

CONSERVATION

The GCI Newsletter



THE TOMB OF NEFERTARI

The Getty Conservation Institute Newsletter

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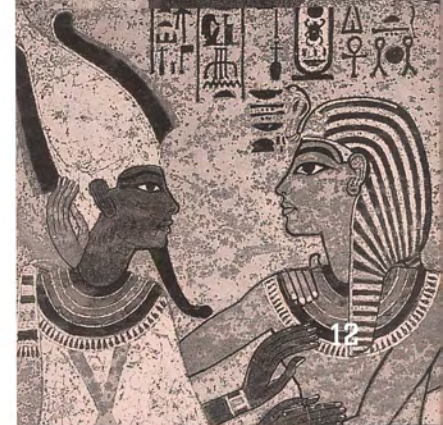
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Front cover: The tomb of Nefertari, Valley of the Queens, Egypt. Photo: Guillermo Aldana. Back cover: Globe photo by Dennis Keeley.



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She was the beloved consort of Rameses the Great, and when she died she was laid to rest in one of the most beautiful tombs of Egyptian royalty. But for much of this century, experts have pondered how to keep the wall paintings of the tomb of Nefertari from turning to dust. Now, after an intense six-year effort by an international team of specialists, the remaining images of an elegant queen among the gods have been saved.

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NEFERTARI


Saving the Queen



In his 1954 book, *Egyptian Painting*, Arpag Mekhitarian opened with both praise and a lament “The Pharaonic régime,” he wrote, “was one of the longest in Antiquity and throughout the period artists of the Nile Valley produced indisputable masterpieces. The pity is that relatively few have escaped intact the ravages of men and time.”  In particular, Mr.

Mekhitarian cited the tombs in the Valley of the Kings and the Valley of the Queens, the ancient burial grounds of Thebes near Luxor in Upper Egypt. There, he said, “...dozens of square yards of inscriptions and depictions of scenes of the after-life which might have thrown much light on the Egyptian religion are irrevocably lost. Most tragic of all is the predicament of the tomb of Queen Nefertari, wife of that famous king Rameses II. Here the superb paintings on modeled stucco which until the recent war delighted the eyes of archaeologists, art historians and tourists alike, are now in such a precarious state that their total loss may well be a matter of only a few years.”  For Mr. Mekhitarian, the inexorable fate that awaited

the “magnificent” painted tomb of Nefertari was an inglorious one. “It is gradually disintegrating,” he concluded, “and will soon have crumbled into dust.” Nearly four decades later, the Nefertari wall paintings are anything but dust.  Over the last six years an international team of scientists and conservators have labored in the tomb with extraordinary

dedication and craft to preserve the remaining images of the ancient Egyptian queen making offerings to the gods and journeying from temporal to immortal life. When the team’s work was completed this spring, the success of their effort was apparent even to the untrained eye.  The dust is gone, the plaster walls are once again secure, and the vivid

shades of red, blue, yellow, and green, complemented by a striking use of black and white, have reemerged. Today, Nefertari’s elegant figure still adorns her tomb as it has for 32 centuries.

THE ENDANGERED QUEEN

She had many official titles: “the Great Royal Wife,” “the Lady of Two Lands,” “the Mistress of Upper and Lower Egypt,” and even “God’s wife.” She had other more endearing epithets: “Lady of Charm,” “Sweet of Love,” “Rich of Praise.”

For over twenty years Nefertari was the beloved queen of Rameses II, the 19th dynasty pharaoh whose reign marked a peak in Egyptian imperial power. The high regard in which the pharaoh held his chief consort is evidenced at the small temple at Abu Simbel in Nubia. In an extraordinary act, Rameses dedicated the temple not only to the goddess Hathor but to Nefertari herself. In so doing he bestowed upon his wife the status of a god. She may have been the only Egyptian queen so honored.

Rameses’s esteem for his wife was displayed after her death as well as in her life. Mehkitarian was not the only one to believe that the tomb created for her was among the most beautiful to be found in the Theban necropolis. The Italian archaeologist Ernesto Schiaparelli, who unearthed the tomb in 1904, immediately recognized the exquisite quality of his find. While the tomb was empty of all but several fragments of the queen’s pink granite sarcophagus and a few other small artifacts—grave robbers during antiquity had plundered the tomb’s treasure—the miraculous wall paintings remained.

Their condition, however, was hardly miraculous. Problems began from the moment of their creation. Because the tomb’s limestone constituted a poor surface for painting, the artisans covered the walls with plaster. The designs for the images were outlined on the plaster, then sculpted in low relief before being painted. As the centuries passed, portions of the plaster detached from the limestone, with some falling completely away. Even in places where the plaster was relatively secure, the pictorial layer had deteriorated.

The damage, so evident when the tomb was first opened, accelerated in the decades that followed. The evidence suggests that most of the painting loss since the tomb’s discovery was the result of human carelessness and vandalism. Despite several attempts to save what remained, by the 1980s at least a fifth of the wall paintings had been lost.

THE NEFERTARI PROJECT

In 1985 the Egyptian Antiquities Organization (EAO) and the Getty Conservation Institute (GCI) began discussing how they might preserve this remarkable cultural treasure. As then EAO chairman Dr. Ahmed Kadry put it, Egypt had a “national duty to preserve one of the most beautiful masterpieces of its patrimony.”

According to GCI Director Miguel Angel Corzo, who served as the Institute’s Director of Special Projects in the mid-1980s, the EAO was open to the GCI’s approach, which involved comprehensive scientific research before treatment.

“So many times what happens is that conservation problems are treated before being studied or analyzed,” explains Mr. Corzo. “Because the Nefertari tomb posed a complex problem, the Egyptian authorities felt that our method and philosophy would guarantee that we would thoroughly examine the problem before coming up with schemes to solve it.”

Under the leadership of Dr. Kadry and then GCI Director Luis Monreal, the EAO-GCI Nefertari Conservation Project began in 1986. A year of scientific analysis was conducted which addressed the geologic, hydrologic, climatologic, microbial, and microfloral status of the tomb. Chemical, spectrographic, and x-ray diffraction tests of all materials, especially plasters, pigments, and salts, were also performed.

The research confirmed the main cause of the paintings’ long-term deterioration—the presence in the limestone and plaster of sodium chloride, otherwise known as table salt. The salts absorb moisture, and when the moisture evaporates the salts crystallize. In some places in the tomb, salt encrustations had eroded the paint on the surface, turning it to colored dust. In other areas large, hard crystals had formed between the limestone and plaster, pushing the plaster surface away from the rock and destroying its cohesion.

