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FIRST AID FOR RAVAGED ART





A tiny beetle, finding a crevice between some old paint and its support of glass, crawled in and set up house-keeping. In the course of feeding and raising a family, he burrowed this way and that under the paint, spinning out behind him a spider-web kind of thread.

His existence would have gone forever unnoticed except for one thing. The surface under which he carried on his activities happened to be a valuable Spanish primitive painting. The bits of dirt which the beetle accumulated, the strands of filament, and his dead body along with those of his relatives all helped to loosen small flakes of paint, flakes that in time disintegrated or fell off, opening the undersurface to further encroachments of moisture, dirt, and new kinds of organic life.

The insect was but one of several forces that would have turned the painting into scrap if they had not been noticed and caught in time. These slight and largely unconsidered forces—such things as light, humidity and dampness, changes in temperature, polluted air, molds, and the interaction of chemicals within the work of art itself—work so slowly that one cannot reckon their depredations in annual thousands of dollars. Yet over the centuries they have destroyed (with aid from the ignorance and carelessness of man) art that today would be valued in the billions.

Nothing remains, for example, of the art of Apelles,

reported by the Roman historian Pliny to be the most famous and skillful of all Greek painters. Leonardo's "Last Supper," painted on the walls of a chapel in Milan, survives only as a ghost painting, victim of flooding, dampness, and secondary chemical effects.

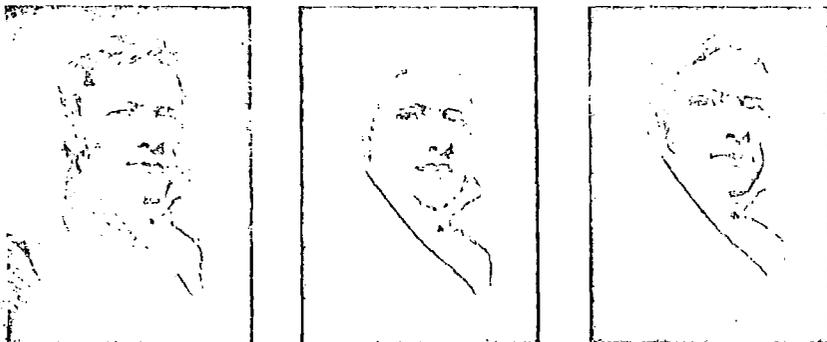
In our time, the exterior sculptures and wall surfaces of the Louvre, Notre Dame, and other famous European structures are being pitted and broken by chemical elements spewed into the air by factory smokestacks. Throughout this country stone sculptures kept outdoors are being leached and broken by seepage of moisture into cracks in the stone. Bronzes under conditions of high humidity become "diseased." Even the efficient fluorescent lamp gives off ultra-violet rays, which, like those from sunlight, weaken organic materials and fade colors.

To make war on such forces, a new profession of conservation has developed. The pioneering center in the United States for training and research in this profession is the Conservation Center of New York University's Institute of Fine Arts.

PERSPECTIVE

Volume 1, Number 1, Fall, 1963

PERSPECTIVE deals with activities of New York University of more than usual significance for the progress of society and of the arts. It is published occasionally during the school year by the Office of University Publications of New York University, Washington Square, New York 3, N.Y. Donald W. Craig, editor.



LEFT: Original portrait by Henry Inman of Capt. John Tanner, nineteenth-century negotiator between the United States Government and Indian tribes. Light area on right side of head shows where he was once scalped. CENTER: Tanner portrait as it looked after picture cleaner in 1918 had rubbed away much of paint, then crudely repainted the portrait to cover damage. Notice how Inman's treatment of hair is lost. RIGHT: Reconstruction by advanced student Ben Johnson.

Conservation—old style

Conservation of sorts has existed for many centuries as picture cleaning or "restoring," carried on by untrained people or artisans whose ignorance and lack of aesthetic scruples often did more harm than good to the works with which they dealt. It was tradition in one Italian town to clean the altarpieces with a mixture of sand and olive oil. A nineteenth-century British writer reports that one of the English butler's duties was to take the family portraits out to the carriage house once a year to clean and recoat them (probably with carriage varnish). Commercial restorers still tend to think in terms of obscuring damage and making objects look attractive for exhibition rather than of preserving their original characteristics for future generations.

