

# National Museum of Beirut: the Conservation of the Sculpture and Stone Objects.

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**Stone Conservator**  
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This was my second visit to the National Museum of Beirut, again funded by the British Council and the Lebanese British Friends of the National Museum. On my first trip, in June 1996, my task had been to assess the condition of the sculpture and draw up a list of the materials and equipment required to conserve them. This time, my aim was to put the conservation programme into practice.

I arrived in Beirut on January 19th, 1997 and stayed for one month. Isabelle Skaf, the Senior Conservator had selected the sculptures and stone objects with the widest variety of problems so that each stage of the conservation process could be demonstrated to the conservators and a team of enthusiastic Lebanese trainees. These skills were shown again and again and practised alongside the conservators and trainees, until they felt comfortable with the techniques.

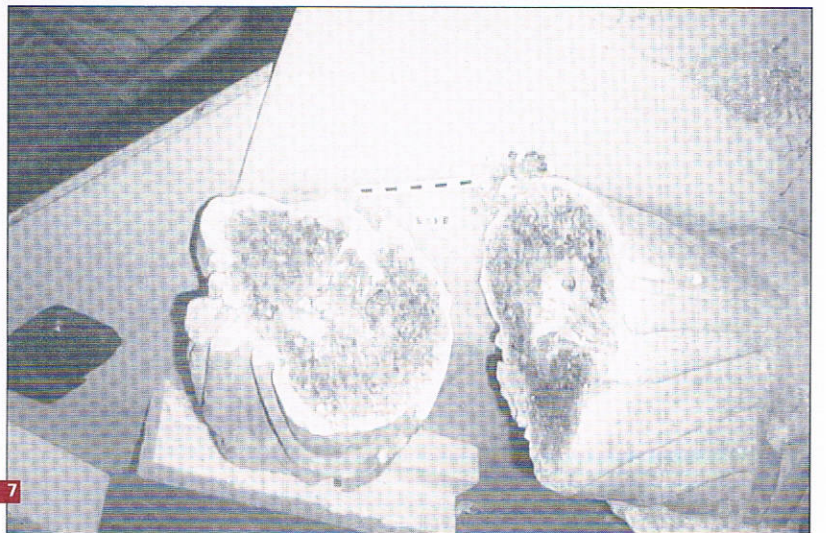
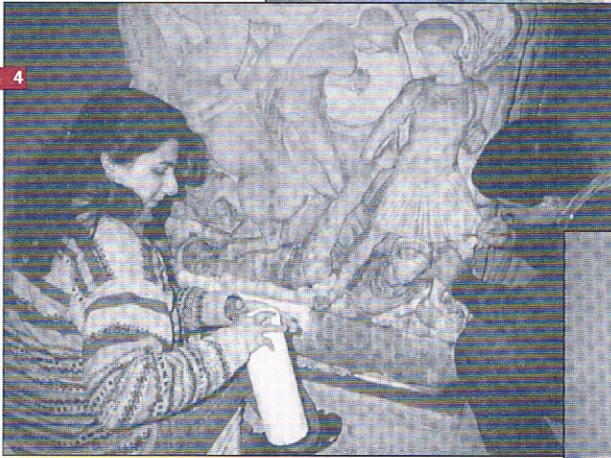
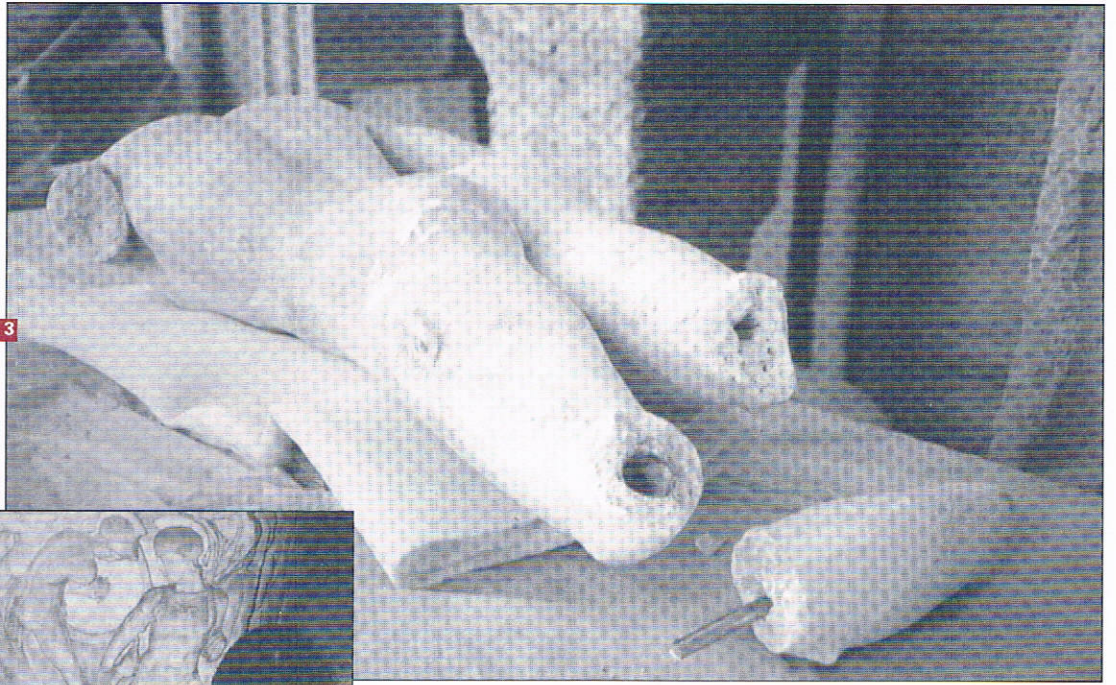
Some of the problems have arisen from long-past restorations: ferrous dowels used to pin broken elements together using various fillings such as cement, resin, wax and lead (fig. 1). The old rusting, metal dowels were causing some staining but the major problem was the expansion of the ferrous metal putting pressure on the stone and causing it to crack .

