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CONSERVATION

The GCI Newsletter

CULTURAL HERITAGE UNDER FIRE

The Getty Conservation Institute Newsletter

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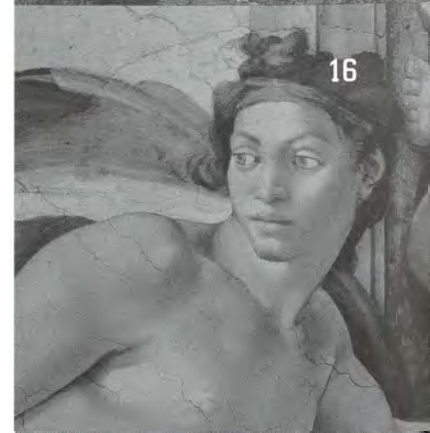
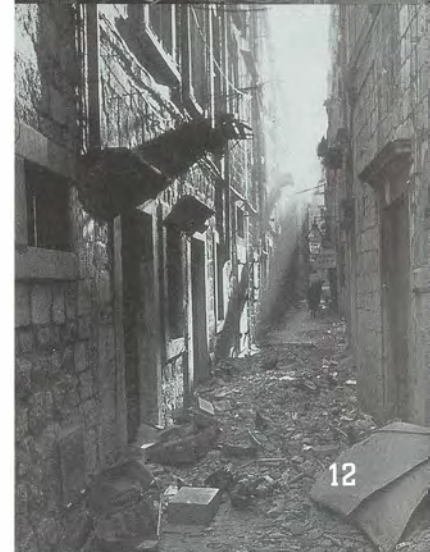
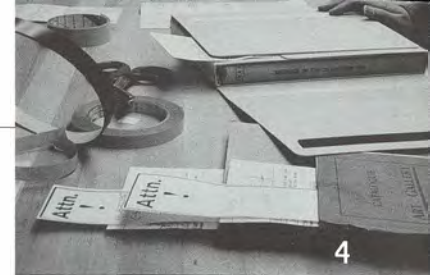
The Getty Conservation Institute is an operating program of the J. Paul Getty Trust. Other programs of the Trust are the J. Paul Getty Museum; the Getty Center for the History of Art and the Humanities; the Getty Art History Information Program; the Getty Center for Education in the Arts; the Museum Management Institute; the Getty Grant Program; and the Program for Art on Film, a joint venture with The Metropolitan Museum of Art.

Conservation, The GCI Newsletter is distributed free of charge three times per year, in English and Spanish, to professionals in conservation and related fields, and to members of the public concerned about conservation. The GCI works to develop a broad constituency for conservation and to promote an international appreciation of the value of our cultural inheritance and our shared responsibility for its preservation.

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Front cover: Building damaged by armed conflict in Croatia during the fall of 1991. Photo by Radovan Ivancevic. Back cover: Globe photo by Dennis Keeley.

Winter 1992



[contents]

FEATURE

4 PREVENTIVE CONSERVATION

Today many in the conservation profession recognize that if a major portion of our heritage is to survive, it must be cared for collectively. For the conservator that means turning some of his or her attention toward controlling the collections environment in ways that prevent or slow the deterioration of objects. This issue's feature explores the elements and advantages of preventive conservation.

PROFILE

8 PRESERVING THE COLLECTIVE MEMORY: A CONVERSATION WITH VALERY LEONOV

The Director of the Library of the Russian Academy of Sciences in St. Petersburg talks about the Library's recovery from a devastating fire in 1988 and the institution's place in the new political landscape.

NEWS IN CONSERVATION

10 EMERGENCY PREPAREDNESS AND RESPONSE

In a decision of significance to U.S. museums, the Federal Emergency Management Agency (FEMA) revises its policy regarding art objects damaged in disasters. The conservation of art works damaged during federally-declared disasters now will be eligible for funding. Preparing for emergencies, and responding effectively when they occur, is a critical component of collections care. The J. Paul Getty Museum and the GCI hosted their first joint workshop on emergency planning for museums, emphasizing the role top museum management plays in making preparedness a priority.

12 CULTURAL HERITAGE UNDER FIRE

As recent events in Yugoslavia demonstrate, the threat to cultural property from war remains intractable. The Convention for the Protection of Cultural Property in the Event of Armed Conflict, adopted in 1954 at a conference held under the auspices of UNESCO, is the most comprehensive international agreement on the subject to date. Why has the treaty failed to do its job—and can anything be done to strengthen it?

GCI NEWS

16 COURSES, EVENTS, AND PUBLICATIONS

Updates on recent GCI events, upcoming courses and conferences, and new publications.



VOLUME VII, NUMBER 1

In 1826, King Ludwig I of Bavaria began work on a new building to house his extensive collection of European paintings. The Alte Pinakothek was constructed on a site that was then well outside the city of Munich, a controversial decision at the time. One reason for the choice of location was simple: It was believed that the clean air would better preserve the paintings. The decision was, in a sense, an act of preventive conservation. ⁵ Until recently, conservation as a profession devoted itself almost solely to the care of individual objects. Mending or restoring an object—whether a Roman bronze, a painting by Rembrandt, or a Chinese textile—was the primary function of the conservator.

PREVENTIVE CONSERVATION

4



Above: Construction of archival boxes for books in the collection of the Getty Center for the History of Art and the Humanities. Materials in need of extra protection are boxed prior to shelving; some materials will receive further conservation treatment, depending on collection priorities and available resources. Right: Archival boxed collection materials in the storage area of the Getty Center. Photos: Dennis Keeley.

Today the demands for conservation can no longer be met satisfactorily by this approach. As both the number of museums and the number of objects within museums proliferate, concentrating exclusively on individual objects severely limits conservation care for the bulk of a collection. Even the most generously endowed institutions lack the financial and personnel resources to provide individual attention to every object in need. For those institutions with fewer funds, sustaining any conservation program remains a secondary or tertiary consideration. ⁵ If a major portion of our heritage is to survive, it must be cared for collectively rather than individually. For the conservator this means focusing on ways of preventing or slowing the deterioration of objects through control of the collections environment. It means, in short, preventive conservation. ⁵



ADVANTAGES AND OBSTACLES

Preventive conservation can be defined as any measure that prevents damage or reduces the potential for it. It focuses on collections rather than individual objects, nontreatment rather than treatment. In practical terms, the handling, storage, and management of collections (including emergency planning) are critical elements in a preventive conservation methodology.

In the long term, it is the most efficient form of conservation, not only for museums, but particularly for libraries and collections of ethnographic, natural history, and geologic materials. With comprehensive preventive conservation, the need for individual treatments can, over time, be reduced to more manageable levels, putting personnel and financial resources to more effective use.

Despite its advantages, preventive conservation even where understood is more accepted in theory than in practice. The rate of deterioration in a group of objects can be slow and not fully appreciated except over long periods. Because the deterioration rate is

difficult to quantify, the results of preventive conservation are not easily measured, nor are the results visually dramatic since preventive conservation does not involve improving the appearance of objects. In comparison, attending to the immediate conservation needs of an important or frequently exhibited piece can seem far more significant—and urgent.

There are other institutional issues as well: The focus, in this age of limited resources, is often on survival. While preserving collections is obviously essential, for many museums and other collecting institutions conservation is not the primary concern.