Left: Maat, the goddess of truth and cosmic order, protects Nefertari with her outstretched wings. Above right: Nefertari, in a gesture of adoration. Right: Plaster and pigment are forced away from the limestone wall by the formation of salt crystals. All photos: Guillermo Aldana.



The scientific team concluded that there were several sources of water penetration into the tomb: (1) water introduced through the original plastering of the walls; (2) flooding via the tomb's entrance; (3) rain seepage throughout the rock and through fissures in it; and (4) water vapor from the atmosphere, introduced mainly by visitors.

As the project's scientists proceeded with their work, the conservation team surveyed the entire tomb. Every deterioration problem was identified and mapped. When the survey was completed at the beginning of 1987, emergency conservation work commenced. About 10,000 small strips of fine-grained Japanese mulberry bark paper were applied to cracks and loose plaster fragments to prevent their collapse.

CONSERVATION OF THE TOMB

Both the emergency treatment and the tomb's final conservation were headed by Professor Paolo Mora and Laura Mora, world renowned conservators with over 40 years experience conserving wall paintings.

Paolo Mora, former Chief Conservator at the Istituto Centrale del Restauro in Rome, first visited the tomb in 1962. He was amazed at the aesthetic

refinement of the paintings—and moved by a desire to remedy their deteriorated state.

“When a conservator sees something in bad condition,” says Mr. Mora, “he has to put it in good condition. This is not only true for paintings. At home when I see that a glass or a dish is broken, I have to put it together. It is a desire to set things right.”

With the Nefertari tomb, Mr. Mora “saw immediately that we had to do something. But so many years passed before we did.”

The day to “do something” arrived in January 1988. The objective of the conservation program for the tomb was to retain the site's historical integrity. For that reason, the principles of minimal intervention and reversibility of materials were strictly observed. “Our goal,” says Mr. Mora, “was to stop deterioration and consolidate what was possible. We did not add color. Nothing. It was cleaning, consolidation, and stop.”

The first step was clearing away dust and removing the heavy gauze applied during previous conservation campaigns. Then consolidation work began. Where the paint was flaking or chalky, conservators carefully applied acrylic solutions to bond the paint

to the plaster. But the major task was consolidating and reattaching the plaster to the limestone walls. A special mortar comprising local sand and gypsum was mixed with small amounts of water and applied to detaching plaster and to voids in the wall surface. This meticulous process was complicated by the need to remove salt accumulations from both the plaster and the limestone. Cement from past repairs also had to be removed. When all else was done, the paintings were cleaned with a variety of solvents.

Even though the project was conducted only during the cooler months of the year, the work remained arduous and painstaking, performed under difficult conditions. As Miguel Angel Corzo observes, “The reality is that a lot of people spent many hours per day for a total of more than a year and a half cooped up in a small space, in uncomfortable positions, with limited air circulation, working very, very hard.”

WHAT WAS ACHIEVED

The process of conserving the wall paintings by the Moras and their team of conservators resulted in more than a new life for an irreplaceable artistic monument.

John Walsh, Director of the J. Paul Getty Museum (which, along with the GCI, is mounting a special exhibition on the Nefertari Project in November 1992), points out that the conservation effort also garnered more information about how the wall paintings were created.

“The Moras are two totally practical Italians with a lifetime of getting their hands dirty,” says Dr. Walsh. “Their work on Nefertari shows how you can come to a practical understanding of the techniques used by the original artists—and how through understanding those techniques you can help the work of art back towards an appearance that is closer to what was intended. The Moras use science, but even more importantly they use their own lifetime of experience and their empathy.”

The Nefertari exhibition at the Getty Museum will include a life-size photographic replica of one of the tomb's most beautiful chambers. These photographs represent only a tiny fraction of the approximately 5,000 images of the tomb taken by photographer Guillermo Aldana before, during, and after the conservation process.

This photographic archive of 35 mm and 4x5 negatives makes the Nefertari Project one of the best documented



conservation campaigns in recent times. The archive—which includes about 50 images duplicating the frame of reference of photographs taken during Schiaparelli's time—constitutes an important record of not only what was done, but how.

The project's achievements extend to training as well. An important component of the project was transferring technical skills to the Egyptian conservators to assist them in caring for their own cultural heritage. In total, eight Egyptian conservators were trained—three at Nefertari, and five at another tomb in the Valley of the Nobles (see News in Conservation, page 10). These conservators will soon put their new knowledge to work in tombs in the Valley of the Kings.

Certainly the technical lessons learned from the project will have application elsewhere. "The conservation of the tomb of Nefertari has not only preserved an extraordinary historical treasure," observes present EAO chairman Mohamed Ibrahim Bakr. "It has confirmed the wisdom of certain methodologies that we can utilize to preserve other tombs of Egyptian antiquity. This is an important benefit."

There was one unexpected bonus to the Nefertari Project. In the spring of 1988, in preparation for the tomb's final conservation, a worker was cleaning the floor in a small chamber off the main sarcophagus room. There he made the first discovery since Schiaparelli of an object in the tomb—a tiny gold sheet 1½" x 1", inscribed with hieroglyphics. After initial study, the tentative conclusion was reached that the fragment was from either a bracelet or armband. Because a substance on the gold sheet appeared to be a resin used in mummification, it is possible that the fragment came from the body of the queen herself.

THE QUEST FOR ETERNITY

While the conservation of the tomb of Nefertari is complete, the Nefertari Project is not. The tomb remains closed to the general public while the EAO and the GCI maintain environmental monitoring of the tomb's interior.

The purpose of the monitoring, which will continue



until the spring of 1994, is to provide additional data on the effect of visitors on the tomb's environment. The information is critical for the simple reason that the destructive salts in the plaster and limestone can never be fully removed. Because the salts can be reactivated by a rise in relative humidity, human presence in the tomb can

potentially restart the crystallization process.

Mr. Corzo reports that from the short-term experiments already done it is apparent there would be real difficulties with large numbers of visitors. "Our preliminary findings indicate that twelve people in the tomb for only one hour increases the relative humidity by 5%. Essentially, we are trying to determine how many people we can have at any given time in the tomb—and for what periods of time—before all the environmental conditions go back to normal."

For Mr. Corzo, the dilemmas posed by the tomb of Nefertari are typical of the problems faced by many of those responsible for the care of cultural sites. Because of the vast increase in tourism in Egypt and elsewhere, there is a tremendous need to manage cultural sites astutely.

"You can't have unlimited access, unlimited hours, and unlimited numbers," he says. "You can't because the tourism reality of the 1990s is not the reality of the 1940s and 1950s. If we fail to apply sensible limitations in the visiting of cultural sites, many sites will not last another generation."

