Chapter 6

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The issue of Preservation and Protection of Monumental Anthropomorphic Stelae in Eastern Europe. Condition of Stelae After Conservation

1. The Issue of Protection of the Monumental Sculpture in Eastern Europe

The issue related to the conservation and protection of monumental anthropomorphic sculptures in Eastern Europe is complicated due to the specific political and economic situation, having also consequences for subjects associated with culture and art. In this chapter I will discuss certain aspects related to the status of protection of the anthropomorphic stelae.

The lack of any activities aimed at rescuing the anthropomorphic stelae arises from two causes. The first is the complex of issues resulting from a lack of social education, the state of national culture, level of interest and commitment of the scientific society and the condition of the public administration. The latter organization should establish and promote material and spiritual values important for the nation. Its responsibilities include activities related to the broadly understood executive. It possesses legally sanctioned possibilities of protecting and rescuing objects constituting the national heritage. It administers state funds and determines their intended destination. A great obstacle against the smooth operation of executive state authorities is the lack of legal provisions. In the case of the protection of monuments it is important to respect the existing law and its efficient enforcement, even if it is obsolete or imperfectly developed. An important problem for administrative bodies in the case of managing historic objects is the proper disposal of allocated funds.

Further causes of the lack of visible protection of monumental sculptures are problems related to the objects themselves. These include material aspects, such as: the condition of an object, large dimensions, and immaterial aspects including consequences of the broken integrity of statues and the loss of public awareness of the function of statues. It arises from historical and ethnographical changes and lack of inheritors of the spiritual culture of the stelae's creators.

The effect is the indifferent treatment of relics by the institution and private owners responsible for them but also the way of their exhibition. The abovementioned processes are related to most of categories of relics and are a universal problem also in other areas of the world.

The lack of historical and cultural continuity in the tradition of erecting stone stelae, a consequence of the unification of the spiritual and cultural spheres within the environment of the Polovtsian's descendants around the 15th century, left cult-sacrifice complexes without care and proper attention by local societies. Historical sources record that in areas where Tatars camped, the places where stelae had been located aroused their respect (Daszkiewicz, Tryjarski, 1982, 66). They have not been destroyed, but also they have not been cared for. The influx of Slavic settlers to the steppe area caused by the territorial expansion of Poland in the 16th century and then a period of intense colonisation conducted by Russia in the 18th century caused massive destruction of places dedicated to the "foreign" worship and objects associated with it. The process continued for the following centuries. After the middle of the 20th century, the number of monuments was reduced to a drastic extent, which was caused also by the extremely fierce fighting of World War II in these areas. The establishment of research during the post-war period contributed to drawing the attention of the scientific community to the pressing issue of preservation of archaeological sites and relics. In Eastern Europe during the 1970s and 1980s, there was a tendency to create local museum institutions (usually regional), collecting monuments that resulted from archaeological research conducted a decade earlier during the intense reconstruction of the country in accordance with the socialistic spirit accompanied by large investments. At that time many stelae were brought from construction sites or from sites where they were still preserved. Unfortunately, most of objects acquired in collections at that time had no detailed data in museum notes, including any information about the place where they had been found and the context of their discovery. The lack of knowledge about stelae and their cultural significance, despite the efforts of charismatic scientists such as G. A. Fedorov-Davidov or S. A. Pletneva, caused anthropomorphic stelae to be treated until today in a secondary manner, as objects not belonging directly to the culture and heritage of contemporary states. Such relics remain outside the mainstream interest of both scientific and local communities.

Relics of monumental art belong to the category of objects that become victims of contemporary vandals caused by a human carelessness and stupidity. This results from the carelessness of people responsible for the supervision of the monuments (museums, administration and private owners). Often their condition has been further degraded by incompetently performed "repair" actions or improper ideas concerning their "preservation". For several years, a museum in a large Ukrainian city appealed through the media to the state authorities for financial funds for the construction of a glass dome over the

largest collection of anthropomorphic stelae in the world. The idea was utopian not only due to the condition of the state budget and the amount requested, but also the senselessness of the concept itself. Apart from the technical and architectural issues, none of the organisers thought that isolating stelae by sheltering them would reduce the progressive degradation of the statues. Their many years of exposure to the open air, subjecting them to an atmosphere that had been highly poisoned by the industrial facilities that were numerous in that city and its neighbourhood, resulted in the clear weakening of the stone structure on most of the exhibits. No one thought that with much smaller amounts of money and effort, based on the international cooperation that was already possible at that time, it would be possible to commence the conservation of stelae instead of waiting when the entire collection would “break up” taking its status literally. No one thought that for each stela it would have been possible to make a wooden construction that would protect it from the autumn and winter weather. These actions could have been taken successively, through many years, and with funds at the disposal of the museum. This example demonstrates the helplessness and lack of creativity of people who, due to their profession, are obliged to preserve monuments and undertake actions associated with their protection. The situation took place in a large city of status. It does not require great imagination to understand what happens in provincial institutions.

The political and economic changes in Eastern Europe caused the emergence of a new social class with access to large financial resources. Some of its representatives, looking for a noble hobby, engaged themselves in purchasing and collecting certain types of monuments of the so called “antiquity”. Private owners protect their collections without justification, afraid of revealing sources of origins. They are not willing to cooperate with archaeologists and do not allow for their relics to be documented. It is impossible to assess how many objects remain outside the “scientific circle” as a result. Paradoxically, the lack of access of the general public to these exemplars contributes to their safety, because they are not exposed to vandalism. Unfortunately the passion of collectors has also negative aspects. These include the lack of professional care and low awareness of collectors themselves of hazards affecting the condition of statues exhibited in badly selected places.

It would be good if, in the near future, exemplars from private collections were made available to professionals in order to be documented, and the specific contribution of private owners were the patronage associated with the professional conservation and appropriate exhibition of statues, protecting them from further destruction. It would be possible then to acquire them for the scientific world and, above all, rescue them from destruction.

Scientific publications, historical and contemporary, written by archaeologists and historians analysing the monumental sculptures of the Polovtsians, have

been described in chapter II. New findings of stelae are usually published as short articles, notes in reports or laconic information in works dedicated to studies on cultural complexes, individual kurgans or temple establishments. Sometimes, the researchers attach a schematic drawing of a sculpture. Photographs of a finding are rarely included. Many individual statues is not documented nor published at all. Rarely they are intended for exhibition. Usually, they are deposited in an archive or museum lapidarium. They are often left close to walls of museums or local authority buildings, hoping that no one will steal them. Sometimes, statues are placed within museum premises, without care for their proper protection or display. Some collections, presented in the open air, also have never been published, although they are an excellent material for a monograph with an extensive photographic catalogue. Information about individual exemplars of stelae, as well as about entire collections, could have been included in scientific exchanges, if it were not a problem to obtain permission for publications. Persons responsible for managing the scientific facilities, authors of archaeological or ethnographic research, who are not interested in them, evade publishing such material. Further problems arise from obtaining permission for documenting from private owners, reluctant to disclose the sources of their relics. The above specified obstacles arise also from a lack of awareness of how precious this group of relics is for the cultural heritage of Europe. This problem is perceived by local representatives of the younger generation or foreigners who participate in research or field and museum queries. Their enthusiasm, however, is quickly overcome by a lack of willingness to cooperate and the passivity of authorities of local museums, landscape parks or local administrative structures, which are responsible for monumental sculptures (not only mediaeval), even when people interested in saving and documenting them possess funds for executing the abovementioned measures (e.g. full documentation, preservation, etc.). The authors, preparing themselves for the execution of conservatory operations at the Veliko-Anadol Forest Museum, have personally experienced the strength of determination necessary to accomplish previously established plans, starting from the formal organisation of the expedition, through the purchase, transport or rental the simplest equipment and chemicals, to the on-site completion of conservatory activities. However, one should not be discouraged by the indifference, passivity, lack of understating or malicious acts initially experienced, but should patiently explain the purpose of the project and continue works despite obstacles arising first of all from the lack of awareness and education of others. To make such actions possible, the help of local people, whose motivation and interest can be targeted at involvement in the international cooperation, is necessary. You may also try to initiate a group of workers from the nearest museum, making them aware that the art of stelae is a phenomenon of importance on both a European and a global scale, and that the issue of preserving them opens possibilities for wide scientific contact with foreign institutions.