"Museums are trained to survive," observes Marta de la Torre, Director of the GCI Training Program. "In order to survive, you have to justify your existence. Organizing large exhibitions is much easier to justify than conserving objects—because, in fact, conservation is not an end in and of itself. It's something that you do so that you can use those objects for another purpose." By seeking to control a museum's environment, preventive conservation, in the short

term, can require a substantial outlay of funds. It means putting money into things that may have no visual impact, and therefore lack appeal to the public upon whose support the institution depends.

"The easiest thing in the world is to create a museum," says Paul Perrot, the director of the Santa Barbara Museum of Art. "The next easiest thing is to add galleries to it. But when it comes to the operation of these galleries—whether it's the guards, the curators, or the conservators—the funds are not there because there's no glamour to it."

These issues, while serious, are not likely to completely obstruct the movement toward preventive conservation, in part because few alternatives exist. Already there is a growing body of scientific research that is leading to practical applications. Nevertheless, for preventive conservation to be effective for a particular collection, technical knowledge has to be matched with an administrative commitment to integrate preventive conservation into an institution's operation.

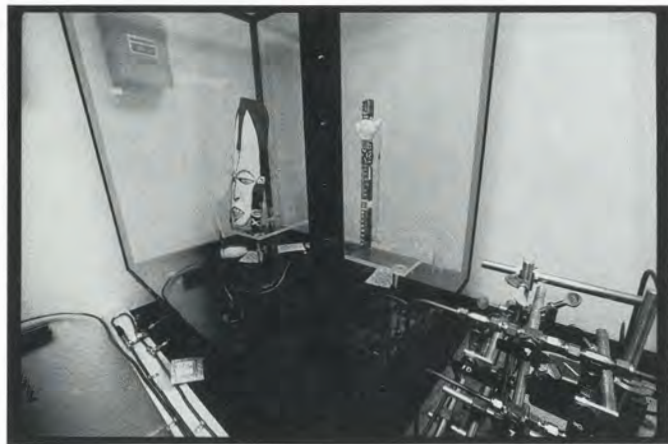
ACQUIRING TECHNICAL KNOWLEDGE

The scientific research framework for preventive conservation involves four progressive stages: 1) identifying threats to collections, 2) substantiating the risk, 3) identifying cost-efficient means to measure the risk, and 4) developing methods to reduce or eliminate the risk.

The basic problem for collections is object deterioration. "Objects deteriorate from either internal forces or external influences," explains Jim Druzik of the GCI Scientific Program. "Of those two, the external influences on an object are vastly larger than the internal instabilities. Things that have existed for half a millennium have very little residual internal instability—so when they begin to deteriorate, it's purely an environmental effect."

The first step, then, is analysis of the museum environment. It is precisely in this area that the GCI Scientific Program has concentrated much of its efforts. Following a 1984 study, with the California Institute of Technology, on the relationship between outdoor and indoor concentrations of ozone, the Institute examined a number of outdoor pollutants and their penetration into the museum environment, research also conducted collaboratively. These investigations led to a series of studies on indoor-generated pollutants. "More and more, indoor-generated air pollution is becoming an issue that the conservation field wants to have resolved," says Druzik. "It seems every time one turns around one sees a bronze or other susceptible material corroding in museum storage in what is supposed to be a stable environment. Corrodants such as formaldehyde, and formic and acetic acids are being liber-

6



Above left: Testing leakage rates in a hermetically sealed, nitrogen-filled display case. Originally developed to house royal mummies in the Cairo Museum, such cases combine nitrogen-purging with the use of oxygen scavengers to maintain inert atmospheres for the storage and display of fragile materials. Above center: Monitoring changes in humidity within archival boxes in response to changes in the RH of the surrounding air. Photos: Dennis Keeley.



ated by wood products and attacking a wide range of diverse materials."

With outdoor- and indoor-generated pollutants, a number of threats have been identified and the risks substantiated. The next stage—finding inexpensive means to measure the risks—has also been completed.

"We've identified, and called to the attention of the conservation field, low-cost, highly sensitive monitors," Druzik reports. "The next step is developing efficient, clever control techniques that can be applied in historic houses, older buildings, storage rooms, and display cases where the curator or conservator simply does not have the advantage of a full blown air conditioning system with particle and chemical filters built into it."

Microenvironments have been the subject of several GCI projects, including the development of a prototype display case for the Royal Mummies at the Cairo Museum and a study of the optimum storage conditions for the Dead Sea Scrolls at the Israel Museum in Jerusalem. The knowledge acquired in both projects has wider applicability for the preservation of organic materials.

In another area of preventive conservation research, the GCI conducted a joint study on pest control with the University of California, Riverside. The study quantified and confirmed the effectiveness of pure nitrogen as an "extremely promising" alternative to toxic chemical pesti-

cides in microenvironments. (See page 19 of this newsletter for further information.)

A major environmental factor for any collection is the design of the building housing it. Many of the world's museums and other collections are located in humid environments where North American and European design solutions to environmental control are too costly and architecturally inappropriate. Recognizing that much indigenous architecture is designed in a way to maximize human comfort with minimal mechanical systems (or none at all), the Institute has begun a study of passive and semipassive systems in tropical countries. Its findings could help lead to the development of cost-efficient environmental controls.

A BASIC APPROACH

Preventive conservation does not always require expensive or complex care strategies. In many institutions, much can be done by applying common sense.

For objects in storage, reducing the potential for physical damage can be achieved through such modest procedures as restricting access, exercising care in handling, and whenever possible placing objects in individual boxes or containers.

When it has been determined that some material within the museum environment is producing corrodants, the obvious course is to remove the offending material. If this is not easily done, either sealing off the material or placing some barrier around it can reduce the potential for harm. Alternatively, creating a protective barrier around the objects can help minimize long-term damage.

Routine building maintenance can serve the cause of preventive conservation. Insuring that windows and roofs are in good repair can prevent moisture damage and help moderate temperature fluctuations that place stress on objects. Keeping both exhibition and storage space clean and free from dust (as well as from insects and rodents) is essential. Improving ventilation and air circulation through the use of low-tech fans and filters will also benefit a collection.

THE MANAGERIAL COMPONENT

Because preventive conservation relies greatly on controlling the museum environment, it involves decisions beyond the conservator's traditional authority. "If you're going to control your environment you have to focus on

your building and the different envelopes of protection," says de la Torre. "It might be a question of reviewing the heating and air conditioning systems (if those exist), or creating new storage, or changing the exhibition cases, or controlling the visitor pattern. You have all these things that are really not within the realm of the conservator. It's an administrative decision."

Since 1987, the GCI has offered an annual course in preventive conservation to mid- and senior-level conservators. The approach is macro to micro, beginning with an assessment of the building envelope and working down to the creation of microenvironments. While technical information constitutes a major portion of the course material, the importance of conservators being skillful advocates of preventive conservation is also emphasized.

Kathleen Dardes, a conservator by training, coordinates the course. She believes that for preventive conservation to be incorporated into museum operations, conservators must not only develop collection care policies, but convince others of their necessity. "You can be as clever as possible when it comes to dealing with technical matters, but if you can't speak about these things to the director in language he or she can clearly understand—which means understanding the financial implications as well—and if you can't communicate to curators and exhibition designers, and if you're not prepared to work with museum colleagues, then nothing's going to happen. It makes no difference how much you know."

