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1st Aid for Art

The Conservation Center at New York University

by Sheldon Keck

The Director of the nation's first conservation center for art details the importance of that center for the museums of America. This article was originally presented at the Annual Meeting Art-Technical Section

Joseph Duveen is said to have advised his clients that art is an ideal investment because it requires no upkeep. We have learned from sad experience that he was wrong. The strongest metals and stone, the finest pigments and canvas are subject to the ravages of time, climate, chemistry, and microorganisms.

The "Museums Directory of the United States and Canada" lists 4620 institutions devoted to art, history, science, and special subjects. Housed within the walls of these institutions, and committed to their care, are hundreds of thousands of works of art representing a sizable and irreplaceable segment of our aesthetic and historic heritage. Yet, until very recently no center existed in this country for the specific purposes of research in the conservation of works of art and of training professionals with the scientific and aesthetic knowledge necessary for dealing with the problems of conservation.

Many museums, on an individual basis, make herculean efforts to retard and correct deterioration within their own collections. In the last thirty years I have seen notable progress both in the technique of art conservation and in the attitude and activities of many institutions. Still, only recently I witnessed the shipment of a torn and dilapidated painting on canvas, insecure in its frame, sent with the complete approbation of the director of the lending institution to another one some 2,000 miles away for purposes of exhibition. When the painting was returned, it was repacked with so little skill and knowledge that its frame had sprung apart and its glass had been shattered. Apparently no alternative course of action had occurred to the director when the loan was requested of him.

In some institutions, funds specifically alloted for the maintenance of works of art are employed for construction or decoration of galleries, curatorial salaries, preparation of catalogs, and other general activities while the objects they were intended to maintain molder in poor storage conditions or hang uninspected and disintegrating on gallery walls. Only when deterioration reaches a point where it cannot be ignored is the object either retired or are stop-gap attempts made to restore it.

Museum trustees and directors would do well to consider where their institutions stand in this regard. They might investigate how funds bequeathed for maintenance are being spent, what measures are being taken to conserve their holdings for future generations, what records are available to demonstrate the extent of stability and rate of deterioration of their possessions, how often inspections are made of the physical condition of the objects displayed or stored, and what precautions are taken to insure the safety of an object when it is borrowed. Finally, they should want to know what efforts their institutions are making in research into the causes of deterioration and in keeping abreast of the latest methods of conservation.

Under the press of daily responsibility and limited in their knowledge of art conservation, most museum directors and curators, with the best of intentions, are not apt to think about deterioration until they see it. When it becomes visible, all they ask is that it be made invisible. Very few of them are qualified to diagnose the causes of damage or to judge whether a suggested course of restoration is anything more than a temporary "beauty treatment" which may lead ultimately to more damage than it corrected.

Restorers, ignorant of the processes of deterioration, the properties of the materials composing the work of art, and of the materials available to preserve it, can nevertheless make a work of art look temporarily just as beautiful as, sometimes even more beautiful than, a work of art truthfully and structurally rehabilitated and shielded from further degradation.

It was to alleviate the circumstances described above that the Conservation Center of the Institute of Fine Arts of New York University was established. Operating under a grant from the Rockefeller Foundation our Center has been charged with training students on a graduate level for professional practice in art conservation and with performing research which will improve both our understanding of deterioration and our methods of conservation. The first year, 1959-1960, was devoted to recruiting a staff and to converting 3,700 square feet of space contributed by the Institute of Fine Arts into offices, library, examination room, student laboratory-workshop, research laboratory, X-ray

room, dark room, storage areas, shop and seminar room. With an initial teaching staff of one conservator and one scientist, the Center embarked on its assigned tasks in 1960-1961. During the first years equipment and supplies had to be acquired and installed and a detailed curriculum had to be organized and developed while students were being taught and research investigations undertaken.

Basic concepts were a prime consideration. What is meant by "art conservation"? What fields of knowledge does it ideally encompass and how can this knowledge, as well as the very necessary skills required for professional practice, best be taught? Prior to the formation of our Center, no institution in the United States taught art conservation as a formal academic discipline. Apprenticeship with a practicing master was the normal procedure. A handful of American conservators had received informal training at the Fogg Museum in the 1930's on an apprenticeship basis.

A study of the curricula of the few institutions in Europe where a formal program is followed was helpful, but we feel that at our Center we are breaking fresh ground by creating a new kind of "professional conservator" whose scope extends beyond that previously required of even the twentieth-century restorer.