2. Problems Related to the Protection, Exhibition and Preservation of Anthropomorphic Stelae

Figures made of stone monoliths, boulders or stones crumbled from deposits, characterised by solid dimensions, in terms of both weight and volume. The specificity and awareness of the material and tool capacities forced adjustments in the technique of processing the raw material to create a dense and massive body. Depending on the level of competencies and technical capacities of creators, more or less synthetic or more subtle stelae with individualised anatomical features have been created. The technique of assembly – embedding in the ground – included in the body, in addition to the human representation, also a lower, unprocessed part of the stone. The notable robustness and resistance of the material, in addition to logistic problems, allowed some of the objects to resist centuries of erosion and survive to modern times.

The ideal scenario involves leaving the sculptures *in situ*, in connection with a complex, multidisciplinary research programme and integrated physical, conservatory and engineering protection, as well as the monitoring of the entire kurgan establishment. In the absence of sufficient financial resources, a compromise solution would be the protection and monitoring of the kurgan establishment itself, and transport of the statues to the nearest museum followed by geodetic, archaeological and conservatory inventory, photographic and descriptive documentation.

Transport is, in many cases, a cause of destructions to historic objects. During transportation of sculptures the exercise of great caution is required, taking into account their large dimensions and weight. A sculpture should be immobilised, placed in a horizontal position on its back side. It should be protected with soft pads. It can be also wrapped with a thick blanket, isolating it earlier from the ground with a thick sponge or polystyrene. Having more time for preparations, it is possible to create a negative sarcophagus or develop other, efficient solutions fixing the object in place. The stabilisation of stelae during transportation can be strengthened with some form of shuttering made of boards or wooden beams, using tapes or tension rubbers, etc. It is important that security measures are placed under the entire surface of the object! Protruding elements should be treated with particular caution (hats, shoulders, hem of caftan, all edges and protruding elements).

The entire process of integrating an object into a museum collection should be overseen by a conscientious museum employee, archaeologist or conservator cooperating with a team of museum employees or having contacts with local administrative, cultural and educational authorities. This cooperation is important at each stage of the inventory, conservation and exhibition of a relic, starting with well-documented excavation from the ground, through thoughtful,

professionally designed and constructed elements intended for loading and re-loading an object, its preservation and stabilisation during transport, through conservation, up to the creation of an exhibition with extended didactic and educational functions. The method of exhibition can be a problematic stage. Stone babas as three-dimensional objects, from the very beginning intended for exhibition in the open air, and should be exhibited with additional space provided. Due to their age, they should be protected from extreme weather conditions. The ideal place of exhibition would be a courtyard covered with a glass roof, in which it would be possible to create a kurgan together with a reconstruction of a cult-sacrifice place. Then, an isolated figure would be set into such prepared background using the original embedding technique.

In addition to historical and aesthetical values, this would solve an important issue regarding the redundancy of the technical lower element of the statue. We know cases in which the unadorned lower part, originally intended for stabilising an anthropomorphic stela in the ground, has been crushed or broken off. These sections are often seen to be problematic and irrelevant in museum displays. When there is no lower part, it is important to remember that a statue needs to be exhibited in a vertical position. Therefore, having in mind guidelines for conservation, it is necessary to design an appropriate, non-invasive frame or stabilising "foot" for an object, but not one connected to it permanently. It would serve to hold a body of sculpture as a holdfast and an ideal, negative fit. Such construction can be easily covered during the exhibition process, safe for both exhibited object and viewers. The design and implementation of the stabilising construction should be made in cooperation with a conservationist and an artist or designer with engineering competences.

A preserved object should be isolated from the ground. At the final exhibition place, isolation should be made in order to prevent water being sucked into capillaries from the ground. In the case of exhibition on a metal frame, it is required to secure the ground from excessive humidity so as not to expose it to corrosion.

When an object is already in a permanent collection, it should be regularly cared for. An object should be swept with soft-bristled brushes or dusted off, in order to remove loose layers (dust, leaves). In the case of deposited dirt, a sculpture should be rinsed with water (possibly with an appropriate amount of biodegradable detergent), using "soft" brushes and brooms. Improper use of a water stream can lead to serious mechanical damage of a sculpture! Any cleaning should be made under stable temperature conditions allowing the sculpture to dry easily. Any permanent stains or spills should be removed only by a conservator of art. This is also important during implementation of other possible conservatory measures (e.g. re-hydrophobisation of a sculpture). A statue should be protected from growing plants. Greenery should not come into contact with the surface of an object, nor should the area around an exhibit become overgrown.

It is recommended to extend conservatory surveillance and to perform preventative research in order to check and assess the preservation status of sculptures. Any innovations and initiatives of people, either those professionally associated with museum activities or otherwise, and any issues of protection and conservation of relics associated with a method of exhibition or protection of an object should aim above all at the well-being and safety of a monument.

3. Condition of Sculptures from the Collection of the Veliko-Anadol Forest Museum After the Technical Preservation in 2008

Originally, the preservation of stelae from the Veliko-Anadol Forest Museum planned to undertake a full spectrum of measures on 3 sculptures. The aim was the technical and preservative conservation focused on cleaning statues, removing secondary layers and stopping destructive processes. The basic conservatory assumption was to stop processes of degradation of the sculptures, caused by environmental factors and destructive activities of people, and improving the aesthetics of the statues' exhibition. The schedule of works was considered in detail for each object individually. The general outline included:

1. removal of loose layers with soft brushes,
2. cleaning the surface from dirt with: water, water and detergent, steam, water under controlled and regulated pressure,
3. removal of secondary harmful layers,
4. removal of sealing patina chemical or mechanical,
5. desalination,
6. disinfection,
7. injections of cracks,
8. filling cavities that threaten the sculpture's structure,
9. possible color unification of putties,
10. possible reinforcing impregnation,
11. possible hydrofobing impregnation.

In reality, the programme was extended to include:

1. control of the greenery overgrowing the nearest area,
2. execution of preventive draining channels in the vicinity of the exhibition,
3. change of the exhibition structure – partial dismantling of a wall,
4. wider preventive reconstruction, including aesthetic reconstruction.

All measures undertaken on objects were preceded with careful visual inspections and debate, allowing for the selection of optimal conservatory methods and measures. We took a decision to perform the technical

conservation and restricted reconstruction of ten embedded statues ("babas" 1 – 10), including extensive aesthetic restoration in one case where the head of a stela was missing (indicated as "baba 7") and stopping destructive processes to four exemplars ("babas 11 – 14") located in front of the museum. The work was divided into stages. Photographic and descriptive documentation was developed. This was followed by technical treatment in the nearest vicinity of statues. The first activity done by conservators and some archaeologists was cleaning the area, cutting branches that endangered the safety of statues and digging drainage grooves through which rain water was drained away from the base of the wall. In a pile of dead plants near the exhibited stelae, we found a broken sculpture ("baba 25") that was given to the museum in Donetsk (see: Fig. 5.2, 5.3). It had been laying there probably for 30 years.