De la Torre concurs. "We need to start selling preventive conservation as a feasible and viable alternative to the management of collections," she says. "We need to start talking very convincingly to curators and museum directors, saying, if you're going to be putting new demands on the collections, you must make sure you're protecting them as well—and here are new methods of protecting them that are less expensive and more efficient."

At the same time, institutions need to foster a general appreciation of collections care. Lawrence Reger, director of the National Institute of Conservation in Washington, D.C., thinks the public has a genuine interest in the more "hidden" aspects of a museum's operation, and that institutions can do a better job of sharing the conservation process with the public. Reger believes museum patrons are now more receptive to supporting a museum's operational needs. "People want recognition," he explains. "I

think they're willing to take on the redoing of a store-room, as long as they get some kind of recognition. I think our goal has to be to promote this and help institutions bring this to the fore."

TO PRESERVE AND PASS ON

Like nature conservation, preventive conservation of cultural heritage requires a change in attitudes and habits. The first level of awareness is simply understanding what preventive conservation means; the second is accepting it as a legitimate collections care strategy. The final and most important stage is when preventive conservation becomes an integral part of an institution's consciousness and is put into practice routinely.

Within the last decade the number of U.S. organizations promoting preventive conservation awareness has grown. Their ranks include the American Institute of Conservation, the Institute of Museum Services, the National Gallery of Art, and the National Institute of Conservation (NIC). In 1990, the NIC and the GCI concluded a two-year project to develop a methodology for museum professionals to amass and evaluate information on the condition of their collections. The project report, *The Conservation Assessment: A Tool for Planning, Implementing, and Fundraising*, is now being used by museums and federal funding agencies in the U.S. as a basic guideline for undertaking conservation assessments. But preventive conservation holds perhaps the greatest potential for institutions located in less affluent regions of the world, where the funds and personnel for individual treatments are in short supply. As Reger observes: "In countries with very limited resources, this is, frankly, the best approach to take."

There is, however, no collecting institution that would not profit from a preventive conservation program. "After all," says Paul Perrot, "preserving cultural objects for the future is a fundamental part of a museum's mission. Our historic charge is to make sure that these resources are not only collected and studied, but preserved and passed on." For that reason, says Perrot, preventive conservation "is good business, as well as effecting an ethical concern for objects that are within our care....We will certainly not arrest the march of time, but we can slow it down sufficiently so that these objects can be more true to themselves in years to come." ■

O Z O N E A L E R T

Ozone, frequently employed by cleaning companies and rescue teams to combat odors resulting from fire or flood, is known to be a high risk chemical that should, **under no circumstances**, be applied to museums, libraries, or other irreplaceable collections. Though thought to be a modern and efficient cleaning agent, ozone is actually an irreversible and highly destructive treatment that can damage and even destroy cultural property.

For some time, scientists believed that ozone was dangerous principally as a secondary pollutant in urban air. In 1984 the Getty Conservation Institute and the Environmental Quality Laboratory of the California Institute of Technology undertook a three-year study of the effects of photochemical oxidants on artists' materials, with special attention to ozone and nitrogen dioxide. Results, published extensively in the literature, were conclusive that both pose major risks for collections.

Recent events, however, indicate that ozone continues to be used in some museums. Reports are coming in from institutions in the U.S. and in Europe that ozone is still proposed for use in air conditioning systems and as a cleaning agent for smoke and water damaged materials. In one recently reported case, ozone-induced destruction of objects made of cellulose, silk, wool, leather, and metal led to litigation.

Ozone should not be used near materials of value, whether natural or cultural, organic or inorganic. For further information, please feel free to contact James R. Druzik, Conservation Scientist, the Getty Conservation Institute.

Preserving the Collective Memory

A CONVERSATION WITH VALERY LEONOV, DIRECTOR OF THE LIBRARY OF THE RUSSIAN ACADEMY OF SCIENCES

8

The Library of the Russian Academy of Sciences, known as the Biblioteka Academia Nauk (BAN), was founded by Peter the Great in 1714 to house materials collected during his foreign travels. A center for international scholarship, it became the first institution of the Academy of Sciences in 1725. Today, it is the largest academic library in the world, with holdings of over 20 million and partnerships with 3500 institutions in more than 100 countries. The central facility, located in St. Petersburg, has a staff of 930. On February 14, 1988, BAN suffered the largest library fire of this century. Some 400,000 books were destroyed and an estimated 3.6 million were damaged, including the famous Baer collection, named for the German scientist who catalogued Peter the Great's foreign materials. Dr. Valery Leonov and his staff moved swiftly to minimize losses. This four-year recovery campaign, mounted by Russian and foreign experts, is resulting in the region's first program of preventive conservation and collections management. On the fourth anniversary of the fire, Dr. Valery Leonov discusses BAN's present and future.

Jane Slate Siena: BAN has had a rich history, beginning as Peter the Great's library and becoming the world's largest academic library as part of the U.S.S.R. Academy of Sciences.

Valery Leonov: Yes, rich and dramatic. The Library was damaged by three serious fires—in 1747, 1901, and 1988—and by artillery attack in 1942. Our central facility opened on the eve of WWI in 1914 and was used as a hospital in 1918. During WWII, BAN, the Philharmonic, the theatres, and the State Public Library were open to the public as places of refuge. We were a home to our staff during the 900 days and nights of the Siege of Leningrad. Half died of starvation and disease, but many were able to continue their work. We have a history of endurance during difficulties.

You have experienced critical political difficulties during this century.

BAN was originally created as an international place where intellectual life flourished. Many foreign scholars worked at BAN during the 18th and 19th centuries. BAN became known as an important archive of material from many cultures. In the 1920s, the Communist Party leaders became suspicious and, in December 1929, arrested our first elected Director and 422 Academy members as "enemies of the people." From then until 1991, it has been difficult to keep up with international developments in our fields of study.

What has been the impact of the profound political changes of 1991 on cultural organizations in the Commonwealth nations?

It is still evolving. In our case, we do not yet have funding from the new Academy of Sciences of the new Russia. We have, however, gained democratic privileges regarding the collections. Since the victory in August 1991, St. Petersburg has become a more democratic city and, in my opinion, a city that is more open than, say, Moscow. Because of our particular history, we

have many cultural resources of world interest. We have, for example, two of the world's largest libraries—BAN, and the Saltykov Shchedrin Public Library—which together contain over 50 million holdings.

The fact that we have renamed our city St. Petersburg is a profound move. Remember that St. Petersburg was not named for Peter the Great, but for St. Peter. By reclaiming this heritage,

we are recognizing a time when the arts, sciences, and intellectual life were important and not overruled by political concerns. To reverse the experience of the past 70 years, we need to feel our roots and celebrate our background.

What is the reality of cultural institutions during the present economic climate?

Things are bad and are likely to become worse. I have tried to estimate the situation, but it is difficult to know. Because of the present difficulties, people actually think that we can stop working in our libraries—stop cataloguing, conserving, exchanging publica-

tions, etc. Closing our cultural institutions, which leaves them vulnerable to theft and deterioration, is not the solution. We must protect our heritage by finding the necessary expertise and collaborating with colleagues in other parts of the world. We can no longer survive as soldiers of ideology. We need more sophisticated and secure ideas. People today speak a lot about culture. It is the cultural life that will give us the strength to transcend the difficulties of the moment. The situation could become tragic; history is at stake if libraries do not survive.

You've been very generous in sharing your experiences after the fire in 1988 and now in 1992. Why?

