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THE CONSERVATION OF POLYCHROME WOOD SCULPTURE IN THE UNITED STATES: AN HISTORICAL OVERVIEW, 1870–1970

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ABSTRACT

This paper presents an overview of the early history of the conservation and restoration of medieval polychrome wood sculpture in America. Already in the 1880s, the condition of sculptures entering U.S. collections was far from homogeneous. Many were restored before acquisition, with missing elements added and paint layers disguised or removed, to appeal to collectors' tastes. Polychrome sculpture, a mixed medium unfamiliar to most American restorers, was often treated by paintings specialists with methods adapted from easel painting restoration. Starting in the 1930s, numerous sculptures that had deteriorated due to fluctuating environmental conditions were treated at American institutions with the hot wax immersion method. The paper also considers the development of conservation research laboratories, which placed an increased emphasis on science and provided a fertile environment for advances in technical studies. Through archival research and visual examination of collections, some of the major trends and pioneering restorers and curators are documented.

RÉSUMÉ

Cet article présente une vue d'ensemble des débuts de l'histoire de la conservation et de la restauration des sculptures en bois polychromes médiévales en Amérique. Dès les années 1880, l'état des sculptures admises dans les collections américaines était loin d'être homogène. Beaucoup avaient été restaurées avant leur acquisition, via le comblement des lacunes et le maquillage ou l'élimination de couches de peinture afin de répondre aux goûts des collectionneurs. La sculpture polychrome, un médium mixte mal connu de la plupart des restaurateurs américains, était

INTRODUCTION

Medieval European polychrome wood sculptures in American museum collections are long removed from their original context and culture. Devoid of their surrounding architecture, altarpiece or shrine, for the most part stripped of their religious function, and often in fragmentary condition, they serve a new purpose in their institutional settings. By the 1880s, few medieval objects had entered the newly founded museums in America; however, in the 1930s, collecting of medieval sculpture dramatically increased. While this history has, to some extent, been discussed in the literature, scant attention has been paid to the parallel developments in the preservation of these objects (Bradford Smith 1996, Nielsen 2008). This paper will consider several key developments in the examination and treatment of polychrome wood sculpture in American institutional collections. These will include the establishment of museum laboratories, the expanding role of science, the prevention and treatment of insect attack, the study and treatment of wood movement and paint loss, and the removal of overpaints. These topics are discussed using data gathered from site visits to some of the important American collections of polychrome sculpture, including the Cleveland Museum of Art; the Harvard Art Museums; the Metropolitan Museum of Art and its branch museum devoted to medieval art, The Cloisters; the Museum of Fine Arts (MFA), Boston; the Philadelphia Museum of Art; the Rhode Island School of Design Museum (RISD); the Worcester Art Museum; the Wadsworth Atheneum; and the Walters Art Gallery.

HISTORICAL BACKGROUND

Most of the polychrome sculpture in American collections was restored before acquisition. What took place is known largely through circumstantial evidence and must be inferred from the remains of old treatment materials and practices visible on the sculptures today. In a few cases, the dealer supplied information, such as with the Spanish 13th-century head today in the RISD Museum or the Soissons *Virgin and Child* in the MFA, Boston, both of which had been cleaned of overpaints prior to acquisition (Zarnecki 1959, Swarzenski 1960). It is clear from examination that many polychrome sculptures were significantly altered, probably to increase their appeal for collectors. Restoration for them meant the completion of the object

souvent traitée par les spécialistes de la peinture avec des méthodes adaptées de la restauration de la peinture de chevalet. À partir des années 1930, de nombreuses sculptures qui présentaient des dégradations dues aux variations environnementales ont été traitées dans des institutions américaines selon la méthode d'immersion dans la cire chaude. L'article traite également du développement des laboratoires de recherche en conservation, qui mettaient l'accent sur la science et fournissaient un environnement fécond permettant des progrès au niveau des études techniques. À travers la recherche dans les archives et l'examen visuel des collections, les grandes tendances et les pionniers de la restauration et de la conservation sont documentés.