In the case of the tomb of Nefertari, its loss would be not only grievous but ironic—ironic because the tomb's function for the ancient Egyptians was more than that of a simple burial place. It was an avenue to eternal life. The images and inscriptions on the tomb's walls were meant to insure Queen Nefertari's resurrection and a home among the gods.

Today Queen Nefertari's final resting place has been resurrected not by divine intervention, but through human skill and concern. Its place in eternity will depend upon human wisdom.

Facing page: Overall view of the tomb from Chamber c. Left: Nefertari seated within a shrine, playing the game senet. Below: Conservators at work on the wall painting illustrated on page 15. All photos: Guillermo Aldana.

MEMBERS OF THE TEAM

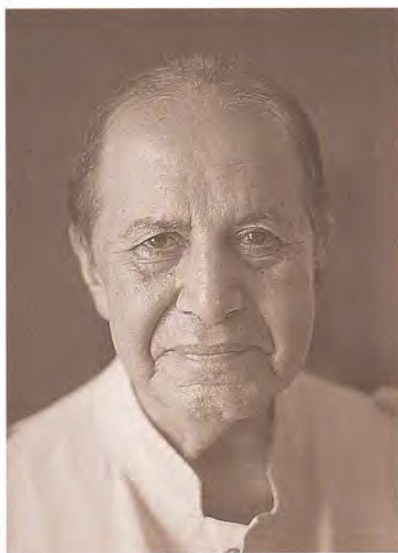
The wall paintings conservators who participated in the Nefertari Project included:

Team Directors

Paolo Mora
Laura Mora

Conservators

Abd El Rady
Abd El Moniem
Abd El Nasser Ahmed
Lorenza d'Alessandro
Giorgio Capriotti
Luigi de Cesaris
Giuseppe Giordano
Ahmed Ali Hussein
Lutfi Khaled
Adriano Luzi
Gemal Mahgoub
Hussein Mohamed Ali
Eduardo Porta
Stephen Rickerby
Sayed Ahmed El Shahat
Christina Vazio



Born in 1918 in Alexandria, Dr. Gamal Mokhtar has devoted his life to promoting the cultural heritage of Egypt. As one of the country's most prominent and passionate advocates of Egyptian culture, Dr. Mokhtar has directed numerous national and international conservation projects and blockbuster museum exhibitions. Through his work as a diplomat, educator, and public official, he has guided the development of national cultural policy and has promoted Egypt's cultural legacy throughout the world.

Dr. Mokhtar was Chairman of the Egyptian Antiquities Organization and First Under Secretary of State from 1972 to 1977, after serving as Under Secretary of State for Monuments and Museums from 1968. Prior to this he was Chairman of the Department of Ancient History at Cairo University. Presently he serves as Professor at Alexandria University; Chairman of the Department of Cultural and Archaeological Heritage of Egypt's National Council of Culture, Arts, Literature, and Media; Member of the Supreme Council of Culture; Vice President and Editor of the UNESCO International Committee of the History of Africa; and advisor to UNESCO on the monuments of Mauritania and Bangladesh. Dr. Mokhtar lives in Cairo and in Alexandria.

Jane Slate Siena is Head, Institutional Relations, the GCI, and Managing Editor of Conservation, The GCI Newsletter.

Above: Gamal Mokhtar. Photo: Guillermo Aldana. Right: The Temple at Karnak. Photo: Alain Choisnet, © 1992 The Image Bank West.

Dr. Gamal Mokhtar

A Life Devoted to Egypt's Cultural Heritage

Jane Slate Siena: You were instrumental in establishing the partnership between the Getty Conservation Institute (GCI) and the Egyptian Antiquities Organization (EAO).

Gamal Mokhtar: Yes, and we began with the tomb of Queen Nefertari. I became interested in Nefertari's tomb when I first served as Under Secretary of State in 1968. Schiaparelli excavated the tomb in 1904 and found the wall paintings to be in a fragile condition. During the 1950s, there were many studies in the tomb and there is visible evidence of restoration from this period today. From 1967 to 1977, I myself made several studies—one with experts from Poland, two or three with ICCROM, and a couple with Egyptian specialists. None of these, however, were successful.

We knew we needed strong help from outside, both financially and technically. Then came a gift of one million dollars from a prominent personality. The check arrived while I was abroad. When I returned, I found that about three-quarters of the money had been allocated to other cultural activities, and that only one quarter was left for the restoration of Nefertari's tomb. This was not sufficient so I used these funds to complete the Luxor Museum and to develop the Light and Sound Spectacle at Karnak. After approaching the Saudi Arabians and others, I remembered Luis Monreal and his experience in Egypt, both as a young archaeologist and as Secretary General of the International Council of Museums in Paris. Dr. Ahmed Kadry, EAO Director General at the time, and I contacted him and his staff at the Getty Conservation Institute, where we learned that their interests converged with ours. At last, I thought, we have found the right partner.

You looked at many options for Nefertari. Why did you think the partnership with Getty would work?

The GCI wanted to bring the best experts in the world to analyze all the problems before the wall paintings conservators were allowed to work. This approach—a com-

**“The monuments of Pharaonic
Egypt were the primary vehicles of
communication, like television, billboards,
and advertising signs are today.”**

prehensive analysis of all the factors — had been missing previously. This was really the first conservation project in Egypt to begin correctly, with a full analysis of the reasons of decay and the actual conditions of the tomb prior to conservation. Under the supervision of then GCI Special Projects Director Miguel Angel Corzo, the work was carried out in phases that corresponded with the reality of the tomb’s condition, and was monitored at every step.

After the multidisciplinary team assembled all the data, the actual conservation work began in close collaboration with the local authorities.

Yes, the work went very smoothly because the GCI did more than cooperate, they invested in the local institutions by working directly with our experts. And the GCI was not in a hurry. They brought the patience and resources to go slowly but surely. This project has established a new level of conservation in Egypt, which will serve as a model for other sites in Egypt and throughout the world.

Monuments in Egypt have long captured the imagination of the public, scholars, and restorers. Some of these monuments have stood for over 4000 years and have endured numerous restoration attempts. Why are they in danger today?

Let’s take the famous case of the Sphinx for example. This monument was restored in Pharaonic, Roman, and modern times. The historic problems of sand and wind continue as they have for centuries, but the pollution and human influence of this century are hastening the monument’s decay. The new factors — exhaust fumes from cars and buses, industrial development, tourists who smoke, eat, drink and walk on the stones, and performing arts spectacles that bring the vibrations of loud music, lights, and thousands of people at a time — are the problems, not the history of previous work on the monument itself.

How we use cultural property is a concern worldwide. Is Egypt a case study of manmade threats to monuments?

