16th Century Flemish Tapestry Fragment. *SSCR Journal* 4:3. 15–17.

This tapestry was wetcleaned with a solution of Synperonic N and sodium carboxymethylcellulose in deionized water before receiving a full linen scrim, or support lining. Wool yarn was used to consolidate areas of lost wool; cotton thread for lost silk; and Guttermans polyester thread for slits. Missing warps were replaced with custom-dyed wool yarn stitched to the lining. A cotton-sateen dust cover was placed over the scrim.

Marko, K. 1993. All or Nothing—or Something: A Flexible Approach to Tapestry Conservation. *Compromising Situations: Principles in Everyday Practice*. Preprints, UKIC, London. 33–34.

Pertegato, F. 1993. Tapestry Restoration : a Proposed Method. Translation Bureau No. 3807845. Ottawa: Department of the Secretary of State of Canada.

This article describes a departure taken from the procedures usually followed at the Centro Restauro Manufatti Tessili (Centre for the Restoration of Textile Artifacts) in Milan.

Prince, H. 1993. Textile Conservation Work on a Large Tapestry. *Alberta Museums Review* 19:1. 43–44.

The following volume of *Studies in the History of Art* contains two conservation articles given at a symposium in honor of Joseph V. Columbus, who retired from the National Gallery of Art in 1989.

Masschelein-Kleiner, L. 1993. Study and Treatment of Tapestries at the Institut Royal du Patrimoine Artistique. *Conservation Research: Studies of Fifteenth- to Nineteenth-Century Tapestry*. National Gallery of Art, Washington, *Studies in the History of Art* 42. 71–77.

Conservation of tapestries began at the Institut Royal du Patrimoine Artistique in the early 1970s, at which time classic reweaving techniques were used. By the time this article was written in 1993, conservation treatment had become the norm. Masschelein-Kleiner gives five reasons for this change: incompatibility of new wool yarns with old ones; tension at sites where new warps were anchored; uneven fading of original and new material; difficulty in reversing modern reweaving treatments; and uncertainty of original image in areas that were completely missing. More explanations of material and technique preferences are given.

Kajitani, N. 1993. Conservation of *Courtiers in a Rose Garden*, a Fifteenth-Century Tapestry Series. *Conservation Research: Studies of Fifteenth- to Nineteenth-Century Tapestry*. National Gallery of Art, Washington, *Studies in the History of Art* 42. 79–104.

In contrast to the previous article, this work by Nobuko Kajitani gives an extremely detailed description of a state-of-the-art, full restoration treatment.

1994

Adelson, C. 1994. Introduction to the Collection. In *European Tapestry in the*

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Minneapolis Institute of Arts. Minneapolis: the Minneapolis Institute of Arts. xiii–xvii.

Anna and Ralph Bennett were brought over from San Francisco to assess the needs of the MIA collection and draw up a conservation plan. The outline of this plan and a great deal of useful information for both institutions and individual conservators can be found in this book.

1995

Ballard, M. 1995. Mechanical Properties: Preview and Review. *Textile Conservation Newsletter* 28: Spring. 14–26.

Lughtigheid, R. 1995. A Tale of Two Tapestries: Considerations of Restoration, De-restoration and Re-restoration. *ICCROM Colloque sur la conservation restauration des biens culturels* 4, octobre 1995. Paris: ARAAFU. 173–182.

Weigert, Laura. 1995. Reconstructing Medieval Pictorial Narrative: Louis Joubert's Tapestry Restoration Project. *Art Journal* Summer. 67–72.

An international group of conservators attended a meeting in Amsterdam in 1994, and the resulting publication contains no fewer than eight papers addressing various aspects of tapestry conservation.

Clark, A. and F. Hartog. 1995. The Cost of Tapestry Conservation. *The Mislead Eye... Reconstruction and camouflage techniques in tapestry conservation*, papers given at the TRON Symposium, Amsterdam, October 1994. Amsterdam: Textiel Restauratoren Overleg Nederland. 69–72.

Cousens, S. 1995. The Conservation Treatment of a Heavily Restored Fragment of a Hercules Tapestry: A Method of Approach. *The Mislead Eye... Reconstruction and camouflage techniques in tapestry conservation*, papers given at the TRON Symposium, Amsterdam, October 1994. Amsterdam: Textiel Restauratoren Overleg Nederland. 131–140.

