

Restoration of the Lion of Allat statue from Palmyra after the 2015 devastation



Abstract: The Lion of Allat statue from the Temple of Allat in Palmyra suffered extensive damages during the 2015 devastation of monuments in the ancient oasis city. Discovered in the mid 1970s, it was reconstructed in 1977 and then preserved again in a new arrangement that recalled the original context of the statue in 2005. In 2017 and 2018, the statue was recreated once again in the gardens of the National Museum in Damascus. The article traces the restoration process, providing detailed data on the current condition of this monumental statue.

Keywords: Palmyra, Lion of Allat, restoration

The lion statue from the 1st-century BC Temple of Allat was discovered in 1977 by a Polish archaeological expedition directed by Michał Gawlikowski. It was found in pieces, reused in antiquity in a foundation placed in the temple courtyard (Gawlikowski 2017). After the discovery, the fragments were remounted in front of the entrance to the Archaeological Museum of Palmyra by the restorer Józef Gazy.

After 25 years, a new restoration of the lion was necessary and in 2005 a project for a new display of the statue prepared by Bartosz Markowski was finally implemented (Markowski 2005). The main objectives of the new setting and restoration were to recreate the original form of the lion as a relief representation and to provide a supporting construction that would ensure a proper counterweight for the statue. To accomplish

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Fig. 1. The destroyed Lion of Allat: top, state in April 2016; bottom, close-up of the defaced lion's head (PCMA UW Documentation Center | photos B. Markowski and R. Żukowski)

these goals the statue had to be dismantled and remounted on a new foundation connected to a reinforced concrete wall backing the sculptured fragments and acting as a counterbalance for the forward tilting tendency. Stone blocks on either side of the lion were supposed to imitate the wall, against which the statue had once stood. The new restoration project also called for a reconstruction of the missing curls of the mane in order to improve the overall aesthetic reception.

The figure of the lion is 3.46 m high from top to base, and 1.94 m wide at the head. It is made of more or less 12 original soft limestone elements and, since 2005, joined to 14 new blocks of compact limestone, which reconstruct some missing original elements and imitate a non-existing wall to create a backdrop for the relief. With the new blocks the statue is 5.10 m wide.

After 10 years, in spring 2015, when the crisis was close to Palmyra, the statue was protected with metal shields installed on steel rods drilled into the reconstructed stone elements. However, the shields were removed and the statue, like many of the priceless monuments of Palmyra, was destroyed in the wake of an unprecedented act of vandalism, probably on 23 May 2015 (<http://www.dailymail.co.uk/news/article-3101031/ISIS-destroys-famous-lion-god-statue-captured-Syrian-city-just-days-promising-locals-not-obliterate-Palmyra-s-ancient-monuments.html> [accessed: 10.08.2019]). The destruction of the statue was done by using a bulldozer to knock the sculpture down on its back. The concrete structure at the back of the statue cracked in two places: at the base and at a height of 0.70 m, just under the

antelope's head. The large stone elements did not fracture or break as they were anchored in concrete. The lion's muzzle was shattered. Smaller sculptured details were hammered out [Fig. 1].

Directly after the liberation of Palmyra on 27 March 2016, between 8–14 April 2016, the fragments of the statue were collected by Polish specialists Bartosz Markowski and Robert Żukowski, sent to Palmyra by the Polish Centre of Mediterranean Archaeology University of Warsaw [Fig. 2]. Then, on 1 May 2016, using a Russian military crane, Polish and Syrian specialists and Russian army sappers moved the fragments in preparation for transport to Damascus. This took place in July 2016 under the supervision of Syrian specialists.

The UNESCO–DGAM restoration project started on 14 June 2017 and was completed by 1 October 2017 when the official opening took place. The process was financed by UNESCO within the frame of the *Emergency Safeguarding of the Syrian Cultural Heritage* program funded by the European Union. On the Syrian side, the project was coordinated by the DGAM (Directorate General of Antiquities and Museums). The restoration was carried out by Bartosz Markowski with assistance from Jihad Abou Kahla and Firas Dadoukh as coordinator of the building work (Markowski 2017).