Library science is an international science. There is no Soviet, Russian, or American librarianship—only a single science. In all cultures, internal problems can influence our perspectives. Our



Library is a good example. We saved our Library after the 1988 fire with international assistance from many libraries and foundations. We are now again in a unique moment. During 1991, we gained democratic privileges, but our professional and technical expertise has not kept pace with international developments. By continuing our collaboration with others, we will have a chance to develop.

What do the libraries in Russia need most at the moment?

Our large cultural institutions are experiencing dramatic problems—thrift, deterioration, understaffing, and institutional survival. We have a tradition of professional exchange, but it needs to be strengthened. We need more trained specialists in conservation, materials, equipment, and policies that help us manage our information systems within local and global contexts. Thanks to the Academy of Sciences, we recently installed our first fire suppression system at BAN. There is no such thing at the Public Library, the Hermitage, the State Museum, or at other major institutions here. We need to carefully select our priorities and develop long-term preservation plans.

Tell us about your recovery effort and its effect on the Library programs and staff.

The recovery effort has forced us to think about the state of the facility and its collections. In 1988, we were not prepared to cope with the mass destruction of millions of objects. We undertook the necessary emergency measures to freeze some materials and to begin slowly drying others. We have completed our systematic inventory and have installed the fire suppression system. In the process, we have developed a program of phased conservation, which efficiently addresses the conservation problems of collections as opposed to individual objects. For this, we are greatly indebted to Peter Waters from the Library of Congress and Frank

Preusser from the Getty Conservation Institute, who are helping us understand the environment and the technology.

The central facility was planned for 6 million items, but now we have more than 12 million. The special holdings department is 3 to 4 times smaller than necessary. Since undertaking our intense four-year recovery effort, it would be self-deception, an imitation of work, to continue working in this same situation. We have made adjustments. For example, the second reading room is closed and used for the inventory project. We have plans for new facilities and are appealing to the local authorities for support.

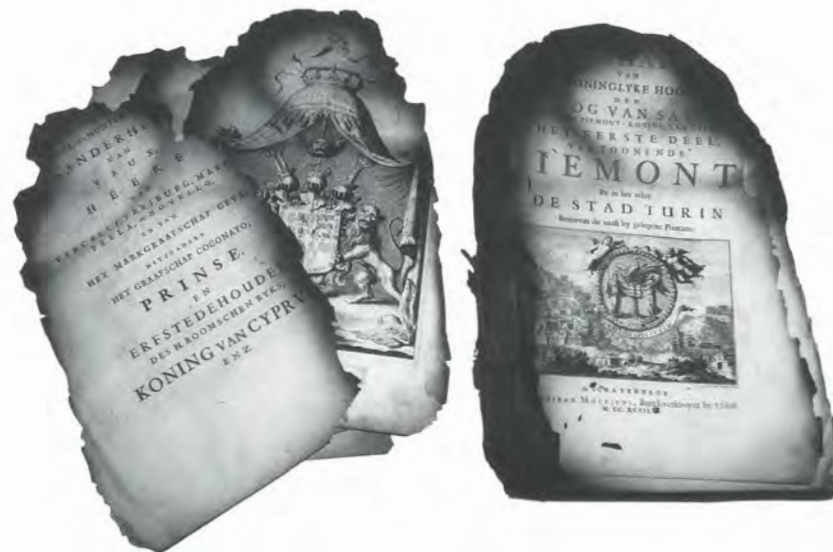
Finally, we have learned that these problems have solutions that must get into the administrative functions of our libraries and into the educational system.

Has the visibility of the fire helped you to find support for BAN?

Yes, the experience gave us strength. In spite of some negative public opinion, we continued to work because we knew that we needed at least 3 to 4 months to show what we could do in professional terms. People came to understand that we organized the best professional approach that was possible under the circumstances, with assistance from Russian and foreign experts. In so doing, we gained confidence in our abilities.

What do you see for the 21st century?

More conservation resources, not less, will be necessary. Major libraries are being built or expanded, which further presses our capability to preserve material and manage information. In 1987, China's National Library, the largest in Asia, opened with 50 million volumes. The new Bibliotheque de France (20 million volumes), the new building of the Deutsche Bibliothek (18 million volumes), and the Alexandria Library in Egypt are all scheduled to open in 1995. The new building of the British Library



In the midst of global changes, libraries are the memory of a society, the memory of the world. To live in an information society, we must establish common systems of communication and information exchange. Our major libraries must be protected and supported if our collective memory is to be preserved. ☞ Valery Leonov

opens in 1996. The Arab Library in Algeria is in development. Problems of conservation, safety, and security are the library issues for the next century.

What is your vision for the future of BAN?

Cultural organizations in the Commonwealth nations must look for opportunities to cooperate with government and private organizations around the world. Our extraordinary cooperation with the Getty Conservation Institute, the Library of Congress, and the Readers Digest Foundation is an important precedent. Culture united us. I do not believe that we have had this before in our history. Cooperation such as this can change traditions in both of our countries.

I feel very fortunate to be BAN's Director at this time. We need a Center for Preservation Technology to provide conservation support to others and to reinforce the changes that need to occur in Russian institutions. We must be optimistic. Because of these opportunities, I am the happiest man you can imagine. ☞

Dr. Valery Leonov was appointed Director of BAN in 1988, after serving as Deputy Director for Library Sciences and Research. He holds a Ph.D. in Library Science from the State Culture Institute, where he served on the staff for almost two decades. He is the author of more than 50 publications.

Jane Slate Siena is Head of Institutional Relations at the GCI and coorganizer of "Conservation and Disaster Recovery: International Cooperation at the Library of the Soviet Academy of Sciences," an international seminar held in St. Petersburg in September 1990 sponsored by BAN, the Library of Congress, and the GCI.

Facing page: Valery Leonov addresses the conference on "Conservation and Disaster Recovery" held in St. Petersburg in September 1990. Photo: Jane Slate Siena. This page: One of 4 million books damaged or destroyed by the 1988 fire at BAN. Photo: Irina Averkieff.

EMERGENCY PREPAREDNESS AND RESPONSE

NEW POLICY AT FEMA

IN A DECISION OF SIGNIFICANCE TO U.S. MUSEUMS, THE Federal Emergency Management Agency (FEMA) recently revised its policy regarding art objects damaged in federally declared disasters, announcing that the conservation of these art works will now be eligible for funding.

The policy change was triggered by a request from San Francisco's Mexican Museum when its collection sustained damage during the 1989 Loma Prieta earthquake. FEMA initially declined to reimburse the museum for the cost of repairing and restoring damaged pieces. This ruling was based on existing policy which, in making eligibil-

ity determinations, distinguished between building contents (i.e., furnishings) and objects of art. The repair of art objects did not fall within the eligibility guidelines.

However, in reviewing the Mexican Museum's appeal of the judgment, FEMA concluded that extending federal disaster assistance for conserving art was indeed appropriate. While FEMA funds will not be provided to replace objects that have been "completely destroyed," it will offer assistance "for the purpose of 'conservation' of damaged pieces. Basically, we agreed to allow for payment of the restoration of these objects, realizing that they could not be replaced," explains Richard W. Krimm, Deputy Associate Director for State and Local Programs at FEMA.