In order to reverse some of the unfortunate past restoration work and provide a clearer version of the original intent of the weavers, conservators at the Rijksmuseum in Amsterdam supported this tapestry on a full lining and used false warps to bridge cuts and losses. In areas of weft loss, horizontal warp couching was used.

Finch, K. 1995. The History and Development of Tapestry Conservation. *The Mislead Eye... Reconstruction and camouflage techniques in tapestry conservation*, papers given at the TRON Symposium, Amsterdam, October 1994. Amsterdam: Textiel Restauratoren Overleg Nederland. 45–54.

In this extensive, personal tour through forty years of tapestry conservation history, Karen Finch stresses the importance of remaining open to new ideas and research within this continually developing field.

Hopwood, L. 1995. The Camouflage/Conservation and Display of a Set of Sixteenth Century Armorial in the Great Hall at Hampton Court Palace. *The Mislead Eye... Reconstruction and camouflage techniques in tapestry conservation*, papers given at the TRON Symposium, Amsterdam, October 1994. Amsterdam: Textiel Restauratoren Overleg Nederland. 91–96.

Lion, V. and S. Cussell. 1995. The Tapestry Imposes its Own Treatment. *The Mislead Eye...Reconstruction and camouflage techniques in tapestry conservation*, papers given at the TRON Symposium, Amsterdam, October 1994. Amsterdam: Textiel Restauratoren Overleg Nederland. 81–85.

Lugtigheid, R. 1995. The Eye Deceived: Camouflage Techniques Used at the "Werkplaats tot Herstel van Antiek Textiel" in Haarlem. *The Mislead Eye... Reconstruction and camouflage techniques in tapestry conservation*, papers given at the TRON Symposium, Amsterdam, October 1994. Amsterdam: Textiel Restauratoren Overleg Nederland. 59–62.
The compromise between providing structurally sound and aesthetically pleasing repairs is discussed in this paper, with a good description of different ways to use stitching and embroidery to camouflage losses.

Mathisen, S. A. 1995. An Excess of Metal Threads: The Techniques Used in the Conservation of the Tapestry Entitled 'The Bridal Chamber of Herse'. *The Mislead Eye...Reconstruction and camouflage techniques in tapestry conservation*, papers given at the TRON Symposium, Amsterdam, October 1994. Amsterdam: Textiel Restauratoren Overleg Nederland. 73–78.
In addition to containing an interesting catalog of past restoration techniques found in *the Bridal Chamber of Herse*, this paper illustrates how both visual unity and structural stability can be achieved with conservation stitching instead of restoration.

Pertegato, F. 1995. Painting in Tapestry Conservation: is it Heresy? *The Mislead Eye...Reconstruction and camouflage techniques in tapestry conservation*, papers given at the TRON Symposium, Amsterdam, October 1994. Amsterdam: Textiel Restauratoren Overleg Nederland. 97–100.
Examples are given of both historic paint applications and modern uses for paint in tapestry conservation.

Various. 1995. Stitches Used in Camouflage and Reconstruction Techniques. *The Mislead Eye...Reconstruction and camouflage techniques in tapestry conservation*, papers given at the TRON Symposium, Amsterdam, October 1994. Amsterdam: Textiel Restauratoren Overleg Nederland. 141–144.

Textiles in Trust is an engaging book containing thirty-two articles given at a symposium in honor of the 100th anniversary of the founding of Britain's National Trust. Four articles refer to tapestry conservation treatments:

Bosworth, D. 1995. The Conservation of Four Tapestries from Hardwick Hall. *Textiles in Trust*, proceedings of the symposium held at Blickling Hall, Norfolk, September 1995. London: Archetype Publications. 142–146.

A 25-step procedure used for the treatment of each of the 17th-century *Scenes of Country Life* tapestries is presented. It consisted of an English-style, full-support lining to which spaced support stitching connects the tapestry to the lining at even intervals, and self couching, or securing weakened areas to the lining with rows of cotton thread passing over and under warps in a tabby pattern, was used. Information on stitching intervals is given.