During the past forty years a number of major museums and galleries have established their own conservation laboratories, and a few have conducted training in conservation on an apprentice level. But in most smaller museums there is still comparatively little scientific knowledge about natural forces at-

tacking works of art, or about the techniques necessary to their preservation.

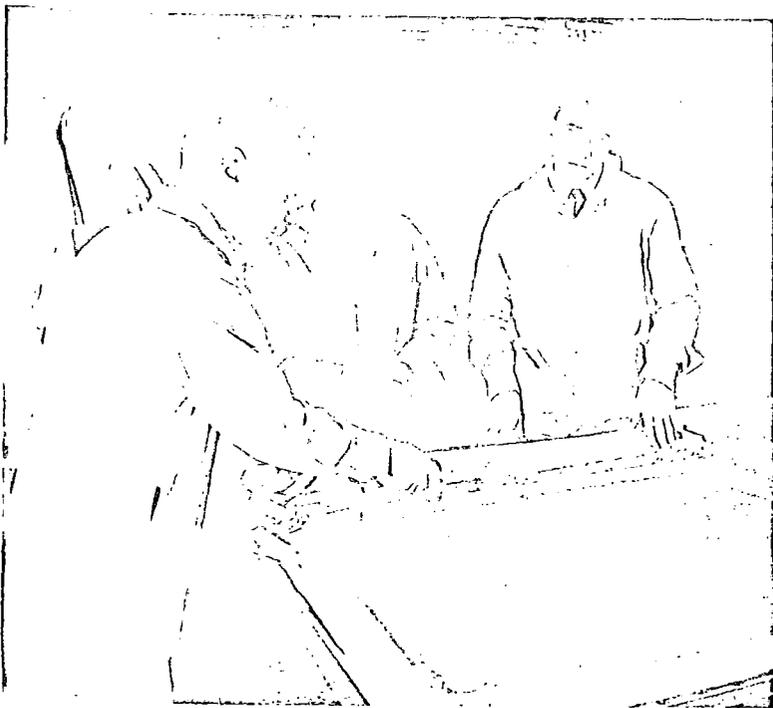
The crying need has been for a professional school that would have the same relation to the practice of conservation as a law school has to the practice of law; where standards could be established and training and research carried on with support from all the related facilities of a great university.

In 1959, five men got together to write a kind of manifesto stating the national significance of the problem, and their conception of the kind of institution and program needed to solve it. Their names carried weight in the world of fine arts: Frederick B. Adams, director of the Morgan Library; Sheldon Keck, then conservator of the Brooklyn Museum; Murray Pease, conservator of the Metropolitan Museum of Art; Craig Smyth, director of the New York University Institute of Fine Arts; and George Stout, director of the Gardner Museum in Boston.

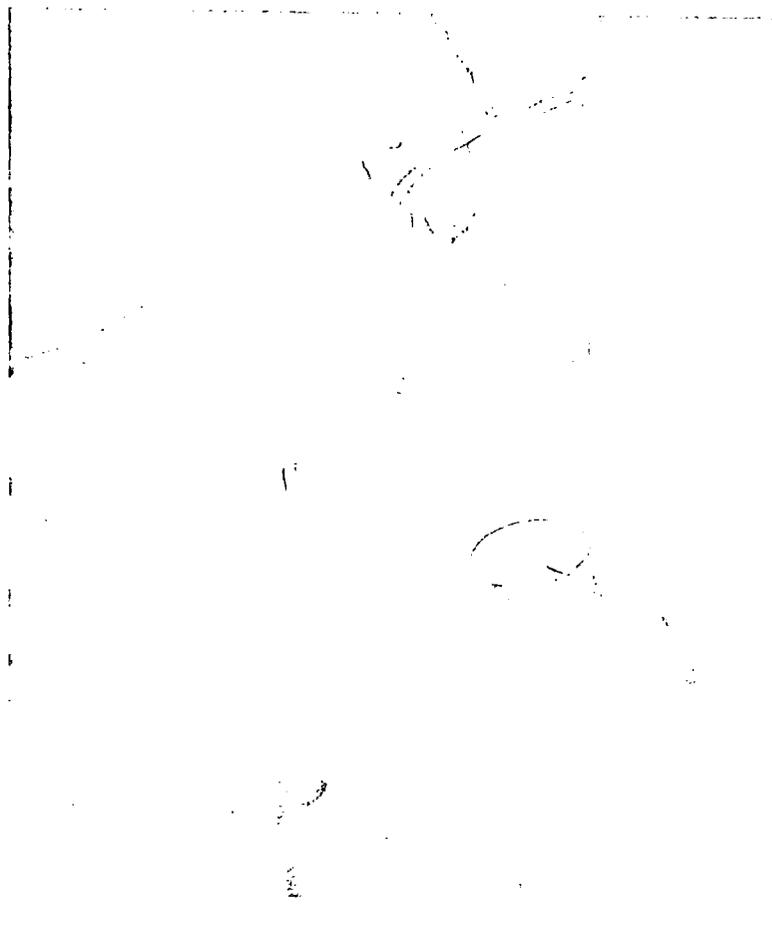
They addressed the manifesto to the Rockefeller Foundation, asking for funds to establish a conservation center at New York University's Institute of Fine Arts. As a result of their request, the foundation agreed to support the program in full for five years,