Guided by definitions in the Articles of Association of the International Institute for the Conservation of Historic and Artistic Works, we conceive art conservation as encompassing two broad areas of activity: *preservation*, or action taken to prevent, arrest or retard deterioration; and *restoration*, or action taken to reverse alteration, namely, to rehabilitate what is degraded or damaged and to return the work of art, structurally and aesthetically, to a former more stable state. In order to act effectively in both of these areas, the conservator must be thoroughly versed in the history of art, the physical behaviour and chemical properties of the raw materials of art, the technology of art and its historical development, deterioration and its causes, and the materials and techniques of conservation. In order to perform satisfactorily the conservator also must possess investigative, manipulative and artistic skills acquired through laboratory and studio practice. Finally, and perhaps above all, he must be imbued with deep respect for the artistic and historic integrity of the work of art and must have sensitivity to the nuances of form, color, texture and design with which the artist had endowed his creation.

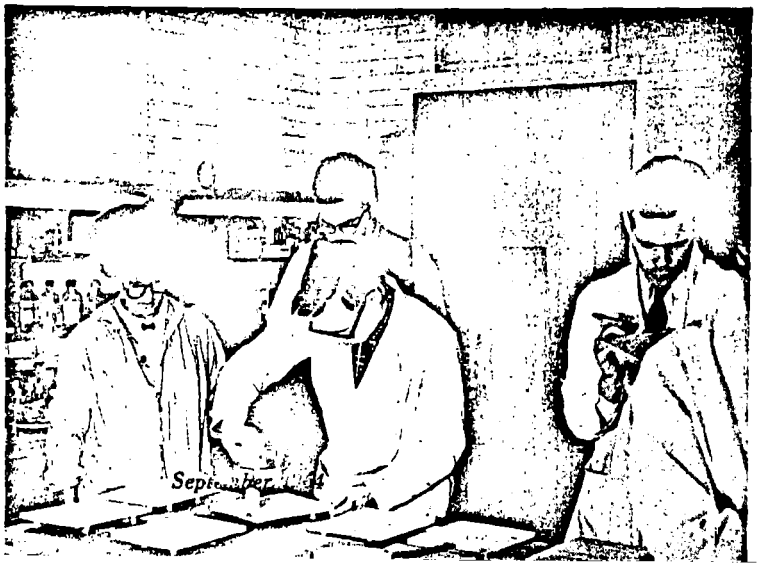
The Center is a sub-division of a graduate school of arts and science. It must and does operate within the university framework. Our purpose is to train not merely craftsmen or technicians, but professional practitioners, who know why they are doing what they are doing, who can make scientifically critical judgments with respect to selected methods of conservation, and who are capable of contributing to the advancement of our knowledge and skills in conservation. For these reasons we believe approximately four years of post-graduate study is needed to accomplish our aim. "Quickie" courses of two weeks, three months or one year cannot produce conservators with a reliable professional approach and the required knowledge, skill, judgment, integrity, and taste.

Because of limitations in space and equipment we have restricted enrollment in our program to twelve full-time students. Our decision was also influenced by the observation that, though the need may be extensive, the present demand by museums for professional conservation services is, in general, small.

This policy allows for the admission of no more than three students per year, each of whom is carefully selected. In addition to having a bachelor's degree a candidate must demonstrate manual dexterity in producing and handling art objects. Other prerequisites are twelve credits in art history and twelve credits in the sciences, preferably chemistry and physics. So far we have had consistently more applicants than we can accept. Several dedicated undergraduates, in order to fulfill entrance requirements, have planned and taken extra courses.

During his first two years at the Center, each student completes the requirements for the master's degree in art history. Besides taking eighteen credits in art history and museum training and twenty-four credits in introductory conservation courses, he must show proficiency in French and German, pass a comprehensive examination in art history, and complete a master's thesis.