First, the problem is not with the tourists, but with the authorities. Visits to important tombs such as those of Queen Nefertari and King

Tutankhamun should be rigorously regulated and closed for maintenance and repairs. I am very happy that the GCI and the EAO are studying this, because we need realistic visitation.

Thousands of people simply cannot go every day. Second, we have new public attractions—the light and sound shows that are so popular. We should take another look at this. The monument is more important than the spectacle. Frankly, I regret having invented the spectacles at Karnak and at Philae, where it is difficult to control the behavior of the crowds as they interact directly with the monuments. But we learn from our experiences. Hopefully the new spectacles at Abu Simbel will be properly distanced from the monuments.

This is all part of site management planning, which is a critical part of conservation.

I think in another 200 years much of the world’s cultural heritage may disappear because of the human element. We are facing new challenges for which the cultural

authorities are not prepared. Conservators and scientists can address historical problems, such as climate, earthquakes, and the deterioration of materials, but who is responsible for diminishing the effects of the human threats of our time? UNESCO has organized 30 international campaigns, but thousands more are needed. Unless the public becomes completely concerned with these matters, it is inevitable that we will lose many more monuments than we can save.

Conservation is particularly complex in urban settings such as Islamic Cairo.

Cairo’s old city, the Islamic Quarter, is like other functioning historic cities in North Africa, Latin America, and Asia, in that it struggles to support a living population that requires city services. The problems of housing, infrastructure, traffic, water, electricity, and so on are issues for the municipal authorities. The cultural authorities cannot solve these problems, but they must participate in the decision making process if we want to protect our heritage.

How has Egypt dealt with its heritage in the past?

Very dramatically! The monuments of Pharaonic Egypt were the primary vehicles of communication, like television, billboards, and advertising signs are today. Consequently, the



monuments were carefully built, protected, and even expropriated by later rulers. Christianity came and new symbols were introduced up until the time of Islam, which is so beautifully represented in Cairo. The conquest of Napoleon in 1797 led to a sort of "Egyptomania." People were completely astonished and surprised by what they began to read and hear about Egypt. The hieroglyphic codes were deciphered and Egyptology became a serious discipline of study. During the 19th century, thousands started coming to Egypt—not only scholars and travelers, but also thieves, whose caches can now be seen in major museums the world over. Today, we have hundreds of foreign and national universities excavating and documenting Egyptian monuments.

What resources are currently available to conserve and protect this vast heritage?

We have an annual budget from the government and we accept foreign assistance. The foreign assistance comes from international campaigns—such as the campaign to save the Nubian monuments when the Aswan Dam was built in the 1960s—and from bilateral cooperation with governments and private agencies.

But the job here is enormous. We have prehistoric, Pharaonic, Coptic, Greco-Roman, Byzantine, Islamic, and modern monuments—and important museums and libraries. During my time as EAO Chairman, I tried to promote our heritage internationally through traveling exhibitions and public relations efforts. We sent monuments and artifacts all over the world. This is why there is an almost universal recognition of the cultural richness of Egypt. And I also wanted to promote the idea that the cultural heritage belongs not only to Egypt, but to the world.

What do you consider to be the most important accomplishments of your career to date?

First, I hope that I have successfully transformed the EAO from the local level to the international one, that I have raised professional standards in Egypt, and that I have promoted a deeper international understanding of Egypt and her monuments and art.

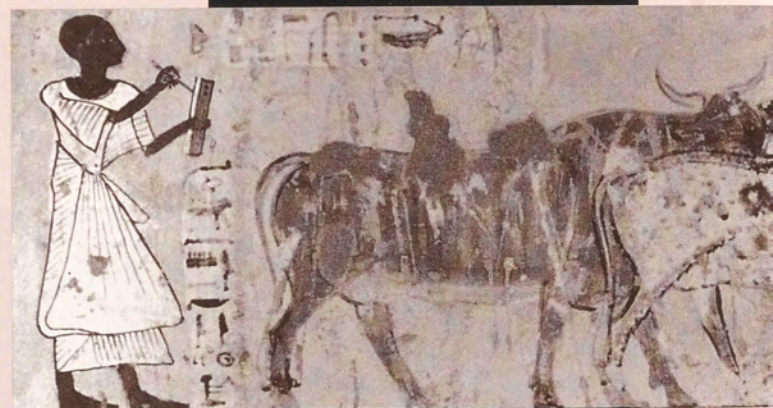
In terms of individual projects, I would name the big international exhibits of King Tutankhamun and King Ramses II which took Egyptian artifacts to North America, Europe, the Soviet Union, and Asia; the Nubia campaigns which promoted a worldwide cooperation and awareness of conservation; the Luxor Museum; the development of light and sound spectacles, in spite of everything; and finally, beginning the important cooperation between Egypt and the Getty Conservation Institute, which has brought a new era of conservation to this country.

What's next on your list of things to do?

I am working with UNESCO to see to it that more of Egypt's monuments are included on the World Heritage List. Of the over 300 natural and cultural sites inscribed on the List, only five are from Egypt. I am also continuing to promote international efforts to conserve the cultural heritage in Egypt and elsewhere in the world.

[news in conservation]

The Tomb of KIKI



Keeper of Accounts for Cattle

Above: Wall painting from the tomb of Kiki. Right:

Entrance to the tomb. Photos: Eudald Guillaumet.

In life, the royalty of ancient Egypt's New Kingdom was surrounded by the nobles of the realm. So it was in death. The great necropolis at Thebes included not only the royal burial grounds, but the countless final resting places of court officials who had served their pharaohs.

The tombs of Egyptian nobility were cut into the barren hills and valleys between the royal burial grounds and the green fields of the Nile floodplain. Like their royal counterparts, the interiors of noble tombs were covered with paintings and hieroglyphic text. And, like the royal tombs, they were subject to the destructive forces of nature.

In conjunction with the Nefertari Conservation Project, the Egyptian Antiquities Organization (EAO) and the Getty Conservation Institute (GCI) recently completed the conservation of a noble's tomb in the valley of Deir El-Bahari. The conservation project was part of an EAO-GCI course on pharaonic wall paintings conservation given to EAO staff.

The tomb, discovered in 1959, is contemporary with that of Nefertari. Constructed by Kiki—Rameses II's official keeper of accounts for cattle—it consists of a small entrance hall connected by a short, narrow passage to the sepulchral chamber. Kiki is depicted in several places in the tomb, including one painting in which he and his wife present themselves to Osiris, the god of the afterlife. Noteworthy in the tomb is a passage of text in the entrance chamber in which the deceased bequeaths his estate to the Temple of the goddess Mut.