THE RESTORATION OF CHANCELLOR BROWN

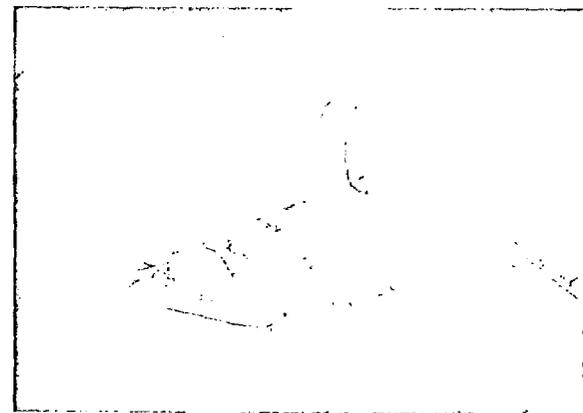
Prior to cleaning, the damaged portrait of N.Y.U.'s former Chancellor Elmer Ellsworth Brown (1911-1933) is analyzed to ascertain what solvents may safely be used to avoid damaging surface.



To restore tears and reattach loose paint, a new lining is attached to the back of the old canvas. Here Sheldon Keck, director of the center, demonstrates joining technique to force wax resin bond through both canvases.



Cleaning begins. Small swabs are used to apply 2% solution of detergent in water. This will be followed, after drying, by application of a solution of diacetone alcohol in a petroleum spirit.



and to give it gradually diminishing support for four more years as it found other means of financing.

Conservation—new style

The difference between old-time craftsmen and the modern professional was well stated by George Stout in the opening lecture of the first class at the Conservation Center on October 2, 1961.

"To the professional conservator, each object is a separate and individual problem," said Mr. Stout. "The tradesman knows what will happen because he has certain set procedures which he follows. If one of them brings an unfortunate result, luck alone is to blame. The procedure is assumed, without much reasoning, to be right.

"The professional conservator will study with open mind what he has before him (the state of the stone, the amount of cementing between the crystals, the mechanical strength). He may decide to do nothing, or he may come to a choice among a number of possible procedures."

Mr. Stout's point may be illustrated by almost any aspect of the teaching program at the center.

The Cover

Second-year student Charles Olin in-paints areas of Brown portrait where surface is flaked off or abraded. In-painting is confined to reproducing precisely tones of adjacent areas of original.

On one typical day, for example, Dr. Seymour Lewin, one of the University's more distinguished professors of chemistry, lectured a dozen students for close to two hours on corrosion in bronze. Then he assigned, as a laboratory project, the cleaning of heavily corroded Roman coins by a dozen different methods, all used at one time or other by conservators for removing bronze corrosion. Objective of the laboratory project was to decide which of all the methods might be the best one, the method (or methods) of choice.

On the same day one of the students, Charles Olin, explained to a visitor the work he was doing with an oil by Bruce Crane, painted around 1920. Yellows and greens in the painting had separated from the canvas, had flaked off, or had become so powdery that they could be brushed away.

"Chemical tests," Olin explained, "show that those colors in trouble are cadmium yellow and cadmium green. And here (he showed a photomicrograph) you can see white crystals, pushing up the paint and causing cleavage. Apparently the crystals are connected with the cadmium.

