

Investigating gilding techniques on Gandharan stone sculptures and architectural components: a preliminary note

Marco Zaminga,
Ivana Angelini,
Massimo Vidale

*Department of Cultural Heritage:
Archaeology, History of Art, of Music
and Cinema, University of Padova,
Italy*

Luca Maria Olivieri

*ISMEO, Associazione Internazionale
di Studi sul Mediterraneo e l'Oriente,
Director Italian Archaeological
Mission in Pakistan*

Giuseppe Guida

*MiBAC, Istituto Superiore per la
Conservazione e il Restauro*

Abstract

A series of samples taken from gilded Gandharan sculpted objects in schist (both portable artifacts and architectural decorative components), coming from different sacred sites of ancient Gandhara and the Swat valley, are in the course of analytical inspection. They are studied by the means of different archaeometric techniques. Although, given the precarious conservation and rarity of the objects available for analysis, our preliminary results cannot be generalized, the emerging evidence is discussed in the light of the gilding technologies so far described in other cultural areas and periods. It is also argued that, in the Gandharan cultural complexes, the surface of sacred images might be covered with diverging procedures, dictated by various technical and/or religious concerns.

Introduction: Gandharan art towards materiality

The technology of gilding in ancient Swat had intrigued for years our mission Director and old friend Domenico Faccenna, who in many occasions asked two of the authors, LMO and MV, to start investigating the matter. What follows is based on an original MA thesis of Marco Zaminga (2015/2016) at the University of Padova, tutored by the other authors, and is respectfully dedicated to the memory of Domenico and his unforgettable role in the extraordinary scientific adventure of the Italian Archaeological Mission in the Swat valley. We thus contribute to a long-established but discontinuous wave of technical studies on the base materials and technologies of Gandharan sculptural production, that was recently resurrected and intensified. On the background of the crucial repertory of architectural terms, ancient imagery, and technical components of the immense sacred Gandharan production reviewed in Faccenna and Filigenzi, 2007, important were the early petrographic studies on schist sculptures kept at the Musée Guimet, Paris (Curtois, 1962, pp. 107-113; Cambon and Leclaire, 1999, pp. 135-147) as well as those carried out on the sculptures on exhibit in 1992 at the Fitzwilliam Museum, Cambridge (Reedy 1992, pp. 264-277). Lithological analyses and study of the stone quarries of Swat are

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Fig. 4
View of Barikot from NW.
Photo by Luca M. Olivieri



due to the fieldwork by Di Florio et al., 1993, pp. 357-372; Olivieri, 2006, pp. 137-156; see also Pannuzi, 2015 with updated bibliography, further specialist studies including the recording of tools traces and preliminary information on gilding. The interest on Gandharan polychromy and chrysochromy goes back to original observations by Foucher, 1905, pp. 1918-1922, 1951, and was kept alive by the keen observations by Domenico Faccenna (1980-1981, *passim*) on the remnants of colours and gilding traces on the stone sculptures and architectural parts of the sacred complex of Butkara I in Swat. S. Pannuzi, 2015, gathers a series of palaeotechnological data on residues of pigments, ground preparations and gilded surfaces collected from sculptures of Butkara I and Panr, at the former MNAO "Giuseppe Tucci" (now Museo delle Civiltà) of Rome and from other Gandharan artworks at the Musée Guimet at Paris, Civic Archaeological Museum of Milan and Museum of Oriental Art of Turin.

Gilded statuary: a state of art

While gilding on metals has been the subject of important studies (e.g. Oddy, 1981, 1983, 2000; Oddy *et al.*, 1988; Giumlia-Mair *et al.*, 2002; Brambilla 2012), gilding on stone, also because of the prolonged exposure to open-air weathering or prevalently moist burial conditions of many artworks and monuments, still remains poorly explored.