RESUMEN

Este artículo presenta una revisión de historia temprana de la conservación y restauración de escultura en madera policromada de la época medieval en Norteamérica. Desde la década de 1880, el estado de conservación de las esculturas que llegaban a las colecciones de Estados Unidos de América no era nada homogéneo. Muchas fueron restauradas antes de su adquisición, añadiendo elementos faltantes y ocultando o borrando capas pictóricas para que se asemejara más al gusto de los coleccionistas. La escultura policromada, un medio mixto poco familiar para la mayoría de los restauradores estadounidenses, fue tratada generalmente por especialistas en pintura con métodos adaptados de la restauración de pinturas de caballete. A partir de la década de 1930, numerosas esculturas que se habían deteriorado debido a las condiciones ambientales fluctuantes, fueron tratadas en instituciones estadounidenses con el método de la inmersión en cera caliente. El artículo también considera el desarrollo de los laboratorios de investigación en conservación, que se enfocaron cada vez más en la ciencia y proporcionaron un entorno fértil para el desarrollo de estudios técnicos. Se aporta información sobre algunas de las principales tendencias, así como de los restauradores y curadores pioneros, con base en investigación en archivos y en el examen visual de las colecciones.

to its full aesthetic and iconographic function – even if that function was a misinterpretation. Missing elements and architectural details were replaced, and lost attributes (essential to the correct identification of the saint) were added, sometimes arbitrarily, thereby altering the meaning of the work (Preising 2007, 21). The Cloisters' 13th-century French *King* (1952.82) for example, was “improved” in Paris before its acquisition by the Metropolitan Museum in 1952. It had been, sequentially, a figure of St. Alexis holding attributes of a ladder and palm, and a St. Louis, with a renewed polychromy and bejeweled neckline and chest (Randall 1995).

Many sculptures entered American institutions without their original polychromy. The paint and gilding layers had been stripped at some previous time, for reasons ranging from antipathy towards color on sculpture, to a mistaken belief that the wood carving conveyed the true essence of the work (Boldrick 2002, 20–23). Early 20th-century art historical methods of research that relied on black and white photography made it easy to ignore color, or its absence (Sauerländer 2000). Additionally, many American museums, whose collections were initially formed to inspire artisans and designers, treated polychrome wood sculpture as objects of design, like furniture. The Mr. and Mrs. Roland L. Taylor collection, bequeathed to the Philadelphia Museum of Art in 1929, comprises numerous fragments of 15th-century wood paneling as well as a lesser number of sculptures, all of which exhibit a similar shiny, dark brown surface. Stained, varnished or waxed wood was often the most desirable finish for collectors. Almost two-thirds of the wooden sculptures from the Morgan Collection in the Metropolitan Museum of Art have lost their paint and gilding, and yet nearly all were originally polychromed.

CONSERVATION IN AMERICAN MUSEUMS

Consultant restorers

Polychrome sculpture, as a mixed-media object unfamiliar to most American museum restorers, was at first usually treated by contracted paintings restorers with methods adapted from easel painting restoration, such as the application of picture varnishes to the surface.¹ Several of these restorers became knowledgeable about polychrome sculpture, and eventually formed long-standing relationships with American museums. David Rosen (1880–1960), a commercial restorer based in New York City, worked extensively on the holdings of at least seven major American institutions, and became technical advisor to the Walters Art Gallery, the Philadelphia Museum, and the Worcester Museum of Art. Born in Russia, Rosen had studied painting and sculpture in Paris before moving to the US in 1913 to practice restoration. While primarily a paintings restorer, Rosen was also retained to preserve and restore sculpture, and from the early 1930s made the treatment of flaking polychromy a focus of his research (Blewett 2006, Rosen Archives).² William Suhr (1896–1984), an influential American paintings conservator born in Prussia and trained in Berlin, worked under Valentiner at the Detroit Institute of Arts beginning in 1928, and was

conservator of the Frick Collection from 1935 to 1977. During this time, he maintained private clients, including New York dealers and several major American museums (Stewart 2010). Suhr, who was experienced in the treatment of blistering paint on panels (Suhr 1932), treated at least two important sculptures at Cleveland – a *Pieta* (1938.294) and *Christ and St. John* (1928.753). The paintings conservator Richard Buck (1903–1977) completed the technical examination of another sculpture from this museum, a Romanesque *Virgin and Child* (1970.76), in 1970, at the Intermuseum Laboratory in Oberlin (Buck 1947). Conservators from the Fogg Art Museum worked as consultants to neighboring museums, and examined or treated polychrome sculptures at Harvard as well as at the Wadsworth Atheneum and the RISD Museum. Names of other specialists hired on contract to treat specific works are mentioned in museum files, including Joseph Ternbach of Forest Hills, New York; Alice Muehsam of New York, who worked on a group of the *Three Kings* for the Wadsworth Atheneum in 1953; and Anton Konrad, who owned a private studio in Brooklyn and advised the Philadelphia Museum on the treatment of the *Saint Barbara* and *Saint Catherine* reliefs by Nicolas Weckmann, in 1965.³