The next stage was the conservation:

1. The first step after preparing photographic documentation of the condition of sculptures, before taking conservatory measures, was to clean loose layers from objects. Using brushes and brooms with various softness of bristles (natural or artificial), we delicately removed parts of the microflora, insects, dust, soil, cobwebs and all other redundant elements not integrally connected to an object.
2. Then, also with brushes and brooms, we removed layers by rinsing them with water or water and a little bit of detergent.

Fig. 6.1. Programme of conservatory measures in 2008: cleaning the surface from dirt with water and detergent.

After detecting the great resilience and good condition of the stone in most of cases, the objects were rinsed with water under pressure, controlling the pressure and the distance of the nozzle from an object, using the Kärcher pressure washer.

3. The adverse layers included:

- a. decomposed seals made of a cement mortar inconsistent in terms of form, structure and colour, in some places covering large areas – the visible effects of unprofessional repairs,
- b. splashes of oil paint other than inventory marks,
- c. traces of renovation from previous locations, or acts of vandalism.

The secondary layers were removed, leaving those that could not beyond doubt be dated as contemporary.

4. Removing the sealing patina was restricted to activities performed during the standard cleaning procedure, therefore it was possible to remove it only to a limited extent. Unfortunately, full removal of the patina was impossible due to the inability to import chemical substances through the border of the Schengen Area and lack of possibility to purchase them on site.

5. The desalination planned through the method of migration of salt to the extended environment was restricted due to several reasons:

- a. The problem does not apply to stones with the crystal-like structure such as granites, tonalites, etc. due to their limited absorptivity, or applies to a negligible extent. Two stelae have been eliminated because of this ("baba 3" and "6").
- b. Practical considerations – possessed supplies of chemical substances were treated as a sample. The amount was intended to show a trainee Ukrainian conservator and Polish students the conservation of relics. Additional purchases were not possible. Supplies ran out quickly.
- c. Logistical considerations – the purchase of lignin was impossible. In Ukraine this material is not intended for sale.

The compresses applied did not show significant efflorescence. Salts contained within the stone, at least close to the surface, were washed out by rainwater. After initial attempts, the desalination was treated prophylactically. This was aimed at dissolving and rinsing salts tied to the subsurface stone structure.

6. Due to the harmful activity of microorganisms, we resumed the disinfection of the stone surface with a solution of Preventol ON in ethanol. To improve the efficiency of the treatment, after the application of the substance the sculptures were wrapped in a foil for 24 hours, in order to create a kind of disinfection chamber.

Fig. 6.2. Programme of conservatory measures in 2008: after removal of wall, sealing patina and secondary harmful layers and after desalination.

Fig. 6.3. Programme of conservatory measures in 2008: disinfection.

The importation of spirits or denatured alcohol for the preparation of the biocide formulation seemed to be pointless. However, it turned out that in Ukraine the availability of technical alcohol is very restricted. The solution was made by purchasing moonshine of a good quality brewed by local producers.

7. Cracks and pockets caused by leaching of less coherent sedimentation layers were injected with the formulation Winacet DP 50/00.

Fig. 6.4. Programme of conservatory measures in 2008: injections of cracks.

8. Secondary holes used to fasten statues with metal bolts to walls were isolated. Surfaces of deep, contemporary incisions caused by vandalism were aligned. To fill damages on some sculptures we applied Remmers Restauriermortel mineral putty which we had brought designed for historic objects. Also a sand and lime mortar was made on site with the addition of white cement. The colour of putties and mortar was modified with natural pigments. Filling masses were applied depending on the area subjected to works in layers with a thickness of 2-3 cm. In places of smaller additions, the mortar was prepared based on the seed formulation Aida Haftfest. After binding the additions were processed with carefully selected masonry tools.

9. The unification of colours, treated as a preventive measure, where we observed colour discrepancies in the stone context has not been applied fully.

Fig. 6.5. Programme of conservatory measures in 2008: filling cavities that threaten the sculpture structure.

Fig. 6.6. Programme of conservatory measures in 2008: color unification of putties.

This was part of the original, abandoned assumption that only three selected objects would be subjected to preservation. The desire to save as many stelae as possible, the lack of pigments and their restricted range forced conservators to treat putties in several cases in terms of value rather than colour. After the reconstruction of the head of the "baba 7" we abandoned unified colouring in order to purposely highlight the secondary character of the element.

10. One of the last technical measures executed on objects was impregnation of the stone with the formulation Remmers Steinfestiger 300. Its aim was to strengthen the stone structure. Due to the specificity of the formulation causing strengthening of the stone through precipitation of a silica binder inside pores, and thus reducing its absorptive properties, more porous kinds of stone were strengthened with it. Due to the restricted amount and technological requirements (Steinfestiger in good conditions binds within 3 weeks) impregnates were used interchangeably. Some sculptures were subjected to strengthening and some to hydrofobing impregnation.

Fig. 6.7. Reconstruction of the upper part of the stele "baba 7" – side view
– after the conservation.

11. The hydrofobing impregnation with the formulation Funcosil SL was executed on some statues carved from less porous kinds of stone.

Works were subjected to regular photographic documentation both during their execution and after completion.

3.1 Feminine Stelae on the Exhibition Wall

3.1.1 Baba 1 (304)

After cleaning the statue it appeared that it had been carved in fine-grained, light grey and beige sandstone. The metrical data were as follows: maximum height from the footrest was 1.73 m, preserved maximum height at the front side of the stela is 1.88 m. The maximum width of the sculpture at the shoulder height is 0.61 m, at the height of the lower part of caftan – 0.60 m. The maximum side width at the waist height is 0.35 m, at the head height – 0.28 m and at the shoulders height – 0.32 m.

After the preliminary works conducted around the sculpture and developing the photographic documentation, we commenced cleaning. After removing

Fig. 6.8. The stela "baba 1" during the conservation.

lichens and other microorganisms we removed secondary layers, revealing a clearer figure.

During the execution of technical conservation, due to the general good condition of the sculpture, there was no need to close holes caused by natural effects of atmospheric factors. On the surface of the statue there were no cavities or cracks that could be a danger for the structure in the case of water crystallisation. Small cracks and holes visible in the sandstone highlighted the nature of the stone.

We took a decision not to reconstruct hands due to a fear of excessive interpretation. The lack of possibility to date drawings and inscriptions carved on the stone led to the decision to leave them on the stela temporarily. The preserved high square pedestal, embedded into the wall structure, saved the lower part of the statue from being embedded. The sculpture was disinfected and hydrofobised.

After the conservation, preserved details became clear. "Horns" surrounding the face became clear as well as the high collar and a bar (hryvnia) on a slender neck. The shape of the right, semi-circular breast was highlighted, and the outline of the left one became clearer. Cleaning of the statue meant that the figure exhibited in the open air became lighter, despite the fact that it was characterised by slenderness given to it by the hand of the sculptor. The technical conservation revealed details previously unclear. At the left side, under the forearm there are two straps visible on which oval and triangular objects were

Fig. 6.9. The stela "baba 1" in July 2008 after the conservation.

suspended, possibly purses. On the edge of the caftan at sides it is possible to see a pattern of a border, carefully developed with a narrow edged chisel into a dense grid. Legs and feet on a footrest were perfectly preserved. The woman was depicted in high riding shoes with edges decorated with a triple piping: plain, divided with a broader and decorated with diagonal lines. Uppers were also decorated with figural cuts from both the outside and inside.

3.1.2 Baba 2 (302)

During the first stage of conservation, after removal of the thick layer of mosses and lichens and cleaning off remaining secondary layers we determined the raw material from which the statue was carved. It is light grey sandstone with a fine-grained structure. Dimensions of the stela are as follows: maximum height at the front side is 1.71 m. The maximum width at the shoulder height is 0.54 m and the waist height at 0.51 m. The maximum side width at the waist height is 0.26 m, at the breast height – 0.27 m. The sculpture had been broken into two parts at the waist.

