

# **Conservation of the Punic Collection at the Museum of Carthage. Part II – Transfer of Conservation Technology: Establishment of a Salvage Conservation Laboratory**

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# Conservation of the Punic Collection at the Museum of Carthage.

## Part II – Transfer of Conservation Technology: Establishment of a Salvage Conservation Laboratory

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*This article is the second in a series of three articles featuring the University of Toronto- Museum of Carthage Project, a multifaceted conservation project in which the role and responsibility of conservators extend beyond the treatment of artifacts. The article focuses on the "technology transfer" approach developed to establish a small salvage conservation laboratory at the Museum. It describes the methodology as well as some of the specific results of this project: design and installation of the laboratory; development and adaptation of practical conservation treatments; training of local personnel; examination and classification of approximately 11,000 objects and treatment of over 2,000; and creation of a teaching manual, documentary film, and didactic exhibitions at the Museum.*

*Cet article est le second d'une série de trois articles consacrés au projet conjoint de l'Université de Toronto et du Musée de Carthage, une entreprise à multiples facettes où le rôle des restaurateurs ne se limite pas au seul traitement des objets. L'article met l'emphase sur l'approche de type «transfert de technologie» qui a été adoptée pour créer au musée un laboratoire de conservation de sauvetage. L'article décrit la méthodologie ainsi que certains des résultats spécifiques du projet : la conception et la mise en place d'un laboratoire; la mise au point et l'adaptation de traitements de conservation; la formation du personnel; l'examen et le classement d'environ 10 000 objets et le traitement de plus de 2 000 d'entre eux; et la réalisation d'un manuel de formation, d'un documentaire et d'expositions didactiques.*

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### Introduction

The evolution of conservation as a discipline, especially in recent years, has seen the expansion of the role and involvement of conservators beyond the treatment of artifacts. At the same time, the importance of cultural heritage and its preservation for the well-being of countries and communities has been acknowledged, particularly in the last decade. The University of Toronto-Museum of Carthage Project (1989-1992), which focused on the conservation of the Punic collection of artifacts at the Museum of Carthage, was designed, not only as a conservation project, but also as an international, sustainable development project. As such, it established an important precedent for the Canadian international development community, in which a cultural heritage conservation project was included among those sponsored by the Canadian International Development Agency (CIDA). This article describes the approach that was developed to establish a small, *in situ*, salvage conservation laboratory capable of sustaining itself and highlights some of the main results of the project.

### The Problem and the Context

The Museum of Carthage, as described in the first article on the project,<sup>1</sup> is the custodian of a large collection of material excavated from tombs. This collection, assembled mostly around 1900 and never seen or classified in its entirety, is one of the largest assemblages of Punic artifacts in the world, comprising tens of thousands of objects covering the period from the eighth to

the second century B.C. The collection contains an enormous amount of scientific information and represents an important part of the world's heritage.

Modern-day Tunisia, like most of its Mediterranean neighbours, is very rich in cultural heritage and, in particular, in archaeological heritage, from prehistoric to recent times. Its Phoenician and its Roman heritage are considered to be among the most important and spectacular in the world. Cultural heritage is recognized in Tunisia as its principal potential source of tourism revenue, as well as a source of national pride and identity. However, the effects of modern-day urban development and industrialization are exerting enormous pressure on the country's capacity to preserve its archaeological heritage. In spite of major national and international efforts, such as the ten-year Save Carthage Campaign, carried out under the auspices of UNESCO,<sup>2</sup> a very large amount of work still remains. Conservation of archaeological heritage is one of the underdeveloped areas. In the past, large artifact conservation projects, such as the conservation of bronze objects from the Mahdia shipwreck, housed at the National Museum of Bardo, have been completed outside of the country, or have been the subject of specific campaigns without a training component or ongoing institutional activities.

### The Project

The overall University of Toronto-Museum of Carthage Project was developed along several axes, including: assessment and

classification of the collection; salvage conservation and conservation training; and museological exhibit development. The principal goal of the salvage conservation and training component was to respond to the ongoing need to preserve the collection of artifacts at the Museum of Carthage by creating an institutional capacity for object conservation. The Museum could then continue to treat its collection and, in addition, become a centre for development of conservation activities in the country.