Museum restorers

Several major American museums opened “repair shops” in the early decades of the 20th century that were responsible for both restoration and preventive care of the collections. Gradually, these departments evolved into well-equipped research laboratories with scientific capacity (Becker and Schorsch 2010, Bewer 2010), and several retained staff who also treated polychrome sculpture. Elisabeth Packard (1907–1994) was hired in 1937 as an apprentice to David Rosen at the Walters Art Gallery, and from that point until her retirement in 1977 treated much of the polychrome sculpture in the collection. While consolidation of deteriorated sculptures was a focus of her work, she also removed overpaints to reveal earlier layers, following practices established earlier in Europe. At the Worcester Art Museum, Edmond de Beaumont, a Swiss emigrant apprentice-trained at the Fogg, was hired in 1936, first as museum photographer and laboratory technician, and later became the museum’s first full-time conservator. He treated many of the museum’s medieval wood sculptures. Theodor Siegl (d. 1976), a paintings conservator hired in 1955 by the Philadelphia Museum of Art, also treated polychrome sculpture for the collection.

The conservation history of medieval objects at The Metropolitan Museum of Art stands somewhat apart; there alone, the treatment of polychrome sculpture became a specialized field. A curator, James Rorimer (1905–1966), the former student of Paul Sachs and Edward Waldo Forbes at Harvard, developed a strong interest in technical studies, both completing research himself and collaborating with scientists such as Rutherford J. Gettens at the Fogg (Rorimer 1934). Rorimer called for a more “archaeological” approach to conservation, objecting to both the concealment of sculptural form by thick overpaints, and the merciless scraping and chemical cleaning of sculptures (Rorimer 1936). Together with Charles Langlais, “repairer

and restorer of stone, etc.”, he undertook the examination, cleaning and restoration of most of the sculptures acquired for the museum. While he cited “archaeology” as a model, his treatments never reached the sterility of approach taken at Yale University for the Italian panel painting collection between 1950 and 1970 (Aronson 2003, 30–53). Keenly aware of the “aged look” of medieval sculptures, Rorimer and Langlais retouched sculptures in an “impressionistic” manner, hiding disfiguring losses and purposefully leaving traces of overpaints on the surface. In 1955, Rorimer hired Mojmir Frinta (b. 1922 in Prague) as Restorer for The Cloisters. Frinta, who had been trained in painting and polychrome sculpture restoration in Paris, worked at the museum until 1963 and became a highly regarded expert in the techniques of medieval polychromy.

The role of science

After the 1930s, science and technical expertise increasingly dominated conservation methodology in American museums, and a period of positivist faith in science to solve conservation problems began. The authenticity of works of art was a primary concern. New scientific techniques, especially x-ray radiography, became indispensable tools in the examination of art works for acquisition. Starting in 1925, Alan Burroughs from the Fogg used a portable unit for x-ray radiography at a number of American museums. At the Cleveland Museum of Art, Burroughs revealed the polychrome wood *Standing Virgin and Child* attributed to Giovanni Pisano to be a modern forgery by Alceo Dossena using this technique (Sox 1987, 49). In 1931, James Rorimer published a scientific discussion on the use of ultraviolet light in the examination of works of art (Rorimer 1931). Mojmir Frinta sought the expertise of Joyce Plesters and John Mills at the National Gallery in London for organic analysis of samples taken from sculptures in the Metropolitan Museum collection (Frinta 1963). Most American museums also requested help from the US Forest Products Laboratory in Madison, Wisconsin or from the Smithsonian Institution in Washington D.C. to answer wood technology and behavior questions, as well as for the analysis of wood species.

THE ADOPTION OF NEW TREATMENT MATERIALS AND TECHNIQUES

Poor environmental conditions in most American museums in the early 20th century caused accelerated deterioration of polychrome sculpture, and flaking paint became a serious issue. In many institutions, galleries were adequately heated with some humidification provided for winter months, but conditions during the summer fluctuated between 60 and 90 percent RH, with inadequate cooling (McCabe 1931). Despite advances in research in the American wood industry (Moncrieff 1968, Unger et al. 2001), effective treatments to prevent insect attack, wood decay or flaking paint remained elusive. Museum staff nevertheless tried various methods to arrest deterioration.