We took a decision to remove the decomposed cement and sand mortar. Damage to the hands were supplemented at the elbow height, on lower abdomen and back, filling them with lime and sand mass with the addition

Fig. 6.10. The stela "baba 2" during the conservation.

of white cement. Next it was coloured with a pigment of a colour close to the natural colour of the rock. Also the hole at the left side of the head was closed and coloured. The colour tone should be improved at the earliest opportunity to make it more uniform with the existing stone. After removing the wall it appeared that the lower part of caftan had been preserved with a visible plain edge as well as lower limbs. Legs ended with crushed off feet. However, the footrest was not preserved. We decided that damages at the bottom of the hat, on the chin and crushed off feet do not interfere with the general aesthetics of the sculpture, thus they would not be subjected to reconstruction attempts. In addition, being a testimony of the fate of the statu, they enrich its historical value. The preservation condition of the stela, despite mechanical damages, was relatively good. The sculpture was disinfected and at the last stage of works it was also hydrofobised.

After revealing its limbs, and despite its solidity, the feminine stela gives the impression of slenderness. Unfortunately, over the last 34 years facial details and chains connecting earrings with the band were irreversibly lost. Subtly processed crescent ears decorated with massive earrings were preserved. The band pulled down to the forehead became clear, but its decorative elements were blurred. The headgear, including the hat with a brim pulled down to the forehead and upturned at the occiput gained more clarity, as did "horns" arranged from diagonal bands reflecting metal plates and a scarf trimmed with a plain, wide border.

Fig. 6.11. The stela "baba 2" in July 2008 after the conservation.

The neck of the figure was surrounded with a bar (hryvnia). The woman was dressed in a long caftan with lower edges decorated with a plain, narrow border. Under the neck the cut of the caftan is clearly visible. Through this small detail, the sculptor gave to the statue an optical lightness in addition to the massive upper part of the sculpture. Furthermore, the naturally striped stone structure in the upper part of the stela was coherent with sculptural details, strengthening the impression of slenderness of the silhouette. On the statue, there is also an outline of large, oval breasts over a large belly. Conservatory measures revealed beautifully preserved small palms decorated at the wrists with cylindrical bracelets. The figure held in its hands a pot with a wide foot, distended convex shape and massive, upturned spout. Under the left forearm the outline of an additional oval object, probably a mirror or a purse, became visible.

3.1.3 Baba 3 (290)

After removing the micro-flora and loose layers, the structure and original colour of the raw material was revealed. The statue was sculpted from coarse, light grey granite. Pletneva erroneously described the stone as sandstone, but in the light of difficult conditions and rush in which the researcher collected information, some mistakes could have happened. The data after the conservation were as follows: the maximum height at the back side down to the level, where it was dug into the ground, revealed after excavating the wall, is 1.76 m. The maximum width at the shoulder height is 0.51 m, at the hips width – 0.50 m. The maximum side width at the waist height is 0.32 m, at the head height – 0.30 m.

The statue was mounted into the wall from the waist downwards in such a way that it appeared easier to reveal its back side. The conservation measures included removal of the wall at the back side of the sculpture but, due to its dimensions, we decided not to excavate the wall at the front side, because it would have destabilised the statues. It appeared that the lower part of the back side is well preserved. It was not decorated, however was carefully developed. It could be a pedestal on which the silhouette of a woman was based or was seated. The damages to the back side of the statue were not as extensive as is marked on the drawing of 1974. Unfortunately, the issue of categorising the statue was not definitively solved. The stela can be classified as both standing and sitting. If in future some measures are taken to relocate the statues inside the building after its previous stabilisation, then it will be possible to definitely determine its typological affiliation. The stela had been broken. Someone tried to repair it by “gluing” with a sand and cement mortar at the entire width of the waist. The fracture caused the destruction of the entire left forearm together with the palm and elbow of the right hand. It was partially reconstructed in the sand and lime mortar. The damage around it was filled with a concrete during

Fig. 6.12. The stele "baba 3" during the conservation.

Fig. 6.13. The stele "baba 3" in July 2008 after the conservation.

the historic repair of the object. In places of decomposition, cavities were filled with a lime and stone mortar with some addition of white cement. After drying, these fillings were stained. The crack in the stone structure visible along the right shoulder was injected with filling. The technical condition of the stone, despite damages resulting from breaking the statue into two parts, was good. During further stages of conservation it was disinfected, and after completion of works it was hydrophobised.

Details of the headdress, facial features, decoration of ears and neck, and attire registered in 1974 and 2006 were well preserved and have not been blurred. After the conservation measures, the necklace with pendants of a rhomboid shape and a couple of cylindrical "horns" highly pinned up above the temples became clear. The hat was not reconstructed, because the cavity did not impair the aesthetics of the statues. After cleaning and additions the stela acquired the impression of slenderness, despite its massiveness and dimensions. The impression was additionally highlighted with masterly sculptured details and the natural texture of the granite surface. The stone has delicate, shallow vertical grooves over the entire surface.

3.1.4 Baba 7 (298)

After cleaning it appeared that the stela was curved of a fine-grained, light beige and grey sandstone. The maximum height recorded is 1.12 m from the pedestal at the front side and 1.33 m at the back side (without reconstruction of the head). The maximum width at the shoulders height is 0.48 m. The maximum side width at the height of vessel is 0.31 m.

The removal of the wall did not bring anything new to the information in addition to the good technical condition of the lower, front side. A reconstruction was made of the head, neck and shoulders, restoring the clear shape to the figure. In addition to its aesthetic factors, the reconstruction was favoured by technical regards. In the upper part of the sculpture, during its historical repair, a metal bolt was embedded on which previously the head had been placed. The removal of this element would involve the destruction of the raw material of the sculpture, while leaving the bolt would expose the body to tensions resulting from changes of temperature. In the long term perspective it would lead to further tensions arising during corrosive processes of the metal and changes of colour resulting from absorption of corrosion products into the stone structure. The original conservation plans did not include the conservation of metal during works. Due to the lack of availability of corrosion inhibitors, after cleaning the metal, it was preserved with an acrylic resin Paraloid B-72 and then covered with a layer of oil paint. After drying of protective layers, the gradual addition of layers of sand and lime mortar,

Fig. 6.14. The stele "baba 7" in July 2008 after the conservation.

including some addition of white cement, was commenced. For technological reasons, the reconstruction process together with regular moisturising of the mortar took several days.

Due to preserved proportions and the type of the raw material we decided to reconstruct the outline of a silhouette of the subtype II. Its colour was adjusted to the stone structure to highlight the border between the original sculpture and the areas of reconstruction.

Next, the cavities in the upper part of the body were filled. Cracks resulting from processing with sharp tools were made shallow. At the back side, at its lower part a white layer was revealed – probably blanching of secondary limes. During the 2008 season it was not possible to completely remove the harmful patina penetrating the structure and dark discolouration caused by harmful

Fig. 6.15. The lower section of the stela "baba 7" – state after the conservation.

activities of microorganisms. The discolouration penetrated the stone structure deeply. Individual cracks and scratches were injected. Single cavities and cracks, where water would accumulate, were closed. The sculpture was disinfected and subjected to strengthening impregnations.

Probably it is a feminine stela. Due to the degree of damage it is difficult to unambiguously classify it as sitting. It could belong both to the standing and half-sitting categories.

Judging by preserved details of the lower part of the body, it is difficult nowadays to determine whether it was dressed in a long caftan or galligaskins. It depicted a slender, shapely, probably young figure. A weak outline of breasts was preserved. A cup-shaped vessel with an upturned spout and trapezoid bottom, held in hands originally pinned to sides of the body, is clearly visible. The best preserved details are hands. Slender, subtle, exquisitely processed fingers of the right hand as well as the entire left palm, pressing the gentle vessel to the body, were preserved.