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Campbell, T. 1995. The National Trust Tapestry Collection. *Textiles in Trust*, proceedings of the symposium held at Blickling Hall, Norfolk, September 1995. London: Archetype Publications. 142–155.
This is a concise account of the National Trust's tapestry holdings with recommendations for the development of conservation priorities.

Abstracts of some of the Poster Session papers include:

Leach, M. 1995. Blickling Mortlake Tapestry—Adhesive Removal Treatment. *Textiles in Trust*, proceedings of the symposium held at Blickling Hall, Norfolk, September 1995. London: Archetype Publications. 189–190.

Reynolds, A. 1995. The Playing Boys Tapestries from Cotehele House: Camouflage Techniques. *Textiles in Trust*, proceedings of the symposium held at Blickling Hall, Norfolk, September 1995. London: Archetype Publications. 189–190.

Thompson, K. 1995. The History of Caesar Tapestries from Powis Castle: The Treatment of Previous Repairs and Alterations. *Textiles in Trust*, proceedings of the symposium held at Blickling Hall, Norfolk, September 1995. London: Archetype Publications. 195–196.

The UKIC volume *Lining and Backing* contains two articles that deal specifically with tapestry lining:

Ballard, M. 1995. How Backings Work: The Effect of Textile Properties on Appearance. *Lining and Backing: The Support of Paintings, Paper and Textiles*, papers delivered at the UKIC conference, London, November 1995. London: UKIC. 34–39.

Ballard explains that elongation of hanging tapestries is caused by several factors: the weight of the object; the nature of the fiber under stress (normally wool); the fabric structure (usually hanging in the thinner, weft direction); and the presence or absence of restraining materials such as straps, backing, or lining. A glossary of terms relating to mechanical properties of fibers is included.

Marko, K. 1995. Tapestry Conservation—A Confusion of Ideas? *Lining and Backing: The Support of Paintings, Paper and Textiles*, papers delivered at the UKIC conference, London, November 1995. London: UKIC. i–iv.

This article begins with a definition of some commonly confused terms used in tapestry conservation. The term "support fabric." Marko explains, refers to material that is applied to the reverse of the tapestry for purposes of localized or overall stabilization; "lining" should be restricted to an overall dust cover that is applied after any stabilization is complete. With these terms defined, Marko then provides an overview of support methods used on tapestries and the philosophy behind several techniques, including restoration, strapping, adhesive supports, stitched supports, and lining.

1996

Ballard, M. 1996. Hanging out with Tapestries, Carpets, and Quilts: the Effect of Textile Properties on Appearance. *The Textile Conservation Group Newsletter* 18:3. 1–4.

- Bonini, G. 1996. *The Laboratory of the Sala delle Bandiere in Palazzo Vecchio, Ten Years of Experience in Tapestry Restoration*. Florence: Sala delle Bandiere.
This dual-language exhibit catalog has wonderful historical, and technical information. Washing at the Palazzo Vecchio was still done with an ancient recipe of soap wart, or *saponaria*, in purified water. The main objective stated is the restoration of tapestries back to their original textural and narrative form. Losses are rewoven even if there is no trace of the original image, in which case the colors of the surrounding area provide guidance for a sympathetic infill. The excellent illustrations are as informative as the flowery text.
- Breeze, C. 1996. *The History of Tapestry Conservation and Exhibition at the Cathedral of St. John the Divine*. *International Tapestry Journal* Winter. 13–20.
- de Graaf, A. J. and F. Boersma. 1996. *Tapestry Conservation: Support Methods and Fabrics for Tapestries*. Results of the Questionnaire on Tapestry Conservation. Amsterdam: Instituut Collectie Nederland.
In response to the need for further investigation into how to best support a tapestry, a team of conservators from the Instituut Collectie Nederland in Amsterdam published three reports. In the first, dating from 1996, researchers Hofenk de Graaff and Boersma report on the results of a questionnaire distributed to an international body of textile and tapestry conservators. Twenty-eight questionnaires were returned, showing that conservators can still be grouped into restoration and conservation categories, with the majority employing conservation approaches.
- Herald, J. 1996. *Notes on English Tapestries*. Research report, Textile Conservation Centre, Hampton Court Palace, Surrey.
- Historic Royal Palaces. 1996. *Five Year Review*. Historic Royal Palaces, Textile Conservation Studio, Hampton Court Palace, Surrey.
- Sachs, S. 1996. *Forward in Woven Splendor: Five Centuries of European Tapestries in the Detroit Institute of Arts*. Detroit: The Detroit Institute of Arts Founders Society.
A brief description of how the DIA accomplished its large-scale tapestry conservation project is provided.
- Seth-Smith, A. and T. Wedge. 1996. *Animal Glue Removal from 16th Century Flemish Tapestry Fragments: A Comparative Study of Three Cleaning Methods*. *Conservation News* 59: March. 65–67.
As the title suggests, this article compares the results of three methods for the removal of animal glue—pre-treatment with paper a poultice, and washing with two different solutions of Synperonic N and carboxymethylcellulose. Recommendations include reducing the amount of netting, pretreating with paper poulticing, maintain a warm wash bath, and light toweling followed by application of blotting paper.