In Kushan times, gilding was outstandingly important in Gandharan architecture and sculpture. Gold, in Mahayanic views, may simply (and absolutely) represent light; and light has obvious cognitive and symbolic links with the *bodhi*, the experience of enlightenment by Buddha and other perfected beings, thus signalling the way to the general spiritual evolution of mankind. The Chinese pilgrim Song Yun, in the 6th century CE, saw at the temple of To-lo, perhaps the religious complex of Butkara I, many buildings decorated by not less than 6000 golden images, and other constructions where the shining surfaces of stone statues dazzled the eyes of the faithful onlookers (Beal [1906] 1981, p. CII).

From the mountain tops, the look of the manifold domes that crowded the Swat and its lateral valleys, suddenly shining with gold when sunrays rose from the crest of the local mountains, must have been bewildering. We still know very little about the technical know-how and skills required by gilding. This technology must have been shared by large group of specialized craftpersons involved for a long time (1st-3rd centuries CE, and probably longer) in the construction and maintenance of the numberless Buddhist sacred areas of the region. Also, it is not clear how far Gandharan gilding technology was indebted to the previous experience and specialized skill of the craftsmen of the Achaemenian courts: at Persepolis, for example, gold foils were commonly applied onto architectural components and bodily part of the human figures, like hair, beards and personal ornaments (Nagel, 2013).

In a holistic view, stone gilding in ancient Gandhara turned into a part of a more general and globalized interest of late Hellenistic visual imagery for

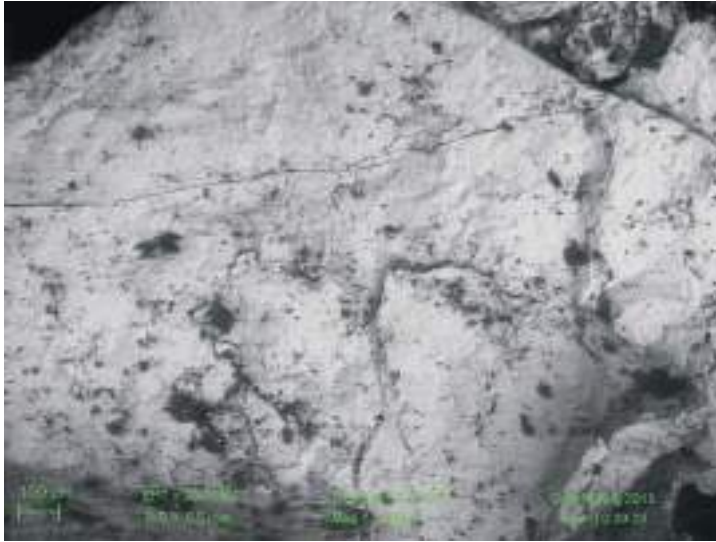


Fig. 1. ESEM view of Sample BKG-107, a cluster of gold sheet microfragments probably detached from the surface of an object made of a decayed organic material (G. Guida, ISCR, Roma). Note the double layer of gold foil (200 X).

sensational effects, through a intensified use of polychromy and light. Buddhist iconographic programs may have shared this interest, transforming it in specific religious and devotional programmes. Buddhist sculptures and architectural components, in fact, may have had parts that were individually gilded, sometimes enhanced aside other applied and contrasting colours. In other cases, entire images, including their backgrounds, base-ments and frames, were entirely covered with gold foils without gaps; this type of treatment may also be due to common devotional practices. The faithful, by repeatedly applying gold foils to her/his divinity, might have thus obtained favour and particular merits.

The Chinese pilgrim Xuan Zang, for example, saw at Pi-mo, in the kingdom of Kothan, a statue of the Buddha, made by Udayana, a celebrated Indian king. Here people suffering in some body parts sought for supernatural healing by applying gold leaf on the anatomical part of the statue that corresponded to their affected body part (Beal 1906 : 322-323). Similar rituals are still currently performed at Sarnath (Uttar Pradesh, India) (unpublished photographs given by Costanza Pera to the authors). In this and similar cases, gold leaf seem to be applied directly on the weathered stone surface of the ancient monuments, without ground layers or visible adhesive preparation (however, the absence of a adhesive would be not easily understandable; at least a physical anchorage must be assumed - G. Sidoti, personal communication). This suggests that with the development of archaeometric studies, the presence or absence of bole-like ochre as adhesive preparation under the gold leaf might reveal different technical planning, practices of maintenance of the surface of the sculptures, and/or devotional practices in various parts and components of the Buddhist sacred complexes.