### **The Approach**

Today, the international community has recognized that national and local culture, which form the context within which all human activities take place, play a key role in the success of development efforts such as the transfer of technology. Social and technical changes of any kind can take root only if they can be made internally coherent with respect to the cultural context in which the activities are to take place. While local cultures have changed and adapted throughout history, certain basic patterns and values remain, and those need to be incorporated into development projects. It is with this idea in mind that the project team designed and executed the University of Toronto-Museum of Carthage Project.

The direct accomplishments of this project, such as the establishment of the laboratory, the training and integration of trainees into the administrative and professional structure of the Museum, and the salvage and restoration of a large number of artifacts are not the only aspects that make it significant. Of equal importance is a more unique feature: the incorporation of both site- and culture-specific parameters into the design and the execution of the transfer of technology.<sup>3</sup> This paper will present some of the accomplishments of the project, but will focus first on the approach that was taken to reflect both site- and culture-specific circumstances. We hold that this philosophy has general and generic applicability to corresponding problems in other locations and cultures.

#### *The Planning Phase*

In the planning stage of the project, the decision was made to set up a salvage conservation laboratory at the Museum that would use only locally available equipment and materials. This was done in order to make the operation of the laboratory as self-sufficient as possible and not dependent on the continuation of "foreign aid." Thus, we hoped to ensure the long-term sustainability of the work. However, this meant that standard scientific and technical conservation procedures had to be adjusted and adapted, and new ones invented.<sup>4</sup>

At the same time, it was decided that all training would be conducted in Carthage, at the Museum. This was done in order to provide simultaneous teaching and practice and, in addition, to tailor the training to local circumstances and needs. These arrangements considerably facilitated the transfer of scientific and technical knowledge. The bulk of the training was conducted in the French language which is currently spoken in Tunisia.

Furthermore, it was decided to set up a small display in the Museum at the beginning of the project to show the first work done at the laboratory and to explain the nature, progress, and goals of the project. The purpose of this temporary display was to establish contact with visitors and professionals outside of the institution and thus help to assimilate the project into the life of the Museum and the community.

#### *The Execution Phase*

During the execution of the project, technical experts worked on its different aspects at the Museum at various times. The field director from the University of Toronto, Vanda Vitali, was present throughout the project in order to maintain continuity and coherence, as well as to help sustain the confidence of the Tunisian partners and keep them informed. This practice continued during the Gulf War crisis (1990-1991) which brought considerable instability and confusion to the region.

Throughout the four-year duration of the project, the director of the Museum and the field director met every morning to discuss the ongoing work and program, and to make any necessary adjustments. This was done in order to accommodate the traditionally shorter feedback mechanisms and more interactive ways of work which characterize the traditional Tunisian approach. In addition, it was important to remember that traditional societies, such as that of Tunisia, focus principally on process. It soon became apparent that daily consultation and interaction was essential for the successful realization of the project.

The training component of the project was kept flexible in order to adjust the learning process to the progress of the trainees, as well as to their prior experience and personal interests. In order to combine most effectively the training and the great need for on-site object conservation, the schedule of work and instruction was based on the following consideration: instruction, whenever possible, began with the easiest tasks within a particular conservation category, building on the prior craft knowledge of the trainees. Thus, simple tasks could begin to be turned over to trainees earlier and the more complex conservation techniques evolved from the simple tasks of maintenance. One third of the scheduled training period was devoted to the gradual removal of the Canadian trainers from the functioning and supervision of the laboratory. This made easier the transition from direct and practical instruction (supervision in the laboratory) to indirect and mostly written instruction (*e.g.*, through the development of the manual at the Museum, but outside of the laboratory), and resulted in a more gradual and substantive increase in the confidence of the trainees.

#### *The Expansion Phase*

As the project proceeded, it also became evident that the results were generating a great deal of interest from the professional community and the public within Tunisia. This level of active interest justified a more broadly based and permanent outreach by the Museum. With this in mind, the project was expanded to include, at the suggestion of the director of the Museum, the

development of a permanent didactic exhibition. This phase will be the subject of the third article in this series.

In order to increase further the effectiveness and range of the project, two additional didactic components were added at the initiative of the Tunisians: a salvage conservation manual<sup>4</sup> and an educational documentary film<sup>5</sup> of the project. The manual is intended to serve as a record and reminder for the Tunisian colleagues who underwent the training, and also as a tool that will help them train others in the techniques of salvage conservation. The documentary film was conceived and directed by a renowned Tunisian director, Mr. Abdellatif Ben Ammar, with the participation of various Canadian and Tunisian scientific experts. The film, presented from the perspective of a Tunisian director and narrated in English, French, and Arabic, is intended for a large, international audience. This addition to the project significantly expanded its outreach.