In recent years, the conservation community, including the GCI, the National Park Service, the National Institute for the Conservation of Cultural Property, and the American Institute for Conservation have explored with FEMA the financial and technical needs of museums in the aftermath of disasters. According to Krimm, the policy shift reflects the continuing interest of FEMA's leadership in protecting cultural property.

"We're trying to do what we can to both protect and restore historical buildings and protect artifacts," says Krimm, who served on the GCI Disaster Planning Steering Committee in the mid-1980s. "We're working with others trying to get museums and historical buildings to at least be aware of their hazards and of some of the things they can do to minimize damage. That's a very major effort."

Damage caused by the 1989 Loma Prieta earthquake in San Francisco. The Palace of Fine Arts is visible in the background. Photo: P. F. Bentley, Black Star.



FIRE, FLOODING, EARTHQUAKES, AND CIVIL DISTURBANCES are among the items in the catalogue of catastrophes that potentially can strike museums and other collecting institutions. Because preparing for emergencies—and responding effectively when they occur—is a critical component of collections care, the J. Paul Getty Museum and the GCI offered their first joint workshop on emergency planning for museums, conducted in January of this year.

The directors of eight California museums gathered at the GCI in Marina del Rey and at the J. Paul Getty Museum in Malibu to hear first-hand accounts of how institutions in Chicago, Louisiana, and San Francisco coped during real-life disasters, and to learn about the Getty's comprehensive emergency plans and drills. The principal aim of the workshop was to emphasize the role that top museum management plays in making preparedness a priority. For that reason, participants were limited to museum directors and one or two members of their senior staff whose input would be essential to a museum's emergency plan.

As Miguel Angel Corzo, Director of the GCI, explained to the participants during the opening session, "It is the museum director who must make emergency preparedness a priority within the museum in the first place; it is not a decision that can be delegated." The director, Corzo said, is the only one who can make emergency planning an integral part of preventive conservation and museum management. "Although you may or may not be directly responsible for drawing up the plans yourself, it will be up to you as the director—and solely up to you—to get the ball rolling. It will be up to you to determine the philosophy and approach that your museum will take in preparing for and possibly responding to an emergency, taking into account the particular characteristics of your institution. Without your interest and your involvement, it simply won't happen."

In addressing the group, John Walsh, Director of the J. Paul Getty Museum, observed that although the reasons for preparedness were self-evident, resistance to emergency plans in museums—including drills, practice sessions, and staff training—remained. "I think it's that familiar combination of avoidance and denial," he said. "After all, emergency planning is just one more big job, a

job, moreover, that costs time and money without any visible outcome—at least we hope not." Nevertheless, Walsh said that emergency planning was "a matter of common sense and responsibility."

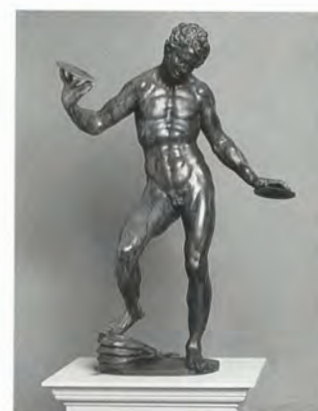
It can also, he pointed out, be a positive experience in unexpected ways. "At the Getty we find that the process of planning for disasters has some surprising side benefits. The working groups who develop the plan together learn a lot about each other's work and a lot about each other generally. You get real solidarity out of the process." In addition, he said, the museum staff is reassured by the planning process. "There's the important subliminal message for the staff that the museum is making a conscientious effort to care for its visitors, its collections—and them."

The workshop included a tour of the J. Paul Getty Museum to view emergency preparations, including measures developed to protect every object in its collections, whether on display or in storage, from earthquake damage.

The Museum developed its first emergency plan in 1986. A year later, it joined with the GCI and the University of Southern California in a two-year research project to evaluate the effectiveness of its seismic damage mitigation measures. The results of that study, available from the GCI Scientific Program, include general guidelines for evaluating the seismic vulnerability of objects.

In addition, the GCI, along with the National Academy of Sciences and the Earthquake Engineers Research Institute, has participated in selected emergency response missions in the wake of such disasters as Hurricane Hugo and the Loma Prieta earthquake. It has also assisted in missions organized to cope with disasters at individual institutions, including the flood in the Carillo Gil Museum in 1987, and the 1988 fires at the Louisiana State Museum and the Library of the Soviet Academy of Sciences (now the Russian Academy of Sciences; see *Profile*, page 8) †