The introductory conservation courses are two parallel courses consisting of lecture and laboratory. Each extends over the first two years and is divided into four parts to correspond with the semester system. One on the "Materials of Art and Archaeology" encompasses the atomic-molecular structure, chemical, physical and mechanical properties of the various materials employed in art, the methods of manufacture of these materials, their degree of stability, and methods to distinguish and identify them. The second, "The Technology and Structure of Works of Art," presents processes and the history of processes used in the fabrication of works of art, the structures of completed works of art, their behaviour under differing environmental conditions, the causes and evidences of deterioration, and methods of examination and treatment. One year the organic materials used in art are studied—colloids, polymers, vegetable and animal fibres, wood, paper, fabrics, dyes, inks, resins, oils, skins, ivory, and bone. Concurrently, art constructed mainly of these materials, namely, prints,



Left, top: A worm-eaten sculpture is infused to stabilize the wood and reattach the polychromy. Center: Students at the Center are taught the techniques of making and analyzing spectrographs to identify inorganic materials in works of art. Bottom: Students learn how to coat panels with gesso preparatory to painting in Italian tempera technique

drawings, water color and easel paintings, textiles, manuscripts, wood sculpture, furniture and decorative artifacts of ivory, leather, bone, are studied, examined and treated. Alternating years, the inorganic materials (metals, stone, clays, mortars, cements, silicas and pigments) are presented, while in the technology course artifacts, sculpture and architecture, ceramics, glassware, stained glass, mosaic and fresco are covered. First- and second-year students attend these courses together, so that at the conclusion of a two-year cycle half are ready for advanced specialization and half remain to take the second part with the incoming students. This particular cyclic system for general introductory material was necessitated by the small size of the staff.

Each student constructs a variety of works of art, using traditional materials and methods. He also examines and treats objects in all of the different categories. At the end of two years he has achieved insight into the causes and mechanisms of deterioration, has been exposed to current and past methods of preservation and restoration, and has had an opportunity to gain limited experience in treatment.

The two final years are devoted to concentrated practice and research in a selected field of specialization. It might be the conservation of paintings, it might be sculpture, textiles, art on paper, or decorative arts. He takes directed-study laboratory courses organized to improve his practical skill in examination and treatment, to increase his knowledge of the materials in his specialization, to acquaint him with problems of deterioration and preservation unique to his field, and to direct him in the performance of original research aimed at the solution of some of these problems. Also required is a full-time internship of at least seven months with an established master, during which the student gains practical experience under museum conditions.

On completion of his four years of study he receives, in addition to his master's degree, a Diploma in Art Conservation. Our first two graduates will be receiving these diplomas this year.

In a period of four years a total of three students has been awarded Fulbright fellowships for study in England or Belgium. Last summer one student worked as conservator for the excavations in Samothrace. This summer four are participating as conservators with expeditions in Egypt, Turkey, and Greece. At excavations of these kinds the student gains valuable experience under field conditions and contributes his skill and knowledge to preserv-

ing freshly uncovered material which might otherwise disintegrate.

Besides the regular full-time program students, art history students, museum training students, practicing conservators, and special students from foreign countries have enrolled in the program lecture courses for shorter periods—a semester or a year. Among them have been a chemist from Korea, a chemical engineer and a radiologist from Mexico, and conservators from museums in New York, Brooklyn, and Newark. Future art historians and curators may acquaint themselves with the aims, standards, problems and methods involved in conservation.

For purposes of understanding and developing sound preservative and restorative processes, research at the Center is thus far involved with historical studies of art fabrication and causes and mechanisms of degradation. We have been engaged with such wide-ranging problems as a search for causes of spawling of paint and plaster in Giotto's frescoes in the Arena Chapel and experiments in neutron activation of paintings to identify materials and methods of construction. Individual students and faculty members have participated in the following research projects: measuring the degree of fading of dyes in Coptic and Peruvian textiles after quantitative exposure to fluorescent light, investigating the influences of atmospheric impurities on the corrosion of copper/silver alloys, comparing the physical/chemical properties of ancient and modern wool fibres, and observing the effect on colors of agents used in bleaching prints, drawings and watercolors. Results have either been published or orally reported at professional meetings and symposia.

No aspect of the Center's program is not immediately nor ultimately of value to museums. The staff is ready to give information and to consult on the conservation problems of any museum. We do not claim to know all the answers. But when we do not, we can advise on where an answer can best be obtained. The Center has a fast-growing, specialized technical library which is available to museum personnel for reference.