## The Results

The many results of this project ranged from the tangible to the intangible:

### 1. Establishment of a salvage conservation laboratory.

This laboratory was designed and installed in an area within the Museum grounds that was specifically renovated by the Museum as its contribution to the project. The laboratory was located in an annex of the Museum, within a building that served as a storage area and mechanical and marble workshop. Space allocated to the laboratory consisted of four rooms: two large rooms each about five by ten metres, one converted into a “wet/dirty” laboratory (**Figure 1**) and the second into a “dry/clean” area; a two by three metre chemical storage space; and a long, corridor-like room, shared with museum storage, in which the laboratory’s neutralized chemical waste was kept until it could be removed.

The wet laboratory was roughly subdivided into four areas: object examination, initial registration, mechanical cleaning, and chemical treatment. The dry laboratory contained an



**Figure 1.** Two conservation trainees, now full time staff of the laboratory, Sihem Roudesli and Hedi Zouaoui, in the “wet” laboratory of the Musée de Carthage with the head of the training staff, Vassilike (Bessie) Argyropoulos.

“administrative” section where records were kept and computer registration took place, and an object observation area where the treated objects were housed for observation and until proper storage facilities were found or constructed.

As described above, the laboratory was equipped entirely in Tunisia and conservation treatments were developed that depended solely on locally available materials and supplies. The laboratory equipment included two binocular microscopes, two cameras, electric engravers with attachments, some dental equipment (picks, drills), scalpels, spatulas, steel pins, tweezers, syringes, an electric hot plate, a magnetic stirrer, one glass desiccator and a few covered plastic garbage pails which served as desiccators, an ultrasonic bath, a water deionization column and resins, various containers, brushes, and protective equipment (goggles, forceps, mouth-masks, gloves, and lab coats). The manual lists all the equipment and supplies found in the laboratory.

### 2. Development of specifically designed or adapted conservation procedures.

Low cost and low environmental impact salvage conservation procedures that incorporated environmentally safe working practices and waste disposal methods were adapted or developed whenever possible.

Adaptation of conservation procedures was a constant preoccupation and it took place on several levels throughout the project. It influenced the conservation training, the conservation procedures themselves, the choice of equipment that was purchased, and the handling of waste materials.

For instance, a decision was made to proceed primarily with mechanical cleaning of bronze objects such as mirrors or cymbals in spite of their number and state of conservation. Chemical cleaning of such objects, which would have been a more efficient procedure, was part of the training. However, it was felt that our trainees would get a better “feel” for the objects if they handled them on an individual basis and treated them mechanically. The goal of the most sustainable procedure determined the type of adaptive change required.

As well, we were conscious of the fact that the annual budget of the laboratory after the termination of the project would not be sufficiently large to permit the routine use of expensive chemicals such as silver oxide, often necessary in the treatment of active corrosion. We therefore changed the procedures to include the use of aluminium foil, readily available and more affordable, although it was not always as effective for the treatment of stubborn active corrosion.

The training program also introduced the notion of the importance of environmental considerations. While it was at first regarded as somewhat strange not to dispose of chemicals into the sewage, after a while, the entire Museum staff were contributing used plastic bottles for storage of neutralized chemical waste until it could be picked up by an agency that was being set up as we began the project.

### *3. Training of three individuals in registration, examination, and salvage conservation.*

The training principally involved conservation treatments of all types of artifact materials found in the Museum's collection (*e.g.*, bone, ceramics, metals, glass, glaze, ostrich egg, pigments, and stucco). However, certain aspects of collection management (such as the development of storage spaces and procedures for handling artifacts and the survey of ambient conditions) were also part of the training, as were computer-based object registration procedures. The Museum first appointed two of its staff members to the team and created a temporary position for a conservator-trainee, all on a part-time basis. In the latter half of the project, the temporary position evolved into full-time employment and one of the two Museum staff trainees was transferred permanently, on a full-time basis, to the laboratory. Today, the laboratory still functions with two permanent employees.

The pedagogy of training was based on a "learning by doing" approach. The trainees worked on actual objects from the collection while being instructed on various phases of rescue conservation. Although the team began by handling most of the conservation tasks, responsibility for assignments was continually devolved onto the trainees, depending on their level of accomplishment, while the instructors were still present and working with them. The appropriateness and sustainability of conservation protocols could then be tested and amended throughout the duration of the project. This highly interactive process of working encouraged a style of management that was cooperative and respectful of the trainees' inherent knowledge and their participation in setting the project's operational goals. Familiarity of the instructors with the local culture, language, and history of Carthage was essential in the conduct of the training and the successful completion of the entire project.