EMERGENCY PLANNING IN MUSEUMS

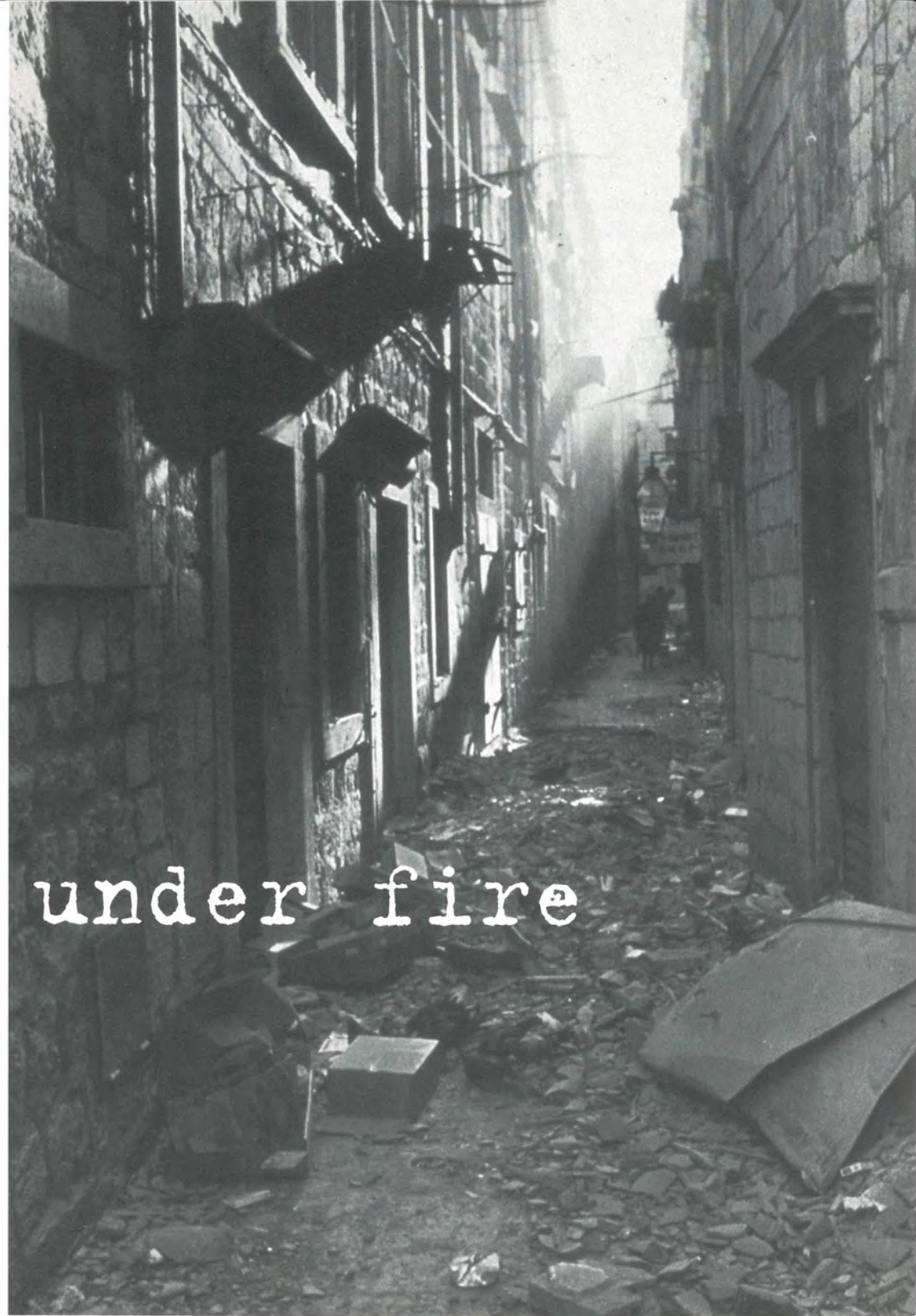


Left: Juggling Figure by Adriaen de Vries, supported during insertion of a locking mechanism, composed of aluminum and two-part epoxy putty. Right: The sculpture is bolted securely to its display pedestal, which has an internal box that is bolted to the floor. Photos: Louis Meluso, J. Paul Getty Museum.

Cultural heritage under fire

Though the Hague Convention has been part of the traditional military training curriculum in Yugoslavia, its lack of enforcement has led to widespread destruction of historic monuments.

Historians and artists are reporting that the Convention symbol, placed on historic buildings for protection, is actually being used as a target for violence in "cultural warfare and terrorism."



AS RECENT EVENTS IN YUGOSLAVIA grimly demonstrate, the fading of East-West tensions that dominated international political relations during the latter half of the 20th century has by no means signaled the end of armed struggles. Croatian and Serbian communities have witnessed the indiscriminate and tragic loss of human life. Lost, as well, have been the architectural and artistic treasures of centuries.

Those charged with the preservation of cultural property confront many adversaries. Natural disasters, corrosive environments, and human ignorance all threaten our artistic and historical heritage. But the threat to cultural property from armed conflict remains particularly intractable and disturbing.

The Hague Convention of 1899 and the Roerich Pact signed in Washington, D.C. in 1935 were the first major international agreements to create measures designed to protect sites and cultural property during war. They were followed by the Convention for the Protection of Cultural Property in the Event of Armed Conflict, adopted in 1954 at a conference at the Hague held under the auspices of UNESCO. Although nearly half of the 166 member states of the United Nations are signatories to the Convention, there are some prominent exceptions: the United States, the United Kingdom, the People's Republic of China, and Japan have yet to join.

The 1954 treaty—which includes general provisions for protecting cultural property, reporting mechanisms, and specific procedures



to be invoked during armed conflict—remains the most comprehensive international agreement on the subject. Nations that have ratified the Convention are required during peace time to register the cultural property within their borders, and in times of conflict to respect the cultural property of other nations. Among other things, the pact mandates its members “to prosecute and impose penal or disciplinary sanctions upon those persons, of whatever nationality” who either order or commit violations of the treaty.

Even among its signatories, the Convention has been applied infrequently. According to reports submitted to the Director-General of UNESCO, breaches of the treaty have occurred in such instances as the Turkish bombardment of Paphos, Cyprus in 1974, and military operations in and around the archaeological site of Tyre during the 1982-83 conflict between Israel and the Palestine Liberation Organization in Lebanon. During the Iran-Iraq war of the 1980s, Iran reported Iraqi shelling of cultural and historic sites in Abadan and Shush. Iraq refused to

mark its own sites with flags containing the emblem designated by the Convention “because this emblem may be seen by aeroplanes not only by the missiles and artillery, which attack the Iraqi towns with no exception.”

During the more recent conflict in the Persian Gulf, Iraq violated the Convention both in its placement of war planes at the archaeological site of Ur and in the looting by Iraqi forces of the 30,000-piece Islamic art collection in Kuwait’s National Museum.

In a 1983 report to UNESCO’s Director-General, a group of legal experts acknowledged that the Convention “had not been effective enough, owing, particularly, to the States having lost interest in it.” The group recommended organizing a conference of UNESCO members to revitalize the Convention and to direct public attention to the issue. No conference was convened. Instead, the following year a ceremony was held commemorating the 30th anniversary of the adoption of the Convention.

Despite its poor record of achievement, the 1954 Convention is unlikely to be superseded by stronger international legislation. “The document is not ideal,” observes Bonnie Burnham, executive director of the World Monuments Fund, “but it’s probably the best we’re going to get. I think it would be fruitless to draft new legislation. We ought to work within the framework that exists.”

The framers of the Convention actually contemplated the kind of internal conflict that began in Yugoslavia in 1991. Article 19 of the treaty states:

In the event of an armed conflict not of an international character occurring within the territory of one of the High Contracting Parties, each party to the conflict shall be bound to apply, as a minimum, the provisions of the present Convention which relate to respect for cultural property.



"Over 500 major edifices in Yugoslavia have been damaged in one way or another," reports Bonnie Burnham, executive director of the World Monuments Fund. "It's hard to imagine how all of that is going to be put right."



Yugoslavia, it should be noted, is a signatory to the Convention. Some suggest that the Convention's effectiveness could increase if important nonsignatories not only ratified the pact, but promoted stricter adherence to its requirements. "The Convention would have more prominence and clout if the major western countries participated," says Burnham.

One obstacle to stricter enforcement is the failure of a great many of the signatories to fully register their own cultural sites, as required by the Convention. If called upon to immediately flag all the sites protected under the treaty's terms, many countries would have difficulty doing so. Creating more complete national cultural inventories is clearly a

priority. One suggestion has been the use, during peacetime, of military resources such as satellite mapping to identify and inventory sites.

Another proposal for strengthening the 1954 Convention is the creation of a unit of cultural property specialists as part of any U.N. peacekeeping force. The treaty itself envisions something similar



in Article 7 when it calls upon signatories to:

undertake to plan or establish in peacetime, within their armed forces, services or specialist personnel whose purpose will be to secure respect for cultural property and to cooperate with the civilian authorities responsible for safeguarding it.

There is precedent for the kind of services described in Article 7: During World War II, both the United States and British armies had Monuments, Fine Arts, and Archives (M, FA, and A) units, small military contingents which had the primary function of preserving and conserving cultural heritage in the midst of combat and occupation.

The success of these units nearly 50 years ago is encouraging to those who believe that a unit of specialists should routinely be included in the assembly of U.N. peacekeeping forces. Because civilians such as relief and health workers are already a component of these forces, proponents believe that it would be relatively simple to include civilian specialists in



art, architecture, archaeology, and conservation. Still, such specialists would only become involved once damage or loss has occurred. The real challenge is preventing damage or loss by creating an abiding and universal sense of respect for the artistic and historical heritage of all cultures.

As long as warfare remains the last resort for civil and international conflict resolution, cultural property will be caught in the cross fire. The international cultural and conservation communities will need to develop more effective means to protect cultural property and more powerful ways to deter those who, in the process of waging war and destroying lives, also diminish a cultural heritage that transcends borders and political grievances. ■

All photographs in this article were taken by Radovan Ivancevic in Yugoslavia in the fall of 1991.