For the first stage of the work programme we began by parting the loose sections of stone and drilling out the filling around the dowels and fixings so that they could be removed (fig. 2). The holes were cleaned out (fig. 3). A number of sculptures had been splashed with cement when they were placed in their protective concrete bunkers during the war. The cement was carefully removed manually, using chisels and scalpels (fig.4). In a few cases the residue of cement has remained in the pores of the stone. This is a long process to remove manually and it is hoped that this will be removed with an air abrasive machine at a later date. The air abrasive machine can be used carefully to reduce stubborn stains and to remove the cement from the sculptures and stone objects.

Once the cement and ferrous dowels had been removed, the objects were steam cleaned (fig. 5) with excellent results (fig. 6). Cleaning began at the base of the sculpture, working towards the top. Once cleaned, any loose pieces were put back using the old dowel holes, if available (fig. 7). Where the dowel holes were considered too shallow, they were drilled deeper. The appropriate length of new stainless steel dowel was cut and keyed ready for fixing. Before each section was adhered, the piece was dry-tested to check the alignment. The polyester resin was then mixed and applied and the sections put together.



1. Ferrous dowel in the leg of a sculpture.
2. Drilling out the cement from around a ferrous dowel.



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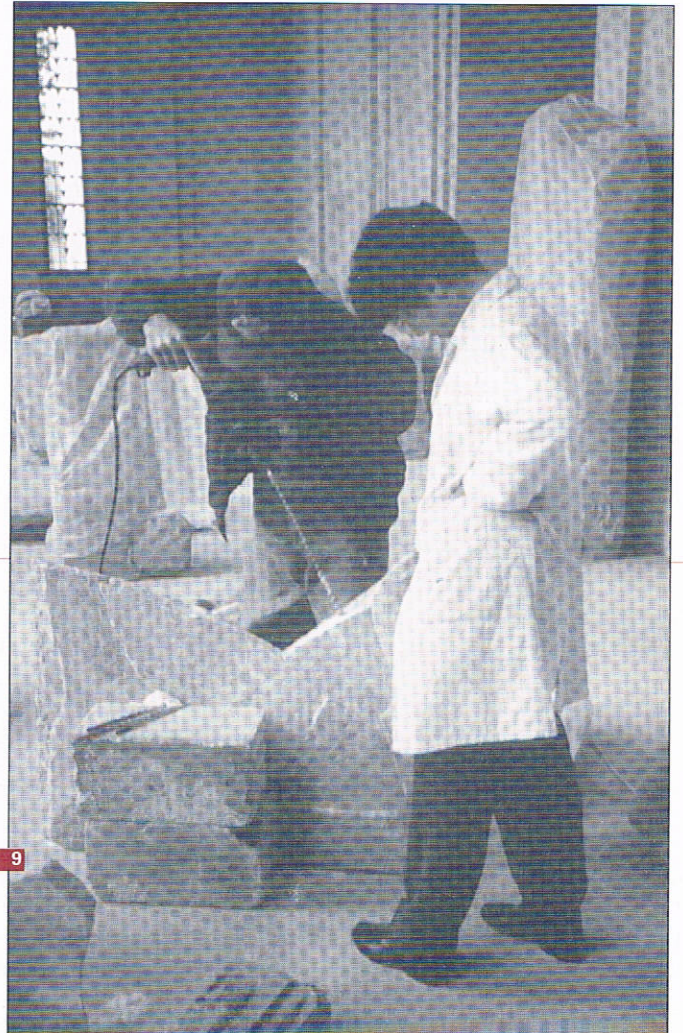
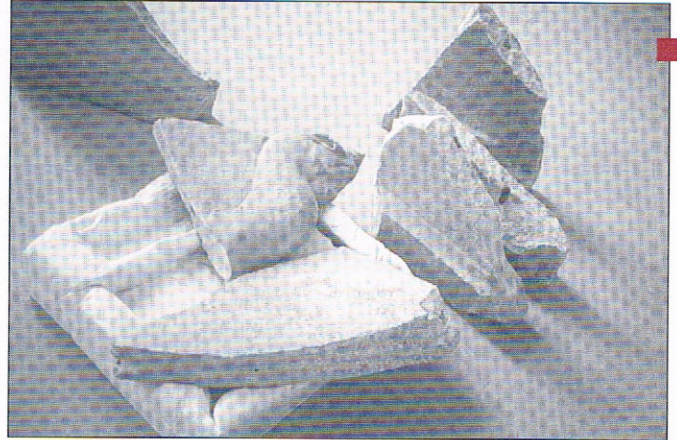
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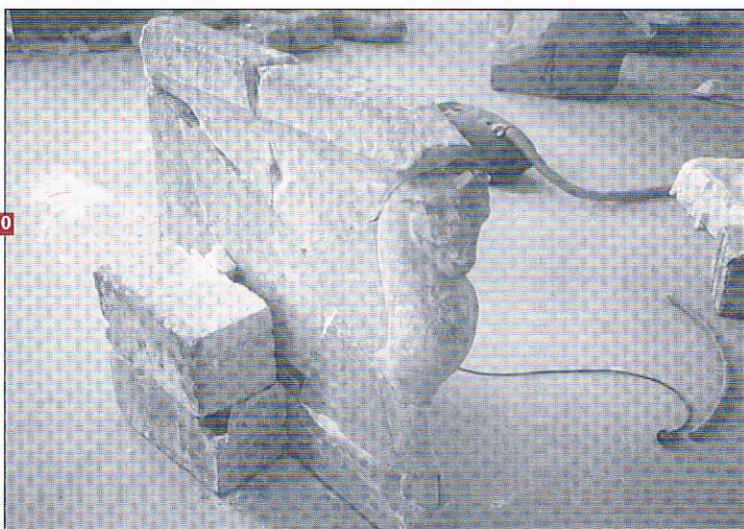
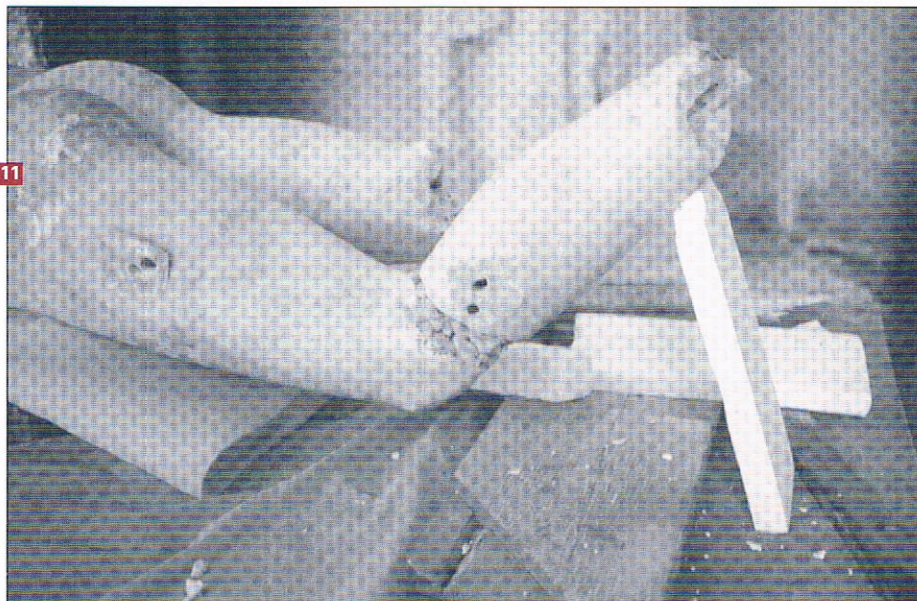