"What causes it? We're still trying to find out. Once we discover what is happening, and why, we shall understand better how to correct the problem. If we can't prevent it from happening again, we won't have solved the problem of conservation."

Science and the artist

Science and technology are tremendously important to the conservator. Students use spectrograph and X ray as well as test tubes and microscope to analyze the composition of any material from bronzes and pottery to pigments and manuscript inks.

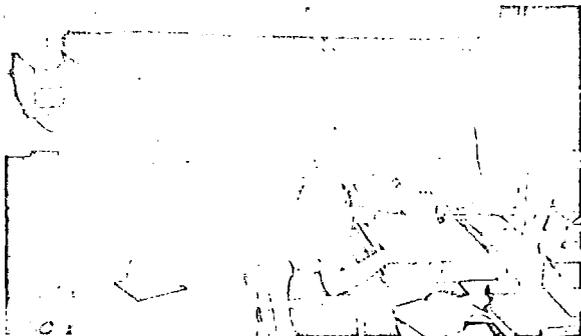
They learn the value of ultraviolet, infrared, and directed beams of visible light for showing up differences in paint and revealing overpainting or concealed damage. They study the consistency of pigments of different centuries, of clays from different parts of the world, and of metals from different civilizations. They become familiar with ultrasonic methods of cleaning antique fabrics, and electrolytic methods of reversing the processes of corrosion. They can tell from the crystalline structure of a bit of metal how the object from which it came was fabricated. Visiting experts lecture in such areas as the anatomy of woods and deterioration in textiles.

But science and technology are not allowed to deflect the student's artistic orientation. He is admitted to the graduate program only if he can demonstrate trained ability as a painter, sculptor, or creative worker in others of the fine arts. A lecture on ceramic clays is followed by an afternoon at the Metropolitan Museum, watching an expert throw pots on the wheel. When the Florentine conservator Leonetto

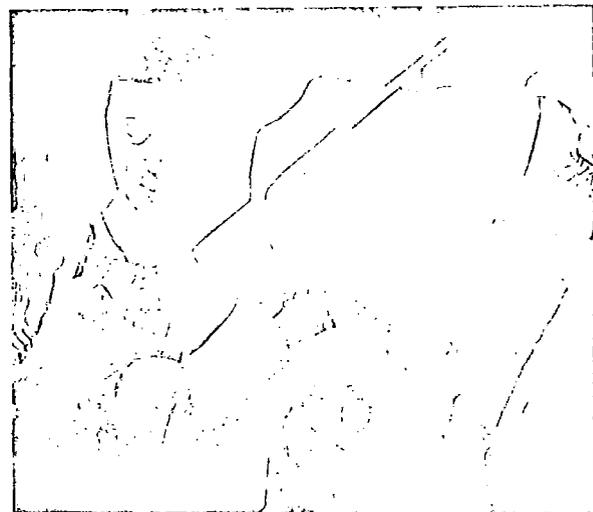
Tintori visited the center last fall to explain how he saved precious Pisan frescoes, damaged by fire bombs during World War II, he was able to demonstrate his techniques on a fresco executed competently by a student, Shirley Alexander.

Another student, Ben Johnson (the one who repaired the insect damage to the Spanish primitive), had as a second project restoration of a Henry Inman portrait, spoiled by a careless picture cleaner back in 1918. To accomplish his task, Johnson had to have the most exact knowledge of how Inman worked and the ability to reproduce Inman's style precisely. In returning the picture as far as possible to its original state, he followed Inman's technique with utmost care, working most of the time on tiny portions of the painting under a microscope.

The word "restoration" is used cautiously around the Conservation Center. As Johnson explained about the Inman portrait, "We would never reconstruct a damaged painting so completely if the owner (the Essex Institute of Salem, Mass.) weren't fully aware of our purpose and in agreement; if we didn't have a photo of the original painting to go by; and if the physiognomy of the subject were not an important historical feature of the painting. Otherwise it would be a matter of principle to reveal and preserve only what remains of the original."



Student applies wax infusion to consolidate peeling paint of polychromed Madonna and Child.



With spectrograph, trace elements of minerals can be identified in any art object, enabling experts to tell its age or place of origin. Light of electric discharge between electrodes, exciting tiny sample of the test-object, is projected through diffraction grating, which disperses rays into individual wave lengths.