Stone gilding in Mediterranean contexts

Without claiming to offer an exhaustive review of the overall available taskscape, the following Table 1 compares the basic technological approaches in five different Hellenistic contexts of ancient Mediterranean regions. From left to right, Table 1 reports the reconstructed micro-stratigraphy on as many material case-studies, from the stone surface (left) to the outer surface of the applied gold foil to the right).

This limited review suggests that, in a rather variable technical inventory, two features are more regularly present: a light-coloured background, laid directly over the stone surface, which was often abraded for granting a better grip; and organic adhesives for fixing the gold leaf (possibly, animal glues, egg yolk, gums soluble in water and resins in solvent. Resins like colophony, also mixed with siccative oils, could also have been used as adhesive, honey, or starch) which, however, as a rule, were not better identified. Different materials were used for the light-coloured backgrounds: at Delos and Antiochia sculptors used lead-based compounds (like lead white, massicot or litharge) while at Aphrodisia were apparently preferred calcium carbonate-based mixtures. Thin red or yellowish-red layers of bole-like ochre were applied above such preparations (in a few cases, this red “pigment” was also used to mark or partition on the ground the parts of the statues that had to be gilded). In general, the presence of coherent reddish-yellowish layers below the gold foils had the function of strengthening the reflectance of the light and enhancing the yellow-glowing effect of the coated surfaces.

Some technical issues in Gandharan stone gilding

Current research by S. Pannuzi and the authors is investigating a series of samples of gilded stone objects, sculpted images and architectural components recovered at the early historic site of Barikot and recently excavated sacred areas of the Swat valley (Olivieri, this issue.) and in Italian and French museum collections (Pannuzi, 2015; Pannuzi, Talarico, in stampa; passim, this issue). Other samples were obtained from collections of artifacts found at the previously excavated sacred complex of Saidu Sharif I (Callieri, 1989). To obtain relevant samples of good quality is not easy, due to the bad conservation of the surfaces and the need of sacrificing part of the objects to observe them in cross-section. Because technical studies are still in progress, the following information is still partial and preliminary. Archaeometric studies collected in Pannuzi, 2015, indicate that Gandharan sculptures, like hellenistic ones in the mediterranean region, may have been covered by light-coloured backgrounds. Some schist sculptures of the Rome collections still bear on surface residues of a very subtle whitish-yellowish background, mainly including calcium carbonate and quartz, clays being secondary components, and traces of magnesium and iron. Applied on a ground layer of such description, a least a sample shows a thin layer that, containing silicon, iron and aluminum, may be considered a red ochre (Pannuzi, 2015, p. 56). The hypothesis is that similar layers

Delos, 1st century BC	Stone surface (probably abraded)	White ground: cerussite, $PbCO_3$ + calcium-based compounds	Bole clay, yellowish	Organic adhesive (?)	Gold foil	-
Delos, 1st century BC (variant)	Stone surface (probably abraded)	White background: cerussite, $PbCO_3$ + calcium-based compounds (?)	-	Organic adhesive (?)	Gold foil	-
Delos, 1st century BC	Stone surface (probably abraded)	-	-	?	Gold foil	-
Antiochia, 2nd century AD	Stone surface	White-yellowish background: lead oxide, PbO + bioapatite (ground bones) + organic binder	Bole clay (?)	Organic adhesive (?)	Gold foil	-
Aphrodisia, 2nd century AD	Stone surface (abraded)	White background: Carbonate ($CaCO_3$)	Bole clay	Organic adhesive (?)	Gold foil	-
Musei Vaticani, sarcophagus, ca. 300 AD	Stone surface	White background: caolin + organic binder	-	-	Gold foil	Vegetal resin (a vernice?)