As with the tomb of Nefertari, the wall paintings of the tomb of Kiki had deteriorated as the result of salt crystallization that damaged both the pictorial layer and the bedrock beneath it. In addition, a restoration attempt in the mid-1960s had employed inappropriate materials and techniques, which only worsened the tomb's condition.

In October 1990, the EAO-GCI conservation campaign at Kiki began. Five EAO conservators carried out the program, supervised by instructors Eudald Guillamet, a conservator with the Patrimoni Artistic Nacional of the Principality of Andorra, and Eduardo Porta, a conservator from the Museo Arqueológico in Barcelona. Additional

instruction was provided by members of the Nefertari Conservation team.

While the conservation of the Kiki tomb was part of a course to train Egyptian conservators in wall paintings conservation techniques, a primary objective of the effort was to maintain the tomb's aesthetic and historic integrity. The course was structured to follow the standard steps of a conservation program, providing instruction in analysis, documentation, and treatment selection.

The first step in the tomb's conservation was emergency intervention. In places where the pictorial layer was detaching, strips of Japanese mulberry bark paper were applied. When this procedure was completed, dust from the chambers was carefully removed. The conservators then readhered the pictorial layer with a mortar preparation and cleaned the surface with solvents. A good deal of effort was devoted to removing poorly applied mortar from the restoration carried out in the 1960s. Once cleaned, the lacunae were filled with different mortar mixtures that can be readily distinguished from the original.

Cleaning of the pictorial layer permitted the reappearance of several previously obscured scenes. These included a depiction in the entrance chamber of woodcutters felling trees—an unusual image in Egyptian wall painting. Conservation of the tomb was completed in April of this year, concluding an important training opportunity for wall paintings conservators in Egypt.

TEAM MEMBERS

Coordinator

Eduardo Porta

Instructor

Eudald Guillamet

Participants

Mohamed Mahrouz Moselmi

Magdi Mansour Bedavi

Samy Girgis Aseed

Hanan Nairuz Fehmi

Odette Samuel Habib

Amal Rido Kramal



KING

He became pharaoh when he was only about nine years old. His was not a reign distinguished by great conquests or domestic achievement. Dominated by elder officials, Tutankhamun died at around the age of nineteen and was buried in a small tomb in the Valley of the Kings, in Thebes. Several hundred years later his tomb was lost completely when it was covered over with rubble dumped from above by workmen cutting a tomb for Rameses VI. He was among the most forgotten of pharaohs.

Yet now, perhaps no pharaoh is better known. In 1922 archaeologist Howard Carter unearthed his tomb and made the name of Tutankhamun synonymous with the power and the glory of ancient Egypt. Within the tomb's three chambers Carter found thousands of masterpieces of jewelry, furniture, and art objects.

The burial place of Tutankhamun remains the only royal Egyptian tomb discovered in modern times virtually intact. The rubble that consigned the tomb and its occupant to obscurity also protected it for over 30 centuries, preserving its treasures from the grave robbers of antiquity who looted so many other tombs.

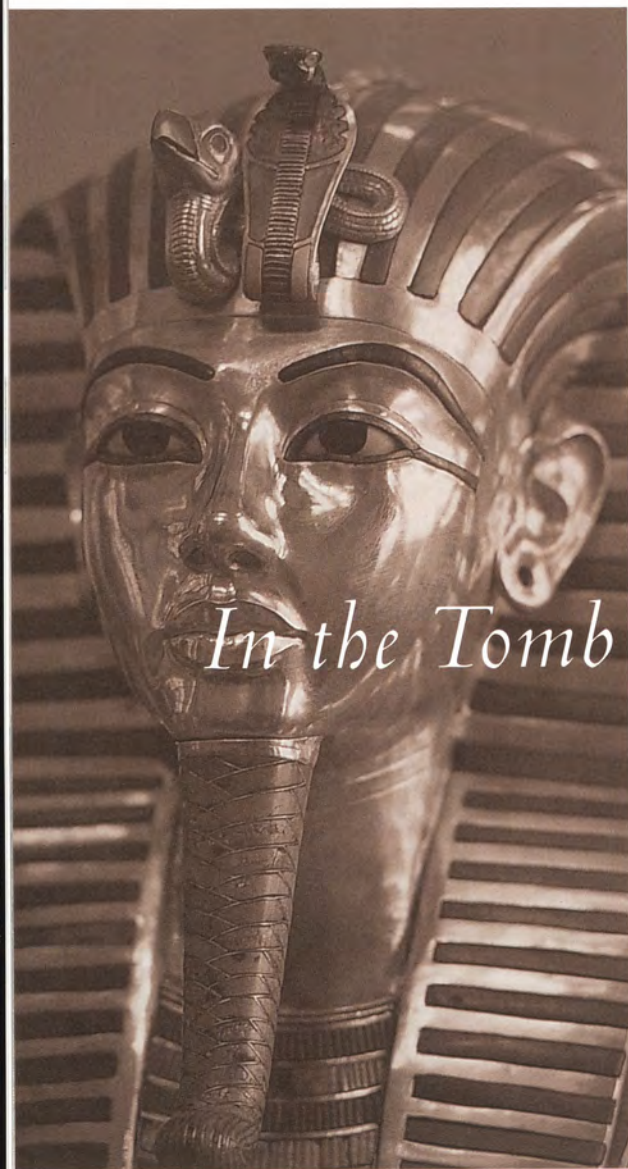
Today the tomb's priceless artifacts fill several galleries in the Egyptian Museum in Cairo. But the tomb itself has not been emptied of all its treasures. The boy king still lies in his sarcophagus in the tomb's burial chamber. Surrounding him is art. The walls of the chamber are covered with images and hieroglyphic texts of unusual proportions, colored in bright tones over a muted yellow background. Among the images are ones of Tutankhamun himself.

Since its discovery and scientific excavation, the tomb has been subjected to intense visitation by tourists. Unfortunately, human presence in the tomb may have exacerbated problems in the wall paintings, including cracked and flaking paint and dark patches on the pictorial surface. Because of these problems, the tomb was recently closed to the public.

Now action is being taken to preserve this most famous of pharaonic tombs. The Egyptian Antiquities Organization (EAO) and the Getty Conservation Institute (GCI) recently launched a collaborative program of scientific study, conservation, and management for the tomb of Tutankhamun.