The ICOM-CC 11th Triennial Meeting in Edinburgh was host to three presentations

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related to tapestry conservation.

Ballard, M. 1996. Hanging Out: Strength, Elongation, and Relative Humidity: Some Physical Properties of Textile Fibers. *Preprints*, ICOM-CC 11th Triennial Meeting, Edinburgh, September 1996. Vol. II. 665–669.
The issues of strength, exhibit methods, and relative humidity are discussed.

Howell, D. 1996. Some Mechanical Effects of Inappropriate Humidity on Textiles. *Preprints*, ICOM-CC 11th Triennial Meeting, Edinburgh, September 1996. Vol. II. 692–698.

A study held at the Historic Royal Palaces, Hampton Court, monitored the effects of humidity on the weight of a tapestry hung with Velcro. Change in weight was found to occur, even though the literature suggests that the materials should change about 8% in the conditions replicated. One explanation is that soiling effects the moisture change.

Shephard, L. K. 1996. The Conservation Treatment of Two Partially Restored 18th Century Brussels Tapestries. *Preprints*, ICOM-CC 11th Triennial Meeting, Edinburgh, September 1996. Vol. II. 721–725.

The challenges of applying conservation principles to two tapestries that had been abandoned in the middle of a full restoration are discussed, with background information on the history of the Textile Conservation Studios at Hampton Court Palace, now known as the Historic Royal Palaces.

1997

Allen, R. 1997. Historic Royal Palaces Textile Conservation Studios: An Introduction. *AIC Textile Specialty Group Postprints*, Twenty-fifth Annual Meeting, San Diego, CA. 80–85.

A thorough history of the Historic Royal Palaces can be found here, including details of their wetcleaning setup.

Allen, R. 1997. *The Conservation of the "Triumph of Fortitude" Tapestry from the "Triumph of The Seven Virtues" Series Dated c1535*. Research report, Historic Royal Palaces, Textile Conservation Studio, Surrey.

Bilson, T., B. Cooke, and D. Howell. 1997. Mechanical Aspects of Lining "Loose Hung" Textiles. *Fabric of an Exhibition: An Interdisciplinary Approach—Preprints*, First Biennial North American Textile Conservation Conference, Ottawa. 63–70.
Support of textiles with supplementary fabrics can reduce gravitational stress and protect them during storage. Tapestries are often perceived as needing support more than other textiles, and these authors used a model tapestry to find some answers to questions about the usefulness and affordability of tapestry support methods.

de Graaf, A. J. and F. Boersma. 1997. *Tapestry Conservation: Support Methods and Fabrics for Tapestries*. Part I—Tapestries: General Background Information, and Part II—Chemistry and Physics of Flax (Linen) and Cotton. Amsterdam: Instituut Collectie Nederland.

The second of three reports, this 1997 two-part publication by Hofenk de Graaff and Boersma contains excellent background information on tapestry conservation history, techniques, and types of damage found. The development of conservation and its divergence from restoration is thoroughly documented, along with the

practices of spaced repairs within the structure of the tapestry, and the use of strapping.

Fiette, A. 1997. Tapestry Restoration: An Historical and Technical Survey. *The Conservator* 21. 28–26.