DAMAGE ASSESSMENT

Most of the sculptured fragments of the statue, which had been hacked off, were found scattered in a 20 m radius around the statue. The original fragments of the sculpture were relatively easy to recognize among the stone and concrete rubble,



Fig. 2. The destroyed Lion of Allat: fragments of the statue collected in April 2016 in its original location in the museum grounds in Palmyra (PCMA UW Documentation Center | photo B. Markowski)



Fig. 3. The lion fragments in their new location in the gardens of the National Museum in Damascus: removing the old concrete backing of the statue, June 2017 (PCMA UW Documentation Center | photo B. Markowski)

because the lion was made of a characteristic soft limestone, easily separated from the more compact modern limestone and mortar. In April 2016, the fragments were collected in placed in cases.

All the biggest fragments of the statue were found with the exception of a part of the lion's lower jaw. The destruction was mostly mechanical. Stone elements were cracked and separated when the statue was pushed over and hammered with heavy tools. The most destroyed part was the lion's head [see *Fig 1* bottom]. The muzzle, partly reconstructed in 1977, was shattered and details like the nose and lower jaw were broken into small fragments. The curls over the left paw, the nose of the antelope and the toes also demonstrated severe damage. There was also plenty of lesser damage and scratching of the original stone surface. The stone blocks reconstructed in 2005 were also damaged, but not very heavily; some corners and edges were broken. There were also some bullet marks.

PROJECT ASSUMPTIONS

The main objective of the restoration in 2017 was to preserve the statue anew and to arrange it in its new place of exposition in the National Museum in Damascus [Fig. 3]. It was decided to recreate the project from 2005, using not only all the original fragments of the sculpture, but also those reconstructed in the previous restorations of 1977 and 2005. There being no viable alternative, it was decided to apply the original conservation methodology as in 2005. The big stone elements were assembled with mineral mortar based on white cement, small fragments with artificial resin and con-

struction reinforcement with stainless steel. Like in the previous restoration processes in 1977 and 2005, all the materials met the strength requirements and are easy to distinguish from the original fragments of soft limestone. Moreover, the influence of new materials, like mineral mortars and epoxy resin, on the original soft limestone fragments was reduced to a minimum by impregnation of the surface with Paraloid B-72.

The concrete backing of the statue, which had been broken, needed to be replaced following the same design that was used in 2005 [see *Fig. 3*]. The place chosen for the new presentation of the statue is in the southeastern part of the museum gardens, by one of the fountains. After restoration, the lion is facing west, the large space in front of it providing a good view of the statue.

PROCESS OF CONSERVATION AND RESTORATION

The first step was to remove the broken concrete backing of the statue [Figs 3, 4 left]. The process had to be carried out by hand, using an electric grinder and cleaving the concrete off piece by piece; the strong vibrations of a pneumatic hammer could have damaged the original limestone blocks. Only about 25 cm of the thickness of the concrete backing had to be removed, just enough to make room for the new stainless steel backing [Fig. 4 right]. The most damaged upper fragment of the statue with the lion's head was divided into four fragments.

The face of the lion had to be taken down in smaller pieces and reassembled [Fig. 6]. The main problem was that the head had been reconstructed partly after

its discovery in 1977 and after the hammering in 2015 there were original fragments, reconstructed fragments, parts that were broken in 2015 and found in 2016, and parts that were lost irretrievably.

The backing structure from 1977 was made of concrete reinforced with stainless rebar. It still worked, so there was no need to change it. The steel elements were uncovered and protected with Paraloid B-67 (5% in nitro) to inhibit corrosion process.

