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INTERVENTIONS ON 24 OBJECTS MADE OF COPPER ALLOY, ORIGINATING FROM RABAT ARCHAEOLOGICAL MUSEUM, SOME IMPORTANT EXAMPLES

“Wonders of Volubilis, bronze antiques from Morocco and the Mediterranean” Exhibition
MuCEM, Marseille – 12th March – 25th August 2014

Françoise MIELCAREK
Conservator-Restorer in metal/composite materials
LC2R Draguignan

Laboratoire de Conservation, Restauration et Recherche,
LC2R Draguignan



Bibliographic context

Calendar of interventions

Receiving of objects at LC2R:

8/1/14 - the first 14 objects

11/2/14 - 5 objects

18/2/14 - the last 5 objects

Return of restored objects to MuCEM:

18/2/14 – 2 objects

24/2/14 – 22 objects

* Sponsorship agreement between MuCEM and LC2R signed on 14th May 2014,

* Sanitary supervision of the exposed objects twice a month from mid-December 2013 to the end of August 2014.

- **Photographic coverage** before interventions,
- **Bibliographic research** supporting the previous interventions and restorations,
- Development of a **report** on every object in order to put in place an adequate treatment according to its state of conservation,
- Mechanical and/or chemical **interventions**,
- Elaboration of the restoration **report**,
- **Wrapping and packing** restored objects for their return,
- Unveiling the completed interventions upon the return of the restored objects to MuCEM in the presence of conservators.

The objects that LC2R have worked on are not the results of gross excavations but have been worked on in the past. A partial retrospective can be seen below, and Mr Albert France-Lanord's report technique is available online.

According to the report, "The preservation of bronze antiques from Rabat Archaeological Museum" dated 1983, established for the Government of the Kingdom of Morocco by UNESCO, "The bronze objects exposed have all been cleaned with either mechanical procedures, by scrubbing them of corrosion products thus recovering the top layer, or with more or less thorough chemical sanding treatments. As the sanding sometimes brings the metal to light, this has been "re-painted" like it was long ago" (page 1).

"The bronze objects displayed often show considerable alterations, (...), and since 1969 Ms Boube-Picot highlights: some bronze objects from the Rabat Museum, described in this catalogue suffered, after their discovery, a vigorous clean by wet methods which stripped the top layer. (...) Artificial patinas were put in, but their effects are highly unpleasant. Attempts at treatment have been successfully applied by the laboratory of the Industrial Air Workshop of Casablanca". (Page 2)

"The drapery of Volubilis - an exceptional piece - has been heavily cleaned but it remains very chlorinated and it is quickly becoming covered in green stains, particularly visible on the sides and back."

(Page 6.)

The bronze objects were once again subjected to restoration at the time of their unveiling in Paris for the exhibitions of 1990 and 1999.

Rabat Archaeological Museum, Morocco
Trophy armour, 1AD (?)



Before restoration



After restoration



Improvement of the surface's clarity, most notably the decorations and stamps, the traces of manufacture and repair after restoration.



Rabat Archaeological Museum, Morocco
Crater handle with two heads representing Dionysus, circa 100 BC

After restoration



Before restoration



Improvement of the clarity of the two brackets that clearly represent the bearded mask of Dionysus. The two heads are styled with a mitre and wear an ivy garland.

Rabat Archaeological Museum, Morocco
Mule proteome 1 BC (?)



Before restoration



After restoration



Improvement of the clarity of the small triangles encrusted in silver and copper on the neck, hidden by the dirt and corrosion products

Rabat Archaeological Museum, Morocco
Lion proteome and a foot wearing a shoe, roman era



Before restoration



After restoration



Before restoration



After restoration



Archaeological Museum of Rabat
Theseus bringing down the Minotaur, 1 – 2 BC



Before intervention



After mechanical extraction, the improvement of the surface's clarity, the details of the curls, the anatomy etc., we can see modern rivets on the arms



Before intervention



After intervention

Rabat Archaeological Museum, Morocco
Parade mask, 60-80 BC



**Before
intervention**



**After reduction of enamel and
certain fillings**



Here we have traces of white metal (to be analysed) on the surface

Rabat Archaeological Museum, Morocco

Part of a *paludamentum* (a cloak worn officials during war time)

Beginning of 3BC



Cliché LC2R Draguignan, 2014

Before restoration

- The decoration is made up of a trophy which includes a tunic hung from a limbed tree, finished with a part made of *tau*.
- On each side of the trophy, there are two captives with bare torsos and their hands chained behind their backs. They both wear the *sagum* and breeches that allows one to be identified as a Parthian and the other as a Briton.
- Lost-wax hollow iron casting on the top, sunken in two parts assembled by 3 soldered areas.
- Imported work.

After restoration



Cliché LC2R Draguignan, 2014



Cliché LC2R Draguignan, 2014

Improvement of the clarity of the Damascene-style decoration hidden by the dirt and previous interventions.

Explanatory slide about the post-treatment process

The metal archaeological objects that have been restored are **fragile** and great precautions must be taken at the time of their handling.

In particular, it is best to:

- Pick up the object with both hands (support and stabilisation), while choosing the most suitable points.
- Not handle the objects with bare hands but use clean cotton or latex gloves, as the acidity of the skin can irreversibly damage the surface of the objects.
- Make sure there is a support that is larger than the object (if necessary)
- Not apply cleaning products
- Dust with a cloth or soft brush
- Do not try to stick a broken object back together straight after an impact, call a certified conservator-restorer.
- Regularly observe and inspect the objects.

For the presentation or close environment of the metallic objects, it is best to:

- avoid certain tannic woods: chestnut, oak, plywood etc. because they generate acids that can cause a corrosive effect.
- avoid storing them in boxes made of tannic woods or in chipboards because the glues are harmful.
- not stick tags directly on the objects.
- cover the stored objects with a sheet, maintaining good ventilation.
- cover the shelves with an insulating film.

The treated objects are sensitive to humidity, so it is vital to keep them in a relative humidity **that is lower than 30%**. It is necessary to avoid sudden and repeated variations of the humidity and temperature levels that could cause dimensional variations leading to cracking and detachments.

It is also best to keep them away from direct light, whether it be natural or artificial. UV rays can cause the degradation of protective resins.

The intensity, duration and composition of the light are the main factors to control to ensure a good conservation of the works.



THANKS TO (in alphabetical order)

Mr Abdellah ALAOUI, Moroccan Cultural Heritage
Director at the Ministry of Culture,

Mr Mohamed BELATIQ, Museum Division Manager,

Ms Khadija BOURCHOUK, Conservator of the
Archaeological Museum of Rabat,

Who kindly accepted the request to upload this
slideshow.



Royaume du Maroc
Ministère de la Culture
Direction du patrimoine culturel

Laboratory of Conservation, Restoration and Research,
LC2R Draguignan, F. MIELCAREK





Françoise MIELCAREK
Conservator-Restorer of metal/composite materials,
LC2R
Partner of SCOP LC2R
Hygiene and Safety Advisor, LC2R

Jacques REBIERE
Conservator-Restorer of metal, LC2R
Manager of SCOP LC2R
Disaster Management Advisor, LC2R

Laboratoire de Conservation, Restauration
et Recherche

LC2R Draguignan

19, rue Frédéric Mireur

83300 Draguignan

04.94.68.90.15

lc2r.conservation@orange.fr

www.art-conservation.fr

Laboratory of Conservation, Restoration and Research,
LC2R Draguignan, F. MIELCAREK