The piecing together of fragments more recently broken (fig. 8) and which therefore had not previously been dowelled, had also to be demonstrated. To mark the required position of the dowel hole, acrylic paint was spotted onto one of the breaks' edges. The two sections were united giving the location of the dowel on both fragments. As much practice as possible was given to the accurate drilling of the holes and fixing of the pieces (fig. 9&10). Some objects were difficult to dowel: the leg of Apollo, for example, had a large area missing around the break, so the lower leg had to be set up carefully to achieve the correct alignment (Fig. 11). A number of objects had ferrous fixings, these were also drilled and removed.

Final preparation of the sculptures for presentation included cosmetic fills (fig. 12&13) and colour matching, as well as mounting. Where in some cases the bases and backs of the stone objects is uneven, a resin polyester pad must be made to support it. This is an exacting process involving a variety of techniques.

During the one month I spent at the museum, the most difficult repairs had been carried out and, by the end of my stay, I felt confident that the conservators and trainees had acquired the necessary skills to continue this stage of the conservation programme. Challenges which lie ahead include the treatment of the mosaics and more sophisticated cleaning techniques.

3. The dowel holes have been cleaned out.
4. Removing the residue of cement with a scalpel from the surface of an object.
5. Steam cleaning.
6. Head from the sarcophagus half cleaned.
7. The dowel holes will be cleaned out and reused for dowelling.
8. An object that requires new dowel holes.
9. Drilling the next section.





10 The object repaired.

11. The lower leg of Apollo, a difficult piece to align & dowel.

12 Gap filling with Paraloid B72/1372 in acetone & IMS 20% with microballoons.

13 A sculpture that has been filled.