3.2 Masculine Stelae on the Exhibition Wall

3.2.1 Baba 4 (293)

After removing surface layers, comprising lichens, algae and loose dirt, the original colour the sculpture's stone material has been revealed.

Fig. 6.16. The stele "baba 4" during the conservation.

The statues were carved from a fine-grained, light grey and yellow sandstone. The maximum height at the front side of the statue is 1.43 m, at the back side – 1.42 m. The maximum width at the shoulder height is 0.51 m, at the waist height – 0.57 m. The maximum side width at the vessel height is 0.23 m, at the sternum height 0.25 m.

After dismantling the wall, the lower part of the sculpture with preserved limbs and long caftan was revealed.

Pole-like, short legs formed a disparity in relation to the shape of the body. Feet have not been preserved, however their shape and length in relation to the rest of the body would not have changed the impression of disparity. Despite this, the operation contributed to the optical slendering of the entire silhouette of the warrior.

Fig. 6.17. Programme of conservatory measures in 2008: removal of the wall.

It was decided to close the largest cavities at the height of the right arm at the front side of the statue. Using the lime and sand mortar with some addition of a white cement, smaller holes and cracks on the external edge of shoulders and under forearms, on the body and in the lower part of the statue were also filled. Cracks on the right side along the shoulder and body were filled. At the back side of the stela, the stone damaged in the past due to natural conditions had delaminated on the entire width of the sculpture from the waist downwards. On the right side of the stela, along the shoulder and body there were longitudinal, deep grooves and emerging new cracks visible in the stone structure. Cavities in the back side of the sculpture were not refilled, however injections were made. Then, cracks and gaps were closed with lime and sand mortar so as to protect the stone from further fast crushing until it could be relocated to the interior of the museum. Due to the unusual colour of the sandstone and limited range of pigments at the disposal of conservators, fillings were not stained. The colour unification of putties should be completed as soon as possible. Cavities on the chin and feet were not reconstructed, because these activities would not affect the general aesthetics of the stela and the damages are associated with its history.

The most important stages of works were disinfection of the sculpture and, in this case, particularly the injection of cracks and gaps complemented with the filling of grooves and delamination. These activities preserved the statue against increased destruction. After the mortar had bonded, the statue was impregnated and reinforced.

After the conservation, aesthetic details of the stela became clearer. Eyebrows and nose in the shape of letter "T", ears, rim of a helmet and above all the intricate headdress acquired clearness. As a result of conservation measures performed, a small vessel of an oval shape and cylindrical spout is more visible. Palms were not preserved, however judging by the proportions of arms and the vessel shape, they were small or were not highlighted at all.

Fig. 6.18. The stela "baba 4" in July 2008 after the conservation.

3.2.2 Baba 5 (295)

Restoration treatments made in 2008 revealed the raw material of which the statue had been made. It was fine-grained, light grey and beige sandstone. The preserved maximum height after the conservation is: at the back side of the statue – 1.78 m., at the front side of the statue from the revealed base – 1.62 m.; the maximum width at the height of flaps of the caftan – 0.50 m. The maximum preserved side width at the height of palms holding the vessel – 0.40 m.

After partial dismantling of the wall it appeared that legs were preserved. Unfortunately their technical condition was poor. At the left leg there was a high riding shoe visible. This measure allowed, however, for the exhibition of the entire silhouette. Unveiling the lower part of the sculpture restored proportions and gave slenderness to the statue.

Fig. 6.19. The stele "baba 5" during the conservation.

After cleaning, the decision was made during conservation to close large delaminations at the sculpture surface. Above all, the deep “pocket” at the right elbow, larger holes on the body, cracks and a large piece of scaling stone visible from the bottom of the vessel up to the edge of the caftan were protected from further damages. They posed a threat to the statue in cases of ice crystallisation. In linear cavities with sharp edges, such as delamination of flaps of the caftan, bands made of mortar were applied. Smaller cavities and cracks as well as gentle blurrings visible in the body structure, not contributing to the further rapid destruction of the stone, were left to underline the natural character of the raw material. It was decided to leave the back side of the head blurred, together with the headdress, due to the low visibility of the original form and fear of “over-interpretation” of the possible, even partial reconstruction. We also decided to leave smaller cracks and gaps as well as delicate blurrings

Fig. 6.20. The stele “baba 5” in July 2008 after the conservation.

visible in the structure, to highlight the natural appearance of the stone. The preservation measures were performed with a view to reverse the process of preventive reconstruction in case of undertaking a decision concerning the future fate of the statue (e.g. about the full aesthetic renovation of the statue and placing it indoors, return to the actual status during further conservation activities, etc.).

In 2008 we did not manage to remove the patina and dark stains penetrating the structure resulting from the adverse operations of microorganisms. Cracks and scratches were injected. Individual caverns and cracks, where water would have accumulated, were closed with mortar. The sculpture was disinfected and impregnated and reinforced.

During the conservation, preserved details became clear. After cleaning the face, the blurred outline of a nose on an oval, stout and flat face were unveiled. The face had picturesque features. The nose originally had the shape of an elongated, slender trapezoid connected at the base with eyebrows in the form of the letter "T". Nowadays a fragment of its lower part was preserved. Clearly visible were massive zygomatic bones. Pinnas were poorly visible, strongly blurred just like the other details of the head. The man had a hat on his head resembling a helmet or a cap. The back side of the head was crushed off and nowadays it is difficult to restore its original status. Due to atmospheric conditions the headdress was strongly eroded. The warrior was dressed in a ceremonial caftan of which a decoration in the form of a wide border at the lower edge was preserved. Unfortunately, decorative motifs of the attire captured by the draftsman in 1974 have since been irreversibly lost. The right forearm and palms were blurred. At the caftan an outline of round breastplates was preserved. The hands of the warrior were pinned to the sides, and in his hands the man held a cup-shaped vessel with a poorly preserved, upturned spout and bottom with a diameter greater than the edge. At the belt strap a weapon and utensils hung. These were: at the left side a bow in a bow-quiver and a saber inside a wide scabbard, and at the right side a purse of trapezoid shape trimmed with a wide, plain border rounded in the place where it was hung and a quiver decorated with pads at the edges. In the quiver there were three arrows with tips directed upwards. Arrows were equipped with rhomboid tips. The back side of the statue depicted neatly developed shoulders pinned to the sides and the lower part of a caftan and a pedestal on which the figure was based.

3.2.3 Baba 6 (297)

The layer of dirt and lichens was removed, unveiling the silhouette of the figure and notably improving receptionist aesthetic appearance.

Fig. 6.21. The stele "baba 6" during the conservation.

After cleaning, the texture of the raw material was revealed. The statue was made of a coarse-grained pink and beige granite or tonalite. The exact type of stone will be established by a petrologist. The maximum preserved height at the front side to the unveiled base is 1.23 m, at the back side to the base of the pedestal – 1.32 m. The maximum width measured at the height of back is 0.56 m, the measure at the waist height indicated the same value (0.56 m). The side width at the height of the yoke is 0.32 m, at the vessel height – 0.30 m.

Although the warrior was carved in a resistant rock type, it had surrendered to influences of natural and mechanical factors. In addition to the clearly marked shape of the head in relation to drawings documenting the condition of 1974, the stela was characterised by a small number of clear details.

After dismantling the wall it appeared that in the lower part of the sculpture blurred palms holding the vessel are visible. Legs were marked in a schematic form. Massive thighs registered by the illustrator in 1974 were broken. It is possible that this happened whilst adjusting the statue to the width of the wall, or that the legs were destroyed under other unknown circumstances. In the clear form only the outline of the left limb was preserved. We failed to discern the outline of feet.