The project was announced at a Cairo press conference on September 23, 1992 by EAO Chairman Mohamed Ibrahim Bakr and GCI Director Miguel Angel Corzo. "The tomb of Tutankhamun is a singular example of our country's rich and extraordinary heritage, with wall paintings of the utmost importance for the insights they provide into

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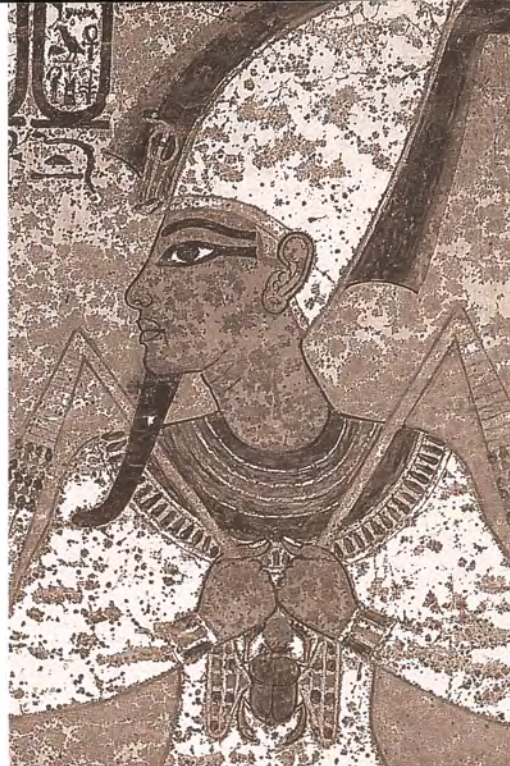
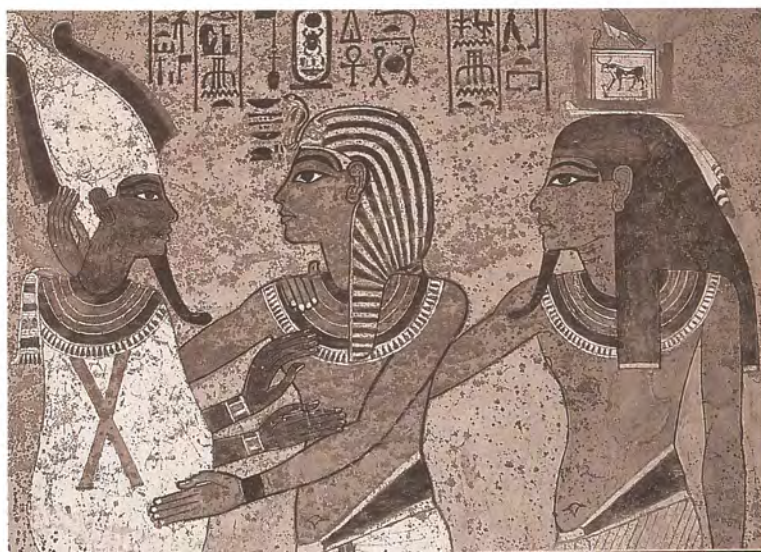
In the Tomb of Tutankhamun

the use of art as an instrument of historical change,” said Bakr. “We are very pleased to embark on this endeavor with the Getty Conservation Institute to preserve the tomb for future generations.”

“The Egyptian government,” Mr. Corzo told the press conference, “is showing foresight and courage in taking on the challenge of protecting its irreplaceable ancient monuments and sites from the multitude of threats facing them today: mass tourism, urban development, pollution, time, and the elements. We welcome the opportunity to assist our colleagues at the EAO in this important effort.”

The joint project will include three phases over several years. During the first phase, a project team will assess and document the tomb’s present condition, as well as compile a history of deterioration problems and previous treatments. Team scientists will analyze the causes of the wall paintings’ deterioration. This analysis will include: (1) identification of the materials of the wall paintings and substrate; (2) identification of materials used in past interventions; and, (3) the response of these materials to the tomb’s past and present environment. A diagnosis of the causes of deterioration will be developed on the basis of this information.

During the first phase, the EAO and the GCI will discuss the management of the tomb and its eventual availability to visitors and scholars. Plans for the tomb’s ultimate use will help determine the nature and extent of the conservation effort. Once decisions concerning use and access are reached, an appropriate program of conservation treatment and maintenance will be prepared.



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Phase two of the project will include the planning and implementation of the tomb’s conservation, which will be documented photographically before and after each campaign. The project’s final phase will involve the development of a program for the long-term maintenance and monitoring of the tomb, including physical protection measures if necessary.

Conservation of the tomb’s wall paintings will be led by Paolo and Laura Mora, who supervised the conservation of the tomb of Nefertari. However, unlike the Nefertari Project, most of the work will be performed by Egyptian conservators.

“We see the Tutankhamun Project as building on the success of our conservation efforts in the tomb of Nefertari, and as the realization of one of that project’s primary goals: to provide Egyptian conservators with hands-on training and experience that they can apply to the preservation of other ancient sites and monuments in the region,” explained Neville Agnew, GCI Special Projects Director. “This, perhaps, is the most valuable contribution we can make to the long-term welfare of Egypt’s cultural treasures.”

Facing page: The gold death mask of Tutankhamun, inlaid with blue glass. Photo: Derek Berwin, © 1992, The Image Bank West. Left: Tutankhamun (center), accompanied by his spirit (right), is welcomed to the underworld by Osiris (left). Above: Tutankhamun represented as the god Osiris. Photos left and above: Guillermo Aldana.

MISSION STATEMENT

The Getty Conservation Institute is committed to preserving the world's cultural heritage for the enrichment and education of present and future generations. The Institute seeks to increase awareness and respect for all cultural heritage, regardless of its place of origin. The Institute works to provide relevant information to those responsible for conservation policies and practices.

The Getty Conservation Institute seeks to develop, apply, and make available appropriate solutions to conservation problems through research, training, field work, and the exchange of information. Appropriate solutions maintain the integrity of the object and are consistent with the values of the cultural context, the environment in which the material is situated, and the ethics and standards of the conservation profession.

The Getty Conservation Institute contributes to scientific knowledge and professional practice through projects that address preventive and remedial conservation of objects and collections, monuments and sites, and historic structures and cities.

In partnership with other institutions, the Getty Conservation Institute promotes an all-encompassing approach to conservation and preservation by bringing together multidisciplinary teams of specialists in the arts and sciences. The Institute evaluates, documents, and disseminates the results of its projects and research.

The Getty Conservation Institute strives to provide leadership in conservation by encouraging the involvement and commitment of public and private organizations.

The world's cultural heritage reflects the achievements of humanity since the dawn of civilization. Cultural heritage is essential to the understanding of history and of the forces that create contemporary society. It is a living source of our identity and an expression of our spirit as it unfolds through time. Cultural heritage transcends temporal and geographic boundaries; it offers a sense of continuity in a rapidly changing world and connection with other societies, past and present.

The preservation of the world's cultural heritage gives meaning and aesthetic enrichment to our lives through knowledge of our past, appreciation of other peoples and cultures, and insight into the values that have endured.