What standards mean

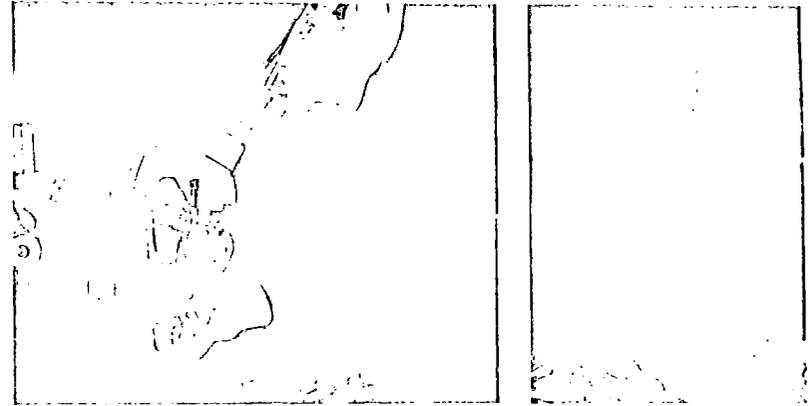
That matters of principle are kept in the forefront of every student's thinking is owing in no small degree to the importance placed upon them by a pleasant, goateed man of middle age who can be found sitting with the students in most of the classes, taking notes and asking questions as eagerly as the rest of them. This is Sheldon Keck, director of the Conservation Center. Formerly consultant on conservation problems to many museums and galleries, and formerly American representative of the International Institute for Conservation of Historic and Artistic Works, Keck is considered the foremost authority on scientific examination of art objects.

For Mr. Keck, the foundation of his profession is analysis—the analysis of works of art to understand their nature and the nature of each individual work. Understanding comes before treatment, as it does in medicine. The conservator must know the condition of a painting before he starts to work on it. He must



Printed on film, dispersed rays form narrow bands, with vertical lines indicating the presence of particular elements. Here Assistant Professor Jane Sheridan shows student Shirley Alexander spectrogram of white paint sample containing zinc, proving the sample was applied after the end of the eighteenth century, when zinc oxide replaced lead carbonate as pigment.

LEFT: Chemistry Professor Seymour Lewin examines African bronze miniature before deciding the best means of conservation. RIGHT: The miniature—a nineteenth-century Ashanti gold weight. Examination also gives clues to authenticity and place of origin.



be able to give museums that employ or consult him sure knowledge of what they are buying before they buy. He must know the full nature of a work of art before he can decide how to place it, cover it, and otherwise protect it for posterity.

The controlling ideal of the profession is in Keck's view the integrity of the work of art, as an aesthetic and historical record. Johnson's scruples about "restoring" the Inman painting only echo his director's teaching: "In dealing with any work of art, there are aesthetic values which cannot be restored and which we try to maintain, even when they are damaged. Such matters as the relation of colors, forms, and composition are expressive both of the artist and of the time in which he lived. The way he handled them should not be tampered with, any more than a modern editor has the right to change the words of Shakespeare or Keats."

Although the center has been in existence for only three years, it is widely known in the world of museums and galleries, and its students have trouble finishing their required four years of training, so eager are potential employers to hire them.

Charles Olin, now in his third year, has already accepted an invitation to work at the Smithsonian Institute in the capacity of analytical conservator. Ben Johnson is now in Florence taking an internship with Tintori. Shirley Alexander spent six weeks last

spring with archaeologists excavating a necropolis in Samothrace, taking responsibility for conservation of newly excavated pottery.

Luis Torres, a special student last year, went back to Mexico to take charge of a conservation laboratory at the Instituto de Anthropologia y Historia. At the conclusion of his training period Tai Young Lee, associate professor at the University of Seoul, will return to Korea to advise his government on the conservation of national monuments and historic buildings.

Museums and collectors in the United States spend well over twenty million dollars annually on works of art, and the value of American collections is in billions of dollars. Protection of these collections has been largely on an *ad hoc* basis, to deal with immediate emergencies. Now for the first time in this country it has become the central objective of an organized professional program conducted by a responsible graduate institution. If the Conservation Center at New York University can spread the gospel of professional standards in conservation, and increase each year the number of expert conservators, the preservation of our art heritage for future generations seems assured.