(lime-based, sometimes covered with films of ochre) might have been originally applied as ground for pigmented layers, sometimes for gilding, but also for regularizing or restoring the sculpted surfaces. This technical feature - whatever its contextual meanings - seems also reflected in a wider sculptures tradition of the Subcontinent. In fact, samples taken from sculptures at Mathura, Sarnath and Varanasi show a lime-based surface ground apparently obtained by grinding sea shells, or from egg shells (Giuliano 2015, pp. 20-21, with extensive references to ancient treatises on painting; see also the entry “Eggshell” in Eastaugh et al. 2008, p. 153). The possible presence of organic binders in these calcareous-clays layers was tested by gas chromatography (GC-MS); while various samples showed a undefined proteic component, only one sample revealed the presence of egg (Talari-co et al., 2015, p. 58).

While the described light-coloured covering may, or may not, have been applied as grounds for coating the stone surfaces with gold leaf, their nature and relationships with additional layers of ochre, may be relevant for better understanding the specific techniques used in ancient Swat for stone gilding.

So far, two samples of gilded objects from Saidu Sharif I, and two from Barikot, were observed at the optical microscope, then studied at the ESEM, with EDS system (ZEISS IVO 60, EDS Oxford Instruments, software INCA 4.15) of the Laboratory of Chemistry and Non Destructive Testing of the Istituto Superiore per la Conservazione e il Restauro, Rome. One of the samples (BKG 107, from Barikot) was formed by a cluster of micro-fragments of gold foil, possibly detached, in this particular case, from the surface of a wooden object that did not survive deterioration (Figs. 1 and 2). Figs. 1 and 2 show that the gold foil was applied in form of superimposed sheets, and that the foil was probably applied with a repeated pressure, leaving series of parallel streaks on part of the gold surface.

Table 1

Comparing five “recipes” for stone gilding in the Hellenistic mediterranean region, ca. 1st century BC-3rd century AD. Sources are, for Delos, Burgeois and Jockey 2002; 2004-2005, pp. 343-345, 348-349, 497-505; Burgeois and Jockey 2009; 2010, p. 230; Burgeois et al. 2011, p. 648; Ostergaard 2010, p. 94; see also for the bole Paolucci 2014, p. 56. For Antiochia, Artal-Isbrand et al. 2002. For Aphrodisia, Abbe, 2010, pp. 278-282.