Today, cultural heritage is threatened as never before. Technological innovations and the global population explosion have given rise to unchecked development, industrial pollution, increased tourism, rapid obsolescence, and increasingly destructive methods of warfare. As a result the material evidence of our past is vanishing at an ever-accelerating rate.

We recognize the importance of development and acknowledge that preservation efforts must take place within a framework of the evolution of today's society. Yet the physical remains of the world's cultural heritage are irreplaceable. They must be protected and managed effectively for present and future generations.

To achieve a balance between these concerns, considered choices must be made to save the cultural heritage. The significance of the material we seek to preserve must be understood

— for whom it is important and why. Responses that are appropriate to the cultural context of the materials must be developed.

Conservation is a science and an art. Conservation is a means to an end not an end in itself. But beyond that, conservation is a concept that has to be encouraged and fostered as a part of our way of life. Conservation is the means whereby the cultural heritage, which defines the image of humanity, is ensured now and in the future. Conservation, as the custodian and preserver of the earth's artistic and historic legacy, must shape the ethic of humanity.

During 1992, the Getty Conservation Institute reevaluated its mission in light of programmatic development and growth since its operational establishment in 1985 and the evolving needs in the conservation field worldwide. This process has resulted in a reaffirmation of the Institute's founding premise to address global conservation issues facing museums, libraries, archeological monuments and sites, and historic architecture. It has also resulted in the articulation of a philosophy and approach that reflects the conviction that greater efforts are necessary to promote an understanding of the need to conserve our cultural heritage. These statements of mission and philosophy will guide the Institute's program for the coming years.

PHILOSOPHY



G C I NEWS

R E C E N T E V E N T S

Kouros Colloquium

Since its acquisition by the J. Paul Getty Museum in 1985, the Getty Kouros, a marble statue of a standing nude youth, has been the subject of intense study and debate. At issue is the statue's authenticity.

On May 26–27, 1992 a colloquium on the statue was held at the Goulandris Museum of Cycladic Art in Athens, Greece. Cosponsored by the Getty Museum and the Nicholas P. Goulandris Foundation, the purpose of the event was to clarify the current state of research on the authenticity of the Kouros. In attendance were art historians, archaeologists, and scientific specialists, including members of the GCI staff who have carried out technical investigations into the sculpture.

The colloquium was divided into three sessions: the first devoted to questions of style; the second to technical features; and the last to scientific studies. Speakers from Greece, France, Germany, Great Britain, and the United States presented their observations for discussion. The colloquium provided an opportunity for a wide ranging exchange of ideas and information in a multidisciplinary context.

To date, no single piece of evidence has definitively supported or refuted the sculpture's antiquity. Although no consensus was reached concerning the authenticity of the Kouros, there was general recognition that scientific research can provide valuable information about ancient sculpture, that a data base of information on kouros would be a significant contribution to knowledge and that these colloquia contribute significantly to furthering interest in art historical and scientific research in art conservation.



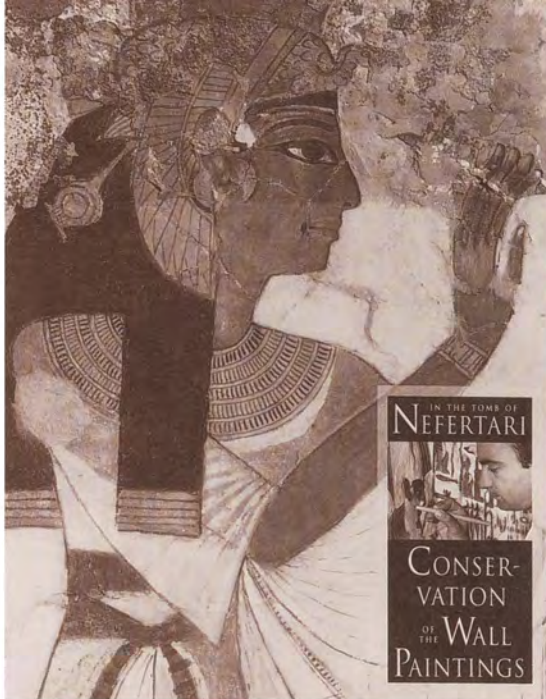
U P C O M I N G E V E N T S

Nefertari Exhibition

From November 12, 1992 through February 21, 1993, the J. Paul Getty Museum hosts "In The Tomb of Nefertari: Conservation of the Wall Paintings."

The exhibition documents the six-year effort by the Getty Conservation Institute and the Egyptian Antiquities Organization to conserve the wall paintings of Nefertari's tomb in western Thebes, Upper Egypt (see pages 4-7). It includes a life-size, post-conservation photographic replica of one of the tomb's most beautiful chambers; explanatory panels illustrating the problems facing the conservators and the solutions they devised; and 42 works of art relating to Nefertari or the images in her tomb. Internationally renowned wall paintings conservator Paolo Mora, who directed the conservation team with his wife Laura, will join other distinguished project participants for a series of public lectures.

The exhibition will travel to Mexico City for display at the Centro Cultural/Arte Contemporáneo from April through August 1993.



***In The Tomb of Nefertari:
Conservation of the Wall Paintings***

This catalogue is being published in conjunction with the exhibition of the same name at the J. Paul Getty Museum (see facing page). It includes articles by Robert Steven Bianchi (J. Clawson Mills Fellow, Metropolitan Museum of Art, New York) and John K. McDonald (Associate Director, Yale University Art Gallery).

As a complement to the exhibition, this publication includes a description and photographs of the conservation process, discussion of significant artifacts and the tomb in the context of Egyptian art history, and an outline of the life of Nefertari. Aimed at the layperson who is interested in Egyptian art, this book will also be of value to the specialist.

Books may be ordered from the J. Paul Getty Trust Publications Distribution Center, P.O. Box 2112, Santa Monica, California, 90407-2112. For further information, or to place an order by phone, call 310-453-5352 or (in the U.S.) 800-223-3431.



**NEW
PUBLICATIONS**

***The Conservation and Technology of Musical Instruments:
A Bibliographic Supplement to AATA***

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The Conservation and Technology of Musical Instruments, edited by Cary Karp, compiles in a single bound volume abstracts on the following subjects:

- * Musical instrument conservation, including treatment, examination, analysis, and documentation
- * Musical instrument technology, including relevant aspects of materials science and the general history of technology
- * Musical performance practice as it relates to the conservation of musical instruments
- * Ethical issues arising in the conservation of musical instruments

The literature covered by the bibliography includes periodicals, published and unpublished monographs (including encyclopedias, collection catalogs, masters' theses, and doctoral dissertations), and audiovisual sources. Historic primary sources, dating from the 16th century, are given special attention. Extensive reference is also made to material available through online sources such as the International Repertory of Music Literature (RILM) and the Conservation Information Network.