G C I NEWS

U P C O M I N G C O U R S E S

PREVENTIVE CONSERVATION

The GCI's annual course on preventive conservation will be held May 4-20, 1992. The principal aim of the course is to provide the latest technical information on control of the museum environment and to encourage the implementation of preventive conservation practices. Since conservators must be adept as managers and advocates in order to be effective in establishing preventive conservation as a priority, the course will consider the organizational context in which conservation issues exist and, through case studies and exercises, emphasize problem solving.

Designed for mid- to senior-level conservators, the course has been increased from 10 to 13 days to include a number of new sessions on the environmental concerns of exhibitions and the packing and transport of art objects. In addition, the session on aesthetic, low-level lighting has been expanded.



DINGEMAN KALIS



ON-SITE CONSERVATION OF EXCAVATED ARCHAEOLOGICAL MATERIALS

Organized by the Department of Antiquities of Cyprus and the GCI, this three-week course, to be held May 11-29, 1992, will take place on the site of excavations being directed by Dr. Demetrios Michaelides in a Roman villa in Paphos.

The course is designed for conservation technicians in supervisory positions who have practical experience both in museums and in the field in the conservation of excavated archaeological materials, but who do not have extensive professional training in this area. The objective of the course is to improve the conservation technicians' abilities in the safe retrieval, handling, transportation, storage, and conservation of excavated archaeological materials.

Course work will take place in conjunction with the archaeological excavation and will be complemented with lectures, discussions, demonstrations, and on-site practices. The principal instructors will be Claire Dean, of the University of North Dakota, and Andreas Georgiades, of the Department of Antiquities of Cyprus.

16

RECENT METHODS IN THE LINING OF PAINTINGS

The GCI and the Royal Danish Academy of Fine Arts School of Conservation will conduct a course on "Recent Methods in the Lining of Paintings" on August 3-21, 1992, at the School of Conservation in Copenhagen.

A small number of senior-level paintings conservators from Czechoslovakia, Hungary, Poland, Romania, and Yugoslavia will be selected for the course, with preference given to candidates who teach conservation. Participation will be limited to those who are employed by museums or teaching institutions, have at least five years of experience, and are nominated for attendance in the course by the directors of their institutions.

Course topics will include: methods of preparing paintings for lining, stabilization of paintings, lining of paintings, and the principles and use of suction equipment in the lining of paintings. The instructors include Steen Bjarnhof, Head of the Paintings Conservation Department at the School of Conservation; Mikkel Scharff, Paintings Conservator and Lecturer at the School of Conservation; and Wieslaw Mitka, designer of suction equipment. The course will be taught in English.



R E C E N T C O U R S E S

CONSERVATION OF STONE IN ARCHAEOLOGICAL AND HISTORIC MONUMENTS

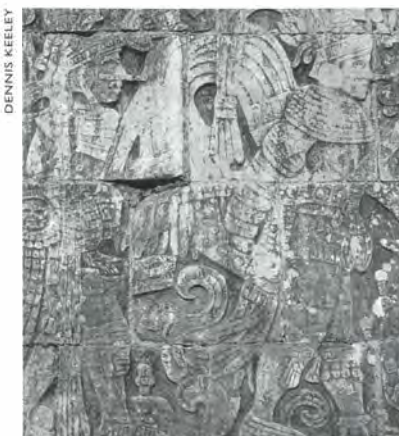
Last fall the GCI joined with the Fundación Mexicana para los Monumentos del Mundo and the University of Oviedo, Spain, to sponsor a course in stone conservation for architectural conservators involved in caring for Latin American stone monuments. The course, which ran from September 23 to October 11, was held in Puebla, Mexico at the Fundación Mexicana's Center for Research and Conservation of Cultural Patrimony.

Discussions on the technical, evaluative, and ethical foundations of stone conservation were designed to improve the ability of the participants to make informed decisions about documentation, diagnosis, analysis, intervention, and preventive maintenance.

Course participants included 20 professionals from 11 Latin American countries: Argentina, Bolivia, Brazil, Chile, Colombia, the Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, and Nicaragua. Dr. Rosa Maria Esbert of the University of Oviedo was the head instructor for the course. Additional faculty and speakers included specialists from Spain, Italy, and Mexico, as well as several members of the GCI staff.



DENNIS KEELEY



DENNIS KEELEY

17

U P C O M I N G E V E N T S

CONFERENCE ON THE CONSERVATION OF GROTTO SITES

Conservation of Ancient Sites on the Silk Road: An International Conference on the Conservation of Grotto Sites is being planned for October 10-15, 1993, in Dunhuang, the People's Republic of China. Organized by the Dunhuang Academy, the GCI, and the Chinese National Institute of Cultural Property, it will include presentation of papers as well as site visits to the Mogao Grottoes.

For a number of years, the GCI, the State Bureau of Cultural Relics of the People's Republic of China, and the Dunhuang Academy have been working collaboratively on conservation of the Mogao Grottoes. The Grottoes, carved and painted over a period of centuries beginning in A.D. 366, are a World Heritage Site. The conference is being organized to exchange ideas, experiences, methods, techniques, and research findings on the conservation and management of grotto sites—particularly Buddhist sites along the Silk Road. The carved rock grotto caves of India, China, Korea, Japan, and southeast Asia are an important class of cultural sites whose similar attributes derive from shared historical and cultural traditions.

Organizers are inviting participation from a diverse group of specialists in cultural site conservation and management, with the aim of encouraging international dialogue and forging closer collaboration among professionals from East and West. Professionals directly engaged in grotto site conservation and management, as well as those with experience with other classes of cultural sites, are encouraged to participate. For additional information on the conference, contact Neville Agnew, Special Projects Director for the GCI.

GUILLERMO ALDANA



RECENT EVENTS

SYMPOSIUM ON THE CONSERVATION OF CULTURAL PROPERTY IN ASIA AND THE PACIFIC

On September 7-13, 1991, a major symposium on cultural property conservation in Asian and Pacific countries was held in Honolulu, Hawaii. The purpose of the event, organized by the GCI, USIA and US/ICOMOS, was to provide a forum for dialogue among specialists and policy-makers on conservation issues of the Asian Pacific Rim.

Fifty individuals from various nations of the Pacific Rim participated in the symposium. Among the issues addressed in the presentations and discussions were factors that threaten cultural property (including the impact of policy on cultural properties protection) and practical means of providing for the protection of cultural resources. In addition to speeches, general discussions, and workshops, the symposium included visits to selected sites.

Because of the considerable interest in the material and ideas offered at the symposium, a publication including the presentations, commissioned papers, and summaries of the participants' discussions is now being prepared. Publication is anticipated later in the year.



IRINA AVERKIEFF

18 ANCIENT AND HISTORIC METALS: CONSERVATION AND SCIENTIFIC RESEARCH

An international conference on ancient and historic metals was held at the J. Paul Getty Museum on November 21-23, 1991, jointly sponsored by the Museum and the GCI. The conference specifically addressed conservation treatment, technology, and examination of metallic objects, rather than concentrating on archaeometallurgy or the extraction of metals, which have been the subjects of conferences held elsewhere.