Scaling stone at the height of head at the left side from the middle of the forehead to the left cheek and then on the left arm was injected, sealing cracks against the accumulation of water. It was decided that the crack would not be closed with mortar, because it does not pose a threat to the structure

Fig. 6.22. The stele "baba 6" in July 2008 after the conservation.

of the sculpture, nor does it impair the sculpture's aesthetics. It will be possible to close the crack when taking decisions about the full aesthetic conservation of the statue in the future. The right arm to the elbow was damaged, probably caused by natural erosion or when breaking the stone out of the bed. In addition, this part was covered with shallow grooves in the natural stone structure caused by the slow, yet persistent erosion on this type of raw material.

The right side of the statue at the head and shoulder height, as well as the back side of the statue up to the plaits, were covered with rusty stains. Despite the intense conservation actions aiming at neutralisation of the coloration, we did not manage to remove these stains. They were probably caused by the long-term activity of algae that deeply and permanently penetrated the granite structure. The last stages of work were disinfection and impregnation strengthening the sculpture.

Cleaning of the statue and dismantling the wall caused large changes in the appearance of the statue. It acquired a slenderness despite its preserved massive upper part and destruction of the lower part. As the result of conservation actions, facial details became clear: the subtle outline of eyebrows and nose in the shape of the letter "T" and almond-shaped eyes. Symmetrically located ears and a long plait consisting of three pleats falling on the back were clearly visible. Also the outline of the body and massive shoulders became clear. The figure was dressed in a short caftan on which traces of decorations were preserved. In strongly shaped hands it held a rectangular, cup-shaped vessel. Conservation works unveiled the outline of schematically carved fingers.

3.2.4 Baba 8 (299)

The figure was cleaned of the thick layer of mosses and lichens. The raw material, of which the statue had been made, was fine-grained, light grey sandstone. The maximum preserved height of the stela, measured at the front side after dismantling the wall, is 1.47 m, the maximum width at the scapula height is 0.50 m. The preserved side width of the head is 0.30 m, the maximum side width at the waist height is 0.26 m.

The surface of the stone was covered with a grey patina which, due to the lack of sufficient measures, could not be removed. After cleaning it appeared that on the stela there are clearly visible details, invisible until the conservation. The removal of the exhibition wall provided new information. In the lower part of the statue, the outline of a plain belt was unveiled. The stela, judging by proportions of its lower part, belonged to the category of sculptures with a height of about 2 m.

Small, narrow splits covering the surface and a few holes of natural origins visible on both right and left side of the head and along the right shoulder were very shallow. They have been left, because they did not impair the aesthetics of the sculpture and did not expose it to threats. Cavities visible on the back of the stela on the right shoulder have been left, because they did not endanger the stability of the stone structure. Due to the soft nature of the sandstone, larger grooves and splits have been closed with lime and sand mortar with some addition of white cement. Cavities filled in that way include: oval cracks in the stone structure on the left side at the breast height, a large cavity of a layer reaching the waist of the sculpture, and a deep split from the top of the helmet down to the arm on the left side of the stela.

Two similar longitudinal cavities located at the waist height on the same side of body were also closed. During conservation treatments the most difficult process was the removal of deep incisions from the face of the warrior, made by contemporary vandals with some sharp tool. They were levelled with a thin layer of mortar. In order to increase efficiency, the mortar was prepared based on the starting preparation Aida Haftfest. The mortar was then stained with a pigment adjusted in terms of colour. A narrow and shallow crack on the right side of the statue, visible at the height of the arm crushed down to the waist, has been injected, as well as other such cavities. The last stages of works included disinfection and strengthening impregnation.

Fig. 6.23. The head of the stela "baba 8"
before the conservation.

Fig. 6.24. The head of the stela "baba 8"
after the conservation.

Revealing the lower part of the stela increased the silhouette's slender appearance. The sculpture depicted a man with facial details characterised by picturesque features. The face was oval, slightly prominent at the height of the cheeks and with full chin. Arched eyebrows were preserved grown together over a long, straight nose in the form of the letter "T". Below there are poorly visible lips which, together with a whisker, have a spindle form. On the sides of the head there are crescent ears preserved. On his head the warrior had a ringed decorated helmet with a rim decorated with diagonal lines, below which details of an intricate headdress can be seen. The hair was interwoven into three plaits, loosely falling on the back. The longest and thickest plait was pinned under the helmet in the form of a net. On the front side a belt and an outline of the

Fig. 6.25. The stela "baba 8" in July 2008 after the conservation.

breastplates were preserved on the left side of the body. The statue has neither hands nor a vessel. The front and sides of the stela bear traces of an intense polishing. It is possible that details of the attire, vessel and limbs existed, however were removed at a secondary stage in the past. It is also possible that the stela was used as a grinding or sharpening tool.

3.2.5 Baba 9 (292)

The entire surface of the stela was cleaned from a layer of lichens and algae efflorescence. This revealed the nature of the raw material. The statue was carved from fine-grained, light beige and yellow sandstone. Parameters after dismantling the wall are as follows: the maximum preserved height from the unveiled base on the front side of the statue is 1.92 m, the maximum height of the sculpture on the back side is 1.83 m, and the maximum width at the shoulder height is 0.58 m, at the hips height – 0.55 m. The maximum side width of the stela measured at the waist height is 0.38, at the head side – 0.30 m.

After dismantling the exhibition wall and removing the cement mortar strengthening the base, the lower part of the caftan was unveiled as well as the well preserved, cylindrical massive lower limbs, unfortunately without feet. On cylindrical legs there are clearly visible uppers of riding shoes. Limbs were covered with white lime, probably secondary layers. On the back side, after cleaning the background, in its lower part an outline of small legs became visible. The continuation of the drawing above was destroyed.

We failed to remove the entire sealing patina and visible traces of adverse activity of microorganisms. Cleaning the sandstone revealed its specific type. Within the grey structure, there were visible strands and lenses with an intense yellow colour highlighting its texture, especially in the upper part of the statue. Many years of exposure to the effects of atmospheric conditions resulted in elution of the stone and, as a consequence, the front side of the statue as well as its sides are covered with vertical strands of parallel, shallow grooves and small lens-like holes. However, due to the fact that they did not pose a threat to the sculpture's technical condition, we allowed them to remain as the original structure of the historic material. On the back, upper side of the sculpture the surface had gained "roughness" due to the activities of water and wind. In the lower part, on the pedestal there were near-horizontal strands of grooves. Filling these shallow, natural cavities with mortar was pointless, because they highlighted the natural properties of the soft stone, and did not contribute to the destruction of its structure. Only delaminated fragments were strengthened and larger holes were plastered. Additions to the form arising from technical considerations included: filling in the delaminated caftan

and closing of two grooves on the right side of the sculpture. The systemic mortar of the Remmers Company was used to repair cavities. It was decided not to reconstruct hands in this case, because it would have required "over-interpretation" of the relic. The last stages of works were disinfection of the figure and strengthening impregnation.

After the preliminary phase of conservation, the stela regained its original light colour which, alongside its large dimensions, increased the impression of monumentality, particularly when exposed to the open air. The original sculptor achieved an interesting optical effect, modelling en face a slender, tall man, and the impression was strengthened by an openwork originally incorporated between the hands and the body. However, looking from its side,

Fig. 6.26. The stela "baba 9" in July 2008 after the conservation.

the statue makes quite a weighty impression, because the proportions of the body are changed. The sculpture becomes massive and compact. Despite the great dilution of details of the upper part of the object, the following details are clearly visible: the oval shape of face with distinctive profile, helmet with a cone bell and round metal breastplates. The figure was based on a square pedestal. As a consequence of conservation treatments, long fingers holding a cup-shaped vessel with a broad spout became clear. A fragment of the strap attached to the belt was poorly visible, as well as the outline of a knife. They are located on the right side of the stela under the forearm pinned to the body. After conservation on the back of the stela, the oval plate and two straps are visible, being some kind of fasteners of the breastplates and a fragment of a single plait.