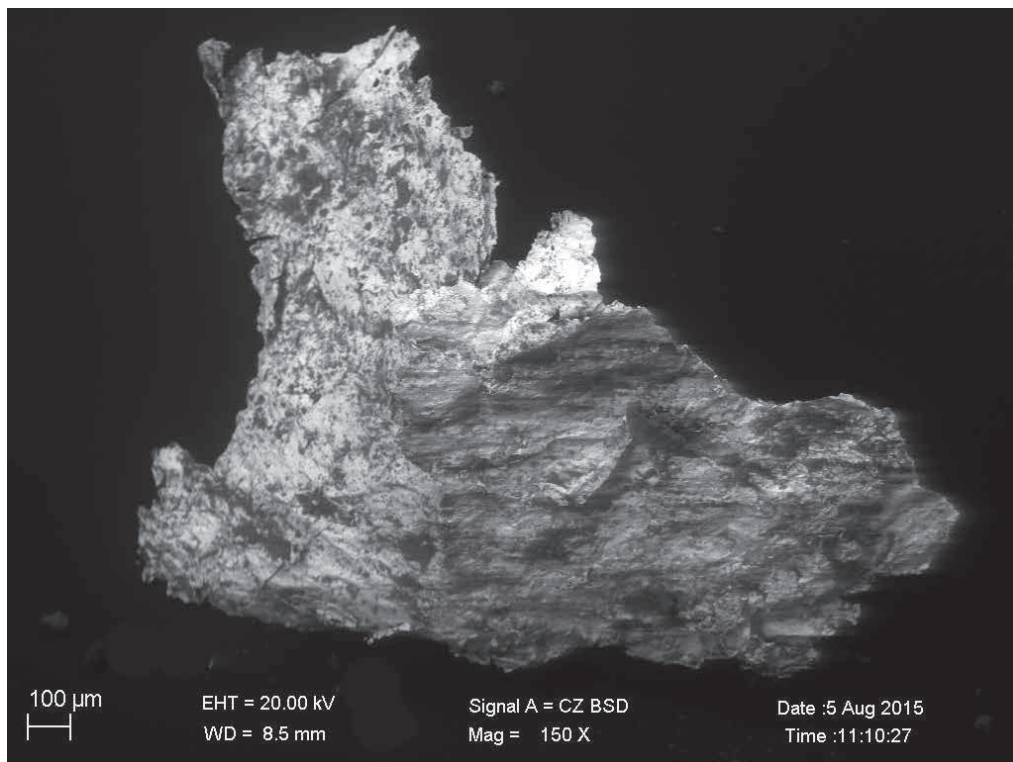
Fig. 2
ESEM view of Sample BKG-107, a cluster of gold leaf micro-fragments probably detached from the surface of an organic object (G. Guida, ISCR, Roma). The left side of the sheet fragment shows parallel striations due to the application of pressing/burnishing movements (150 X).

One of the other samples, from Saidu Sharif I, was then sectioned at the Department of Geoscience of the University of Padova. Here the sections were embedded in transoptic resin, polished with diamond pastes, and observed again with optical microscopes at reflected light, both in parallel and crossed nichols, with a range of magnification from 50 to 1000 X.

Also, Raman analysis (with a DXR Thermo Scientific Raman, with a laser operating at 532 nm) are currently performed on the sections thus prepared. The aim, in every case, is to investigate the micro-stratigraphy of the samples - from the stone surface to the background layers, to end with the chemical composition of the gold foils. Finally, fractions of a sample from Saidu Sharif I were also analyzed by the means of GC-MS at the Laboratory of Analytical Chemistry for the Conservation of Cultural Heritage of Pisa University (I. Bonaduce, A. Lluveras-Tenorio).

So far, the stratigraphy of the sections, joined with chemical testing, failed in revealing any "white" calcareous ground below the gold foil layer or layers. There is no evidence of any organic material, let alone of a continuous layer of an organic glue; a circumstance also confirmed by the GC-MS tests so far performed on our samples. However, at present it cannot be excluded that an organic binder originally mixed in low amounts to the hematitic pigment had completely decayed, becoming not detectable.

Our best specimen, the cross-section of SS1 (from Saidu Sharif I, perhaps part of a stupa model, or of a minor architectural component; see Oliv-