The reconstructions of the sculptured form from 1977, made in white cement and sand, were retained unless it was easier to replace them with new ones. Smaller and well-matched fragments,

both original and reconstructed in 1977, were connected with epoxy resin mixed with limestone powder. In all cases, the surface of the original limestone was protected with Paraloid B-72 (3% in acetone) before application of either resin or mineral glue. The latter (white or grey, based on modified cement) was used for connecting bigger fragments that had been reconstructed before. Stainless-steel anchors or rods were used for essential reinforcement; the biggest anchors were mounted under the nose, over the crack on the left side of the upper element of the head, and to support the new reconstruction of the lower jaw fragments that were lost in the recent destruction [see Fig. 6 top]. Cavities were filled with min-



Fig. 4. The back of the statue, June 2017: left, removing the old backing; right, the new reinforcement, September 2017 (PCMA UW Documentation Center | photos B. Markowski)

eral mortar made of white cement and quartz sand (1:3), same as in the previous restorations. The biggest reconstruction was made on the lower jaw, teeth and tongue of the lion, smaller on the

nose and right cheek [compare *Fig. 7*]. Many small gaps had to be filled. Some of original fragments were cracked, but still stuck together. They were located on the head (eyebrows, left cheek) and also



Fig. 5. Assembling fragments of the statue, September 2017 (PCMA UW Documentation Center | photos B. Markowski)

on lion's trunk (original curls on the left paw). In these cases the best solution was to make injections of liquid epoxy resin mixed with some fine-grained limestone powder.

The elements of the statue were assembled on the new foundation slab in the museum gardens using a heavy crane. Stone blocks were picked up on textile belts and one by one put in place [Fig. 5].



Fig. 6. Assembling fragments: top, the lion's nose, and bottom, the gazelle's original nose, September 2017 (PCMA UW Documentation Center | photos B. Markowski)

Leaving a 10 cm-thick section of the old backing allowed the bigger elements to be moved with greater ease and more effectively, while retaining the connection between them (like the paws and curls on the lion's body). During the reassembly, grouting was performed and the space between stone elements were filled with mineral mortar made of white cement and quartz sand (1:3). In order to lessen the thrust of the lion's head on the edge of the blocks below it and to prevent fragments from breaking off, a stainless-steel flat bar measuring 1 × 10 × 150 cm was placed at a distance of 15 cm from the edge. The elements above this bar will be supported on it and not on the edge of the stone.

Once all the fragments had been set in place, the concrete backing of the statue was made. As explained above, the old

stainless-steel anchors (from 2005) were already set inside both the original limestone elements and the new stone pieces; since they were performing the task, there was no need to drill any new holes. Wooden boarding was prepared and the space in back of the statue was filled with concrete the same way as in 2005.

On the front side of the statue, the surface of the compact-limestone blocks reconstructed in 2005 was cleaned wet-grinding it with diamond brushes. Broken fragments were reassembled with epoxy resin, reconstructed when necessary with stone flecks or mineral mortar reinforced with stainless-steel anchors. The surface of the original fragments was cleaned of soil that accumulated in the pockets using a wooden spatula so as not to scratch the soft limestone. Then it was washed with a small amount of water using soft



Fig. 7. The head of the Lion of Allat after restoration, October 2018 (PCMA UW Documentation Center | photo B. Markowski)



Fig. 8. The Lion of Allat statue after restoration, October 2018 (PCMA UW Documentation Center | photo B. Markowski)



Fig. 9. Stratigraphy of the reconstructions of the Lion of Allat statue after restoration, October 2018 (PCMA UW Documentation Center | photo B. Markowski)

brushes. Some small original fragments, like the toes and parts of curls, were re-assembled in similar fashion (Paraloid B-72, epoxy resin, limestone powder). The missing parts were filled out and reconstructed where necessary (white cement and quartz sand 1:3).

The main issue was to find an aesthetical balance between all the elements of the composition: original fragments, stone reconstructions made in 2005, mortar reconstructions made in 1977 and 2005, missing and lost fragments after the 2015 destruction [Figs 8, 9]. Some recent damages, like bullet marks, were left as witnesses of the latest history of this

monument. That is why some parts were reconstructed in smaller detail, while others just as a general shape. The main reconstructions were made around the toes, on the curls over the lion's left paw and on both sides of the head. The nose of the antelope was reconstructed first, but then replaced with with the original fragment when it was fortunately found in October 2018 [Fig. 6 bottom].

The last step in the restoration process was a color unification of the new elements to give the statue an aesthetical pleasing appearance. The original soft limestone elements were not unified or protected in any other way.

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