One of the best short histories of tapestry conservation, this paper is especially informative on French methods.

Kociemba, M. 1997. Cradle System for Tapestry Installation. *The Textile Specialty Group Postprints*, Twenty-fifth Annual Meeting, San Diego, CA. 89–92.

Landi, S. 1997. A Fresh Approach to the Problem of Support for Tapestries. *Textile Conservation Newsletter* 33: Fall. 5–13.

Perhaps the most revolutionary approach to the support of tapestries in recent years, Landi's new method consists of stitching tapestries to a leno-weave polypropylene fabric while the tapestry is suspended sideways on a custom-made apparatus. Areas of loss are filled in using the support fabric as a base, and additional repairs can be made in the future as necessary. This type of full-support lining allows both washing and partial access to the reverse, which are two complaints of traditional linen scrims.

1998

Barker, K. 1998. Textile Conservator Achieves New Heights: The Dust of 36 Years Removed from the World's Largest Tapestry. *Conservation News* 66. 52–53.

Tapestry conservation meets high-rise window washing in this humorous and detailed account of surface cleaning a tapestry in Coventry Cathedral.

Bosworth, D. 1998. Wet-Cleaning a Fragile Tapestry Using the De Wit System. *Conservation News* 65. 49–51.

The De Wit method begins by laying the tapestry face up on a foam-like fabric to protect it from the steel mesh of the wash tank. Light suction keeps the tapestry in place, limiting the necessity for temporary netting. A 0.5% solution of nonionic Nonylphenol Ethoxylate detergent in water is used. Constant flushing of solution through the tapestry means that it never sits in a dirty, acidic bath. Towing and gentle suction quickly dry the tapestry.

de Graaf, A. J., F. Boersma, and W. G. Th. Roelofs. 1998. *Tapestry Conservation: Support Methods and Fabrics for Tapestries*. Part III—Scientific Research 'Linen Versus Cotton'. Amsterdam: Instituut Collectie Nederland.

In order to further explore the topic of fabric choice for tapestry support, more research was undertaken by de Graaf, Boersma, and Roelofs, resulting in the a third publication in 1998. It is by far the most comprehensive study of materials for tapestry conservation, and shows that cotton and linen have similar tensile strength and aging patterns. The team hopes to continue research into the behavior of both tapestries and their support fabrics.

The ICOM-CC Textiles Working Group meeting held in 1995 had three speakers who presented their research on tapestries.

Barnett, J. 1998. The Use of a Domestic Water Extracting Vacuum Cleaner in the Wet Cleaning of Carpets and Tapestries. *International Perspectives on Textile*

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Conservation: papers from the ICOM-CC Textiles Working Group meetings, September 1995. London: Archetype. 29–31.

Finch, K. 1998. Polypropylene: a Fresh Approach to the Problem of Support for Tapestries. *International Perspectives on Textile Conservation*: papers from the ICOM-CC Textiles Working Group meetings, September 1995. London: Archetype. 13–17.

Maes, Y. 1998. Tapestry Cleaning by Aerosol Suction. *International Perspectives on Textile Conservation*: papers from the ICOM-CC Textiles Working Group meetings, September 1995. London: Archetype. 32–35.

1999

Gould, B. 1999. Insect Infestation: A Large Tapestry's Fumigation and Stabilization for Storage. *AIC Textile Specialty Group Postprints*, Twenty-sixth Annual Meeting, Arlington, VA. 9–13.

Haldane, E. 1999. So That's Why Textile Conservation Has Such a Big Studio!—Tapestry Washing at the V&A. *V&A Conservation Journal* 32. 17–20.
The many incarnations of the wetcleaning system at the V&A are described, including the newest setup for large textiles, which takes up approximately one third of the floor space of the entire textile conservation studio. Plastic tubing and sheeting are used to construct a temporary tank that can be drained right onto the tiled floor. An outline of current washing methods is also given.

2000

Breeze, C. M. 2000. *A Survey of American Tapestry Conservation Techniques*. Research report, Textile Conservation Center, American Textile History Museum, Lowell, MA.

Findings from a survey of American tapestry conservators are presented alongside historical background on the development of modern tapestry conservation techniques.

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