The head of the laboratory, Dr. Sihem Roudesli, one of the project trainees, subsequently came to Canada to pursue further training in conservation at the Historic Resource Conservation Branch of the Canadian Parks Service in Ottawa (now the Ontario Service Centre, Parks Canada) and then at the Canadian Conservation Institute.

### *4. Examination and classification of approximately 11,000 objects, with treatment of over 2,000. Development of a computerized system for the registration of objects.*

The approach and the results of this work are discussed in Part I of this series.<sup>1</sup>

### *5. Creation of a teaching manual and a documentary film on the project. Mounting of a temporary display and permanent exhibit.*

The conservation manual, the documentary on the project, and the temporary display and permanent gallery at the Museum significantly extended the impact and the importance of the project.

### *6. International and national acknowledgement of the project.*

On the international scene, the project was recognized by UNESCO as an activity of the World Decade for Cultural Development. The recognition of the project's significance has led to interest and invitations to make presentations at many conferences, including one at the UNESCO headquarters in Paris (1993)<sup>6</sup> and another at the conference on "The Cultural Dimension of Development in Africa" in Abidjan (1992).<sup>7</sup>

The field director of the project, Vanda Vitali, received the Order of Merit from the Tunisian government in July of 1992 and Michel Barry, a member of the team, received a mention of merit from his employer, the Canadian Parks Service in Quebec City, in the fall of 1992.

### *7. Development of a spirit of international cooperation.*

The most important intangible result of this project was the spirit of cooperation that was developed. Towards its end, the project included 10 Canadians and 30 Tunisians. Faced with various difficulties that frequently accompany international projects, the team radiated an extraordinary energy, drive, and faith, which resulted in the successful completion of the project. It is hard to imagine that either the Canadian or the Tunisian partners alone could have matched the accomplishments of the joint team.

### *8. Difficulties.*

One of the most surprising intangible results of the project was the discovery of the nature of the various difficulties encountered during the work. For example, it was expected that an international crisis like the Gulf War would affect the efficiency of the project. That, however, was not the case.

The difficulties came where they were least expected. The project and, in particular, its budget and the time allotted for conservation were based upon what was thought to be the size of the collection of objects when it was examined during the design phase. However, after the first successful treatment results many more objects—almost three times as many—were presented for conservation. All of these objects had to be, at least, examined. This placed considerable additional stress on the budget and the time allotted for the execution of the project. In retrospect, it was a lack of cultural sensitivity on the part of the University of Toronto team that did not take into account the burden of custodianship that the host institution must have felt. Why would they, we ask ourselves now, put their most precious heritage into the hands of foreign experts who they had assessed neither technically nor morally? In retrospect, we consider the appearance of additional objects, which were usually more precious and significant, to have been a gesture of increased confidence, for which we are grateful, in spite of the perturbation of an already tight schedule.

Another difficulty came from the Canadian side. The lack of appreciation and understanding of heritage-based projects compared to industry-based projects on the part of the Canadian representatives resulted in attempts to marginalize the project.

Also, a lack of recognition of the need for culture-sensitive structuring and management of the project by certain Canadian officials accustomed to a Western style of management and control meant that the status of the project and the actions taken by the project management were contested as the work proceeded.

### Conclusions

The Museum of Carthage-University of Toronto Project accomplished its specific mandate: the transfer of conservation techniques and the establishment at the Museum of Carthage of an institutional capacity for object conservation as well as an advanced system for the interpretation and display of material heritage. Eight years after the end of the project the laboratory is still in existence and functioning well.

Because of the focus on a heritage-based problem and the incorporation of culture- and site-specific parameters into its design and execution, the success of the project was greatly enhanced and its effects multiplied.

Due to its heritage-based nature, the project provided important insights into the culture-based practices of Tunisian society, past and present. In more general terms, information derived from heritage-based projects can be applied to the design and execution of other development activities in a region in order to make them more culture-sensitive and culture-specific and thus, more likely to succeed and contribute to sustainable development.

From the perspective of conservation, the project extended the boundaries of traditional conservation work and training and demonstrated the importance of cultural heritage preservation work for Canada's international relations and image.

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