3.2.6 Baba 10 (286)

The raw material of which the stela was made was fine-grained, light grey sandstone with beige stripes. After dismantling the wall the maximum height of the stela from the base measured on the back side is 2.10 m, the maximum height from the preserved footrest on the front side is 1.92 m. The maximum preserved width at the scapula height is 0.58 m, at the hips height – 0.54 m. The maximum side width measured at the waist height is 0.28 m, on the head, and the cheeks height – 0.30 m.

Unveiling the wall exposed high riding shoes on shapely, long legs based on the well-preserved footrest. On the right leg the outlines of shinguards were preserved. During the conservation treatments, we failed to remove white stains on the feet. These are probably secondary layers of the lime whitening. Due to concerns about the possibility of destruction of well-preserved legs and the lack of conditions to perform an analysis of composition of stains on site, we cleaned the stone with available measures. After cleaning, it was decided to remove the weakened and delaminated sand and lime mortar from the edge that was visible in the middle of the sculpture. It was replaced with the new systemic mortar of the Remmers Company and coloured with a pigment similar to the natural colour of the stone. Small pores and grooves caused by erosion have been left, because they did not endanger the stability of the statue. Elements that had been damaged were not reconstructed, due to aims of the conservation programme including performance of preventative works. Larger cavities – of the left forearm and knee and four deeper grooves over the breastplates – have not been reconstructed. The decision to close them could be taken once the statue is relocated to the building and undergoing a full artistic conservation. The sandstone structure is dense enough that cavities do not contribute to the deterioration of the technical condition of the relic. The last stages of works

were injections of cracks and grooves as well as the disinfection of sculpture. Finally, the statue was subjected to the strengthening impregnation.

The most visible change after the conservation is the unified, brighter colour of the material from which the sculpture was made. Unveiling the feet together with the footrest means that the statue gives the impression of being optically larger than it was. Conservation treatments not only gave the appearance of slenderness to the statue, but also made many details clearer. The sculpture belongs to exemplars of more than 2 m of height, and depicts a slender man with massive shoulders and thighs, sitting on a rectangular pedestal. The impression was enhanced by the natural stone structure. The sandstone was covered with vertically running stripes of a brighter and warmer colour. The sculptor probably knew that processing such type of rock would trigger the effect of slenderness despite large dimensions of the statue.

The figure was dressed in a caftan or a shirt and trousers put into shoes. Erosion has affected the upper, front side of the stela the most. The round face, with a distinctive profile and sharp chin shrouded with a cone-shaped helmet, was preserved. Cleaning of the face made the shape of the ears clearer.

Fig. 6.27. The lower part of the stela "baba 10" – side view – after the conservation.

Also it was possible to see oval, symmetrical hollows – eyes and a faint outline of the shape of a nose. On the back side of the stela there was a clearly visible rim of a helmet and well-preserved headdress. The warrior had his hair interwoven into three plaits falling on his back. The hair was fastened with a net with rhomboid mesh just under the helmet, thus plaits closely adhered to each other. Round breastplates, despite deep erosion of the stone, preserved their shape and from the back side were supported by cross-fastened straps additionally strengthened with an oval plate-buckle. Straps had significantly thickened edges. The belt, vessel and hands were destroyed, because in the past the stela was broken into two parts. Only a spout of the vessel together with the right hand from the forearm down to the wrist was preserved.

Fig. 6.28. The stela "baba 10" in July 2008 after the conservation.

3.3 Feminine Stelae in Front of the Museum

3.3.1 Baba 11 (296)

The first treatment performed on the stela dug into the ground was the removal of the greenery from the flower bed arranged in front of the museum in contact with the stela. After initial conservatory treatments performed on loose layers and microorganisms were fully removed, the colour and structure of the stone have been fully unveiled. The statue was carved from white and grey shellstone with a highly porous, almost spongy structure. The metric data has the following parameters: the maximum height of the stela from the level where it was dug into ground is 1.51 m. The maximum width measured at the shoulder and backrest height is 0.66 m. The maximum side width at the waist height is 0.28 m and at the head height – 0.32 m.

The only pits of patina were left in cavities inside hollows covering the sculpture. The figure was disinfected. During conservation works it was decided not to remove the scarring, historic sand and cement mortar. A bonding of the stela broken in the past at the waist height was left. The mortar fulfilled its function and the sculpture can exist in its current preserved state for several years. Future conservation will require an analysis of the bonding line. The optical analysis suggests a shift of the axis of symmetry. The upper part seems to be relocated to the right side of the sculpture in relation to the lower part. Cavities of the face, head and lower limbs do not impair the aesthetics of the statue and constitute a testimony of its fate. The reconstruction of cavities on hands and closing some holes will be possible during a full, artistic conservation of the statue, which requires time, precision, technical measures, storage capacity and, above all, financial resources. In 2008 this was impossible primarily due to the lack of ability to move the stela permanently to the inside of the building and stabilising the pedestal by recasting the missing base. The largest cavities of the heavily corroded surface were closed with the lime and sand mortar to prevent water from accumulating in them. Cracks and narrow grooves were injected with the preparation Winacet DP 50/00. The last stage of work was the strengthening impregnation.

After conservation the aesthetics of the statue significantly improved as well as the ability to analyse the carvings. Intentionally depicted disproportions of the body, with the upper part more massive than the lower one, the eroded hat with visible outline of a scarf and horns, as well as the back part of the high brim of the hat became clearer. The statue was characterised by a highly artistic execution, which is characteristic for anthropomorphic sculptures made from shellstone. It is not an easy kind of sandstone to process due to its strong natural porosity and numerous organic inclusions. This stone has

a specific charm and gives to details carved in it the impression of being three-dimensional and deep. These values characterise also the sculpture from Veliko-Anadol. The sculpture acquired clarity and the impression of three-dimensionality of the details: necklace, attire, vessel and palms with clear, slender fingers. In the profile there are not only ears, scarf and the outline of the hat visible, but also "horns" slendering the round face. On the back, there is a high brim of a hat preserved and a triangle scarf. Thanks to the preserved backrest and high pedestal, outlines of pole-shaped limbs, short in relation to the rest of the figure, were unveiled. Unfortunately, the feet were destroyed.

Fig. 6.29. The stele "baba 11" in July 2008 after the conservation.

3.3.2 Baba 14 (279)

After cleaning the statue it appeared that it was carved in fine-grained, light beige sandstone. The stela was dug into the ground. Its height measured from the level at which it was dug is 1.21 m. The maximum width measured at the shoulder height – 0.49 m. The maximum side width at the height of the lower edge of the caftan is 0.22 m and at the side of head – 0.24 m.

The statue was cleaned of surface dirt. We managed to completely remove mosses, lichens and surface dirt, unfortunately pits of patina scarring the surface remained. The degree of penetration of the dark patina deep into the stone surface was so great that despite careful and repeated cleaning we were unable to remove stains from the upper part of the body and the head of the statue.

The stela was broken in the past into two parts. Also its upper part was damaged. With the sand and cement mortar were repaired damage to the head and hat. In 2008 due to the limited time, lack of materials and technical capacities, we left in place repairs that were non-aesthetic but fulfilled their functions, limiting only to a small extent their scope. Although the bonding cement mortar was left, its scope was slightly reduced, as far as was possible, with non-invasive methods. The left hand that was damaged was left without repairs. We managed to clean surface dirt from the long caftan decorated with vertical pleats. The vertical pedestal on which the figure was based was preserved, as well as pole-shaped legs, unfortunately without feet. The back side of the stela was badly damaged and its surface eroded. The sculpture was disinfected. For the sake of microbiological protection, the surrounding greenery was limited.