In 1934, David Rosen developed the wax immersion method at the Walters Art Gallery for consolidating “several dozen Gothic statues and section of retables” weakened by biological deterioration (Rosen 1950, 51; Packard 1967; Packard 1970). The hot wax tank was in use at the Walters until 1972. While the first documented use of wax-resin consolidation by immersion is by C. Gurlitt in Dresden, in 1902, its large scale application to polychrome sculpture collections is specific to America (Aberle and Koller 1968).⁴ At the Fogg Art Museum, R.J. Gettens experimented in 1936 with various mixtures of wax, acrylic resins and different pretreatments with solvents, before specifying a wax-resin recipe. In 1945, an “improved” tank was designed by Henri Marceau, at that time Curator of the John G. Johnson collection at the Philadelphia Museum of Art. The RISD museum and the Worcester Art Gallery followed suit, sending their objects to David Rosen or the Fogg for treatment. Although The Metropolitan Museum commonly carried out wax treatments on their Egyptian collection, few of the medieval sculptures seem to have been treated by immersion. Rorimer was keenly aware of the negative effects of wax treatments, with their significant darkening and dulling of colors, and tacky surfaces. In a letter to Suhr dated to 1949, Rorimer strongly advised against the use of wax for the *Christ and Saint John* at the Cleveland Museum of Art, recommending in its stead parchment size, since “pieces that have been treated in this way by him some twenty years ago have stood up through these years with no further restoration need” (Cleveland Museum of Art conservation file 1928.753). Wax-resin mixtures (often Plenderleith no. 13, parts by weight 40 beeswax, 30 paraffin wax, 20 resin, 10 gum elemi) were also applied to the surface of sculptures and heated with infra-red lamps or irons (Plenderleith and Cursiter 1934).⁵ While in charge of the war-time repository of the Fogg in Petersham, Massachusetts, Richard Buck tested waxes on the back of panel paintings to minimize warping, with results suggesting that waxes were “effective moisture barriers against short-term humidity fluctuations, but only partially prophylactic against longer humidity and temperature cycles” (Buck 1947, 1952). With no humidity control in its galleries and no other recourse for treatment, the Philadelphia Museum of Art attempted this method in 1958, applying a thick wax barrier to the back of a relief sculpture (Philadelphia Museum of Art conservation file, 1930-1-163).

The treatment of wood-boring insects was equally experimental. At the Metropolitan Museum, a number of methods were attempted, including formaldehyde, carbon disulphide, chloroform, X-rays and vacuum tanks. Hydrocyanic-acid gas was eventually selected, recommended by the US Department of Agriculture, which had used it as an insecticide for pests in stored grains since 1880 (Rorimer 1936). The technology was exported to Germany in 1916, and its application on art work as Zyklon B is recorded in Sweden (1921), Denmark (1928) and Austria, on the Kefermarkt altar (1929) (Unger et al. 2001). Restorers also attempted fumigation with di-para-chloro benzene (Cleveland Museum of Art conservation,

file 1970.56) and the insecticide/consolidant Xylamon-Hardening, a lindane-containing product familiar to German conservators working in the US.

CONCLUSIONS

Polychrome sculpture was largely an unfamiliar medium for American restorers in the early 20th century. Paintings restorers adapted methods and materials to attempt to solve the most pressing problems they encountered. In particular, flaking paint was a grave concern. Various methods of paint consolidation were tried, but wax (either applied or used in an immersion tank) was a favorite material. Technical analysis became increasingly important to the study of polychrome sculpture as research capacity was added to museum laboratories. Over time, some curators and restorers developed an expertise in the technology and treatment of polychrome sculpture, especially in New York. The large number and high quality of European polychrome sculpture in American collections warrants documenting the history of their treatment.

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NOTES

- ¹ Polychrome sculpture was routinely varnished after cleaning (see Philadelphia Museum, Cleveland Museum of Art, Walters Art Gallery, Harvard Art Museums conservation files).
- ² In 1934, Rosen was hired on staff at the Walters "not only for the reconditioning and preservation of the Walters' collection, but to begin researches in the field which, it is hoped, will eventually be of benefit to art collections everywhere." (*Walters Art Gallery Second Annual Report* 1934. Baltimore: Walters Art Gallery, 4). A chemist, Harold Ellsworth, was also hired that year to complete infra-red, x-ray and ultraviolet light examinations.
- ³ Ternback is mentioned in correspondence in the files of the Wadsworth Atheneum, as is Muehsam. Konrad became a sculpture restorer at the Museum of Modern Art in 1967 (see Philadelphia Museum of Art conservation files).
- ⁴ The process was also carried out in Brussels at IRPA-KIK.
- ⁵ For example, the Worcester Art Museum's seated *Virgin and Child* (1933.160) and *Crucifixion Group* (1934.26 a, b, c).

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