"If you do any research at all, or use libraries at all to look for material in our field, this is going to be an essential tool, and it will be neither replaced nor superseded for a generation or more."

Jeremy Montagu
*The Fellowship of Makers & Researchers of
Historic Instruments Quarterly.*

U P C O M I N G

Preventive Care of Historic Photographic Prints and Negatives

January 11-15, 1993, Marina del Rey, California

This five-day workshop will provide information on the manufacture, identification, deterioration, and conservation of early photographic cased materials, 19th and 20th century photographic prints, and historic and contemporary negative materials. The course is designed for conservators, librarians, archivists, and curators responsible for the care of historic photographs. Among the topics to be covered are: the structure and composition of photographic materials; treatment options for deteriorated photographic materials; proper storage and care of historic photographs; and guidelines for surveying large collections.



Preventive Care of Historic Photographic Prints and Negatives, Part II

March 15-19, 1993, Marina del Rey, California

This is a follow-up course for those who have already taken "Preventive Care of Historic Photographic Prints and Negatives." Following a brief review of specific historic photographic processes, the course will deal with the following topics: identification, deterioration, and preservation of color photographic materials; film base deterioration and current preservation alternatives; the stability of silver images; recent environment and storage parameters for all types of photographic materials; basic care of photographic materials; and long-term preservation concerns, disaster recovery plans, and surveying of collections.

For further information on any of these courses, please contact the GCI Training Program at 4503 Glencoe Avenue, Marina del Rey, CA 90292, USA. Telephone: 310-822-2299 / Fax: 310-821-9409

C O U R S E S

The Conservation of Excavated Sites: New Approaches and Techniques

May 10-21, 1993, Paphos, Cyprus

Organized by the Department of Antiquities of Cyprus and the GCI, the purpose of the course is to present a methodology that may be used for developing conservation policies and practices for protecting excavated archaeological sites. The course is designed for individuals responsible for making or participating in policy decisions about the management of archaeological sites on a national or regional basis.

Course topics will include: defining the values and significance invested in excavated sites; surveying the physical condition of the site; identification of factors contributing to deterioration; selecting conservation options, ranging from reburial to visible presentation to the public, and identifying appropriate choices; site conservation measures, such as reburial, stabilization, structural consolidation, and protective shelters; site maintenance; and reducing the damaging physical impact of visitors.

Preventive Conservation: Museum Collections and Their Environment

April 18-May 1, 1993, London, Great Britain

The GCI and The Conservation Unit of The Museums and Galleries Commission, United Kingdom, are cosponsoring a course on preventive conservation.

The course will present the most recent information on preventive conservation and consider its practical application in museums and historic houses. Focusing on both the technical and organizational factors that affect the implementation of preventive conservation, the course will combine technical information on the museum environment with discussions on strategies for working with colleagues and consultants to integrate that information into museum policies and operations.

Course participants will be senior-level conservators, conservation scientists, and conservation administrators working in museums, Area Museum Councils, heritage organizations, training centers, and private conservation practices in the United Kingdom and Europe.



Michael Schilling

Associate Scientist, Scientific Program

A Southern California native, Mr. Schilling studied chemistry at California State Polytechnic University in Pomona, California. During and after college he worked in research for a major agricultural cooperative, where his responsibilities included analysis of citrus products and water samples.

In 1983 Michael Schilling saw a newspaper ad for an assistant scientist position at the J. Paul Getty Museum. When he inquired about the job, he was told it would involve x-raying paintings. Deciding, as he put it, that x-raying paintings had to be better than cutting up oranges, he came down to the Museum to apply — and felt overwhelmed just entering the building for the first time. After subsequent interviews, Mr. Schilling was hired, much to his surprise. He became one of the first employees of what would evolve into the GCI, helping set up the Institute's first scientific laboratory.

Initially, Michael Schilling assisted in authenticity studies of art objects being considered for acquisition by the Museum. Later, after the GCI was established as a separate program of the J. Paul Getty Trust, his work included performing color measurements in the tomb of Nefertari prior to the tomb's conservation; he is now doing similar work on the Mogao and Yungang Grottoes in China. He also has conducted research on volatile organic compounds emitted from building materials used in museum display and storage. At the moment, most of his professional time is spent conducting gas chromatography and mass spectrometry of organic binding media as part of the Institute's research on binding media, the substance that holds pigments together and that adheres paint to surfaces.

After coming to the GCI, Mr. Schilling continued his studies at Cal Poly, receiving a master's degree in analytical chemistry in 1990. In his spare time, he devotes his patient scientific skills to correspondence chess, where matches are conducted through the mail — and can last two to three years.

STAFF PROFILES

Mahasti Afshar

Program Research Associate, Director's Office

Originally from Tehran, Iran, Dr. Afshar received training in film and television production, first with the British Broadcasting Corporation in London and then with the Organisation de la Radio-Télévision Française in Paris. After working as a producer and a director for National Iranian Radio and Television, her interest in ancient Near Eastern Folklore and Mythology led her to a master's degree in the subject at Harvard University. She subsequently taught folklore at Tehran University, then wrote and narrated a children's film series based on Persian folktales. Mahasti Afshar later returned to Harvard where, in 1987, she received her Ph.D. in Sanskrit and Indo-European Traditional Literature and Mythology. Her dissertation was published in 1988, winning an award from the Mahvi Foundation in Geneva.

Her study of folklore indirectly led to her work with the GCI, which she joined in 1989. As Dr. Afshar saw it, the GCI's efforts in art conservation paralleled the conservation of oral traditions that is part of folkloric studies. Both involved preserving manifestations of culture. Mythology deals with universals of human experience. Art, at its best, does the same.

The appeal for Mahasti Afshar of working at the GCI is that it gives her the chance to combine her academic training with an active role in conserving cultural heritage. In her present position, she assists the GCI's director in researching and developing Institute projects. The comprehensiveness she brings to this endeavor can be confirmed by a quick glimpse of the books, magazines, photographs, slide carousels, maps, three-ring binders, and still-unidentified scraps of paper that constitute what might be gently referred to as the controlled chaos of her office.

Over the last three years Dr. Afshar has helped to coordinate the Nefertari Conservation Project in Egypt and the Nefertari Exhibition, which opens at the J. Paul Getty Museum in November 1992. Through the preparation of presentations dealing with the Institute's programs she helps fulfill one of her professional objectives — promoting an awareness of the importance of conservation.



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



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