After the conservation not only the bright colour of the sandstone was unveiled, but also the details became more clear, such as the outline of arched eyebrows grown together over the straight nose, two plain bars (hryvnia) on the neck, outline of triangular breasts and slender fingers of the right palm. The stela requires professionally performed artistic conservation in conditions allowing not only for the precise work of a specialist, but above all providing microclimatic stability for the sculpture. The details preserved indicate the high artistic achievement of the object.

Fig. 6.30. The stela "baba 14" in July 2008 after the conservation.

3.4 Masculine Stelae in Front of the Museum

3.4.1 Baba 12 (301)

During the first stage of conservation, after cleaning the surface the type of stone from which the stela had been made was determined. It was coarse-grained sandstone with a striped structure and light beige colour. The statue was dug into the ground. The metrical data were measured to the level of immersion. The maximum height of the preserved statue from the ground level is 0.96 m. The maximum width measured at the shoulder height is 0.57 m, the maximum side width at the waist height is 0.24 m and to the head – 0.29 m.

We managed to remove completely the mosses, lichens and surface dirt from the stela. After cleaning the statue it appeared that scarring pits of patina remained. The stone structure was covered with shallow holes and cavities that resulted from elusion and erosion as well as with cavities arising from mechanical damage. They were left to remain without filling. In the past the sculpture had been broken at the waistline. The upper part of the body, without palms and vessel, was preserved. The historical repair including bonding it with the lower, non-existent part with the sand and lime mortar was left. It constituted some form of insulation from the ground. Its scope was limited in a manner non-invasive for the statue. Few shallow holes of natural origins as well as grooves did not pose a threat of further destruction to the surface.

Fig. 6.31. The stela "baba 12" in July 2008 after the conservation.

The delamination that was visible at the back of the head was also natural, shallow and was not destructive. It was strengthened with a binder. The chin that had been crushed off was not reconstructed. At the front of the head, on the edge of the helmet there were two parallel, horizontal and deep incisions remaining as well as a horizontal groove of the same origin at the lips height. On the left side of the head, at the rim height a shallow and narrow groove running along the face oval through the neck and to the shoulder and back was injected. Despite injuries, the technical condition of the stela is good. The sculpture remained in front of the museum. For the microbiological protection the neighbourhood of greenery was limited. The figure was disinfected and hydrofobised.

After cleaning, the stela acquired optical lightness and slenderness. The unveiled natural structure of the sandstone covered with vertically arranged, delicate shallow beige grooves, visible primarily on the body, increased the impression of the slenderness of the statue, despite its size. Preserved details became clearer: the straight nose visible en face and in profile, ears, and three plaits pinned with a net just under the helmet. The sculpture was made very carefully. It was well-preserved due to the dense structure of the stone. In future the stela, due to its condition and artistic value, should be completely stabilized and exhibited indoors.

3.4.2 Baba 13 (300)

After removing the layer of dirt it appeared that the stela was carved in fine-grained, dark beige and grey sandstone. The figure was dug into the ground. Its height measured from the base at ground level is 1.10 m. The maximum width measured at the waist height is 0.52 m. The maximum side width measured at the abdomen height is 0.34 m.

From the entire sculpture characterised originally by large dimensions, only the decapitated torso was preserved and the fragment of the right shoulder and legs below the vessel level. A thick layer of dirt and lichens was removed from the surface of the stela. However, a layer of dark patina deeply penetrated the stone structure. Despite intense cleaning we did not manage to remove completely stains on the front side of the object, particularly in the upper part of the preserved torso. On the stela there were visible small holes and cavities which were left to remain. Grooves penetrating the structure of the statue were injected. For the microbiological protection the neighbourhood of the greenery was limited. The object was disinfected.

Despite cavities on the head, in the entire lower part and damages to the right hand, the statue after conservation treatments made an impression with its enormous size. The best preserved detail was the large, cup-shaped vessel

Fig. 6.32. The stele "baba 13" in July 2008 after the conservation.

pinned to the waist. Conservation treatments strengthened and secured the preserved part of the statue from atmospheric conditions. In the future the sculpture should be placed on a pedestal so as to protect it from humidity and chemical factors from the ground.

4. Summary of Conservatory Treatments

The authors were prepared to work on three objects made of lime and sandstone rocks. In fact, after several hours of debate initiated by the great impression the stelae made on young members of the archaeological and conservatory

expedition, the admiration for the art of nomads and regret, when we realised their condition, it was decided to extend the scope of preservative and conservatory measures performed *in situ*. The technical conservation included 14 out of 24 exemplars of statues. Therefore we required more materials. We did not foresee the need for binders and ores for crystalline rocks. The amount of possessed pigments did not allow for the adequate colouration of the mortar mass used for filling on all preserved objects.

The conservation was carried out with a view to enabling the reconstruction to be reversed in case of future decisions about the fate of the figures, e.g.: about placing statues indoors or returning them to their fully original state during further conservatory measures. Fillings have different colours from the original stone, and the mortar itself is weaker than the stone structure.

The most difficult part of the reconstruction to organise was removal of layers of the harmful patina. Most of the preparations used for that purpose were based on weak acids or were removed mechanically, e.g. with a compressor, appropriate abrasives and nozzles. The amount of equipment and the characteristics of substances required for professional removal of the patina preceded with trails were not included in originally planned logistic

Fig. 6.33. Our expedition in July 2008 in front of the building of the Veliko-Anadol Forest Museum.

assumptions and capacities of the project. In 2008 the expedition was equipped with limited amounts of materials and equipment. This was caused not only by the difficulties of importing chemical substances to Ukraine, but also by the capacity of transportation. Furthermore, it was highly limited by financial funds that were small in relation to the challenge. Despite difficulties the issue of conservation became a matter of priority.

The major conservation issues included removal of the effects of unprofessional repairs, such as bonding cement mortars on weaker kinds of stone. Their removal without professional tools and material background would have contributed to the destruction of the surface of stelae, therefore such measures were limited to the safe minimum. In the original discussion of conservation options we considered also developing the vertical and horizontal insulation using one of the constructing methods and drainage in order to separate the objects from one of the most severe destructive factors: water, and the salts dissolved in it, sucked from the soil into the stones' capillaries. These plans needed to be adapted due to logistic reasons, lack of required materials, tools, equipment available on site and limited time of the project.

Fig. 6.34 The Polovtsians statues after the conservation – state in Autumn 2009.

The exhibition wall was rearranged to a minimum extent, because in addition to the stabilizing function it is also an element protecting from thefts and acts of vandalism. It also played the role of a meeting place and it is used as an element of staffage and a seat during local wedding photography sessions.

We managed to perform much greater work than the initial plans, however it would have been possible to do more, if not for the abovementioned difficulties caused by the conditions in Ukraine. The necessity for quick adaptation to prevailing conditions forced the expedition to adapt the planned works, adjusting the conservation measures to existing conditions and flexibility in overcoming the obstacles as they occurred. Despite all the difficulties we managed to preserve most of the exhibits from the collection of the Veliko-Anadol Forest Museum. The Polish-Czech archaeological and conservation mission in 2008 was the first, and so far the only, expedition engaged in the maintenance of monumental sculptures in Eastern Europe. The authors hope that their project will be developed based on international cooperation between interested research institutions both from Western Europe and countries possessing collections of monumental sculptures, and that in upcoming years the number of preserved exemplars of stelae will increase.