Center student explains and demonstrates the results of research in neutron activation auto-radiography to a fellow student and a staff member. Photograph courtesy of Flatow

A drawing by Degas is examined under the stereoscopic microscope to determine what treatment might be necessary

Although the Center is not a "service" organization, if a work of art owned by a museum has specific application in our teaching or research programs, we will examine it, perform analyses, and give it conservation treatment. The only limitations are the appropriateness of the object and the time available. A nominal charge on cover costs is normally made. Objects have been studied or treated for the Hispanic Society, Numismatic Society, New York Historical Society, Brooklyn, and Metropolitan Museums. Outside of New York, among others, we have rendered assistance to the Sterling and Francine Clarke Museum, Randolph-Macon College, Essex Institute, the Hyde Collection, Yale University, Lyman Allen, Baltimore, and Newark Museums. Investigations have also been made for the District Attorney of New York and the Bureau of Internal Revenue. For example, the Center has been honored recently by a request from the United States Information Agency to examine and treat a portrait of Mrs. Devereux by John S. Copley for the National Art Gallery of Wellington, New Zealand. Although it might have been sent to England or elsewhere in the United States, the U.S.I.A. considered the Center competent and appropriate for participation in an international gesture of goodwill.

There are still untried possibilities of collaboration between museums and the Center. A museum with no conservator might arrange to have a local accredited student trained to fit the museum's requirements, by contributing a fellowship to the

Center. If a museum cannot carry on research study on its special conservation problems, a contribution to the Center for such research could make it possible.

The faculty and staff of the Center are indebted to our Board of Consulting Fellows for help in formulating and carrying out our program. The Fellows are from museums and from cultural and research organizations here and abroad. They have not only "consulted" and "advised" but have generously lectured and taught at the Center, and have collaborated in research projects. They include George L. Stout of the Gardner Museum, Richard D. Buck of the Intermuseum Laboratory, Dr. Paul Coremans of the Institut Royal du Patrimoine Artistique in Brussels, Dr. Robert L. Feller of Mellon Institute and the National Gallery, Washington, Rutherford J. Gettens of the Freer Gallery, Murray Pease of the Metropolitan Museum of Art, Dr. Edward V. Sayre of Brookhaven National Laboratory, and Professor Leonetto Tintori of Florence, Italy. We are grateful as well for numerous lecturers from other museums and institutions. Many have assisted in teaching and in organizing the material which a conservator must know.

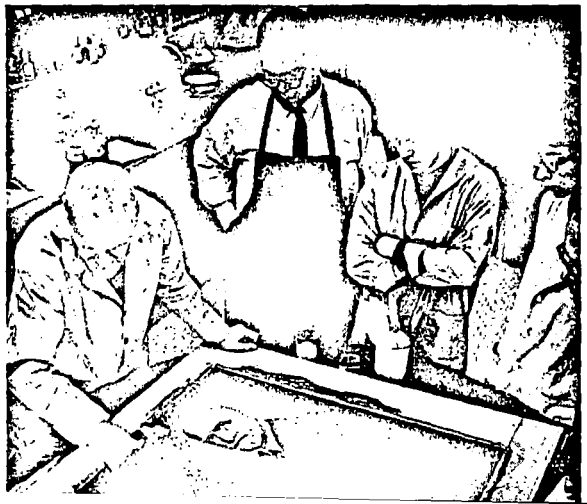
The grant of the Rockefeller Foundation which inaugurated the Center gave full support only for the first five years. Beginning in July 1964 support tapers annually and after four years—1968—ceases completely. Therefore the Center needs new financial support now. The minimum annual budget at our present state of organization amounts to $80,000, while a budget of $100,000 would increase efficiency in teaching and research, and would provide assistance for management of office, library, information files and supplies. An endowment of two and one-half million dollars would assure the continuation and development of the only center in the United States devoted to research and to training in art conservation.

The Kress Foundation will bear part of the Center's expense burden with an annual grant of $30,000 a year for the next five years. This award, while extremely helpful, will not maintain our present budget. To obtain the financial aid needed to continue its programs the Center now seeks the confidence and moral support of museums throughout the country.

A student demonstrates a test for the presence of cuprous chloride in bronze corrosion in diagnosing "bronze disease" in small Egyptian sculpture. Professor Keck advises

Students are instructed in method of examining metal and its alloys for naturally and artificially formed corrosion

The processes involved in lining and cleaning of a painting are demonstrated to students by Sheldon Keck, at left



Perhaps Dr. Franklin D. Murphy, President of the Kress Foundation, in announcing their grant, paid us the highest compliment when he said, "Vast stores of the world's great treasures have been brought together in the museums of the United States. The responsibility which American museum directors face in protecting and conserving these priceless objects is a matter of growing concern to all farsighted members of the museum profession. In view of the Kress Foundation's past interest in collecting and distributing works of art and its own efforts in conservation, this grant to the Conservation Center is considered a natural extension of its former project." ❖