Approximately 180 participants heard a wide variety of papers delivered by prominent conservators and conservation scientists from Australia, Denmark, France, Germany, England, Italy, Switzerland, and the United States. Among the subjects addressed during the conference were: the conservation of the equestrian bronze of Marcus Aurelius, presented by Dr. Maurizio Marabelli of the Istituto Centrale del Restauro, Rome; the conservation of outdoor zinc sculptures, presented by Carol Grissom of the Smithsonian Institution; an account of architectural metalwork and the conservation of the Rookeries ornamental ironwork, presented by Frank Matero of the University of Pennsylvania; the conservation of metals from underwater sites, presented by Ian MacLeod of the Western Australian Maritime Museum; the technology of Chinese bronze casting and the patination of Chinese bronzes, presented by Thomas Chase of the Freer Gallery of Art; and the technology of gilding in the 18th century, presented by Martin Chapman of the Los Angeles County Museum of Art. The proceedings of this comprehensive conference will be published by the GCI.

In his opening remarks to the gathering, Harold Williams, President and CEO of the J. Paul Getty Trust, welcomed the participants and spoke about the importance of such programs for the advancement of conservation.

Photos, from left to right: National Museum of African Art, Freer Gallery of Art, J. Paul Getty Museum.

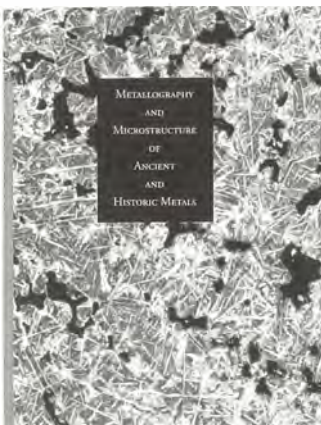


METALLOGRAPHY AND MICROSTRUCTURE OF ANCIENT AND HISTORIC METALS

David A. Scott, Head of Museum Services for the GCI, provides a detailed introduction to the structure and morphology of ancient and historic metallic materials. Much of the scientific research on this important topic has been inaccessible, scattered throughout the international literature, or unpublished; this volume, although not exhaustive in its coverage, fills an important need by assembling much of this information in a single source.

Jointly published by the GCI and the J. Paul Getty Museum, the book deals with many practical matters relating to the mounting, preparation, etching, polishing, and microscopy of metallic samples and includes an account of the way in which phase diagrams can be used to assist in structural interpretation. The text is supplemented by an extensive number of microstructural studies carried out in the laboratory on ancient and historic metals. The student beginning the study of metallic materials and the conservation scientist who wishes to carry out structural studies of metallic objects of art will find this publication quite useful.

This 176-page book includes 20 color plates, 143 black-and-white illustrations, and 49 drawings. It can be ordered from the J. Paul Getty Trust Publications Distribution Center (see accompanying book order form or call 310-453-5352).



THE CONSERVATION OF WALL PAINTINGS

The Sistine Chapel, the Brancacci Chapel, and the Tomb of Nefertari are among the well-known wall paintings discussed in this book by international experts in wall paintings conservation. The special problems associated with the protection of works such as these are explored from the perspective of diagnosis, documentation, treatment, and monitoring. A definitive paper on the effects of salts on wall paintings is also included.

This publication is the result of a symposium organized by the GCI and the Courtauld Institute of Art in London in 1987.

Because the conservation of wall paintings requires an interdisciplinary approach, the purpose of the symposium was to facilitate the exchange of information among international conservators, scientists, and historians involved in major wall paintings conservation projects. The interdisciplinary nature of contemporary wall paintings conservation is reflected in this volume which contains the symposium's papers.

Edited by Sharon Cather of the Courtauld Institute, this 130-page book includes 60 color plates and 85 black-and-white illustrations. It can be ordered from the J. Paul Getty Trust Publications Distribution Center (see the accompanying book order form, or call 310-453-5352).



N.T.V., TOKYO AND THE VATICAN MUSEUMS

GCI SCIENTIFIC PROGRAM REPORTS

The GCI SCIENTIFIC PROGRAM REPORTS are a series of publications describing the results of selected research projects. Unlike the RESEARCH IN CONSERVATION series, these are final reports, essentially unabridged and frequently containing most, if not all, of the original data. This spring we offer four new volumes available from the J. Paul Getty Trust Publications Distribution Center.

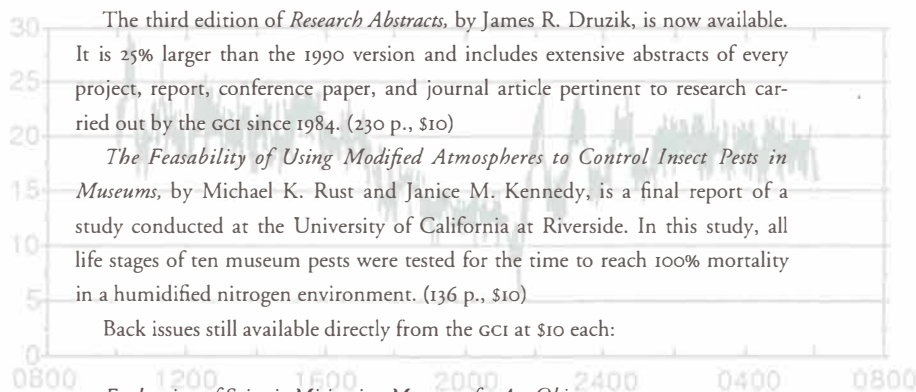
Principles of Experimental Design for Art Conservation Research, by Terry J. Reedy and Chandra L. Reedy, covers both practical and statistical aspects of experimental design, as well as laboratory experiments on art materials and clinical experiments with art objects. The material should be useful to working conservators and conservation scientists. (114 p., \$10)

Protection of Works of Art from Soiling Due to Airborne Particulates; by William W. Nazaroff, Mary P. Ligocki, Lynn G. Salmon, Glen R. Cass, Theresa Fall, Michael C. Jones, Harvey I. H. Liu, and Timothy Ma; seeks to understand the rates and fates of airborne particles as they enter the museum environment. Strategies are designed to mitigate soiling, based on data taken from detailed studies of five Southern California museums. (341 p., \$15)

The third edition of *Research Abstracts*, by James R. Druzik, is now available. It is 25% larger than the 1990 version and includes extensive abstracts of every project, report, conference paper, and journal article pertinent to research carried out by the GCI since 1984. (230 p., \$10)

The Feasibility of Using Modified Atmospheres to Control Insect Pests in Museums, by Michael K. Rust and Janice M. Kennedy, is a final report of a study conducted at the University of California at Riverside. In this study, all life stages of ten museum pests were tested for the time to reach 100% mortality in a humidified nitrogen environment. (136 p., \$10)

Back issues still available directly from the GCI at \$10 each:



Evaluation of Seismic Mitigation Measures for Art Objects

M. S. Agbabian, M.S. Masri, and R.L. Nigbor

Protection of Works of Art from Photochemical Smog

G. R. Cass, J. R. Druzik, D. Grosjean, and W. W. Nazaroff

Energy Conservation and Climate Control in Museums

J. M. Ayres, J.C. Haiad, and H. Lau

Air Pollution in Southern California Museums

M. H. Hisham, W. M. Mohamed, and D. Grosjean

Exposure of Deacidified Paper to Ambient Levels of SO₂ and NO₂

E. L. Williams and D. Grosjean

Removal of Air Pollutants from Museum Display Cases

S. S. Parmar and D. Grosjean

Assessment of the Susceptibility to Biodeterioration of Selected Polymers and Resins

R. J. Koestler and E. D. Santoro



IN ACCORDANCE WITH THE GCI'S CONCERN FOR THE ENVIRONMENT THIS NEWSLETTER IS PRINTED ON RECYCLED PAPER

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