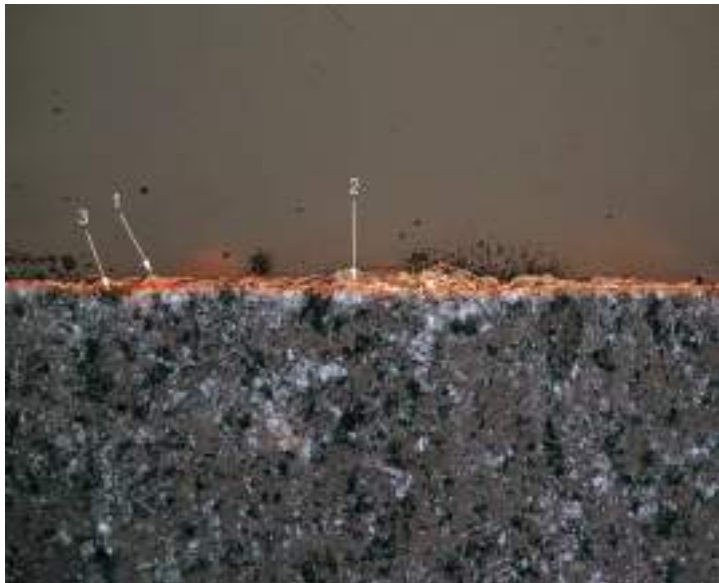


Fig. 3

Polished section of Sample SS1, observed at the optical microscope in reflected light, with crossed nichols. 1, gold sheet in two parallel layers. 2, discontinuous whitish layers containing aluminosilicates, quartz and calcite. 3, a thin layer of red bole-clay, mainly preserved in pockets on the surface of 4, the chloritoschist object (I. Angelini, Dept. of Geosciences, University of Padova).

ieri, this issue) (Fig. 3) shows the application of two, and locally more superimposed gold sheets (Fig. 3, layer 1: possibly, an effect of burnishing). The thickness of the gold leaf was not measured. Between the two gold sheets there is no red bole, but thin and locally very finely textured layers of a whitish material (Fig. 3, 2). These micro-layers, inter-fingered with gold foils, have a quite variable composition: they include fillosilicates, quartz and calcite.

Do these layers represent subsequent coats of fine calcareous films similar to the whitish backgrounds discussed above, and required by the need of renovating the gold surfaces? Or, rather, are they due to subsequent environmental deposition on the sculpture? Only future analytical work and more samples might solve the question. The same section shows that above the medium-textured chlorite-schist, was directly laid a layer of a red bole-like ochre (Fig. 3, 3). The Raman spectra clearly indicate that this thin red layer, most probably applied to the stone in semi-fluid conditions with a soft brush, was mainly composed of hematite (or red ochre). Fig. 3, 4 is the chlorite-schist of which the object was made.

21 EDS spectra obtained by the means of semi-quantitative EDS measurements of standardized spot areas on the uncleaned gold foils (for all the four analyzed samples) are statistically coherent. The samples from Saidu Sharif indicate the use of a rather pure metal, averaging 93.7% in gold, 5.5% in silver, and 0.9% copper. For Barikot, the percentages are relatively similar: 95.3% gold, 3.2% silver and 1.6% copper. Given the low number of samples, all the preliminary and partial results so far reviewed do not allow any generalizing statement. In fact, even while dealing with the few available samples we had to face unexpected and intriguing questions.

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Conservative data on polychrome stucco, stone and clay sculptures and architectural decoration of Gandharan art

Luciana Festa,
Simona Pannuzi

MIBAC, Istituto Superiore per
la Conservazione ed il Restauro

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Paris, Museum Guimet,
Schist statue of Buddha
in the Miracle of Sravasti,
from Paitava monastery
(Afghanistan, Kapiça region)
(MG 17478, sample 12), detail of
gilding (photo S. Pannuzi).

Keywords

Stone artefacts,
stucco artefacts,
clay artefacts,
Gandharan art,
conservation,
guidelines.

Abstract

In the first phase of study on Gandharan artefacts (2014-15), the Istituto Superiore per la Conservazione ed il Restauro (ISCR) was focused on technological and conservative issues of some schist stone and stucco sculptures belonging to the collection of the Museum of Oriental Art of Rome (ex MNAO, now merged into the *Museo delle Civiltà*). Experts of different disciplines evaluated the conditions of the stone artworks, to define the best conservation approaches and treatments. Chemists and restorers compared cleaning methods and evaluated consolidation and sticking practices.

In our further studies we also consider stucco and clay artworks, deepening our research through scientific analyses and observation carried out on both archaeological finds (Afghanistan, Pakistan) and musealized sculptures (Civic Archaeological Museum of Milan, Oriental Art Museum of Turin and Guimet Museum of Paris).

This further work allowed, through the characterization of the materials and the observation of the working techniques, to deepen the study of the Gandharan stone, stucco and clay artworks and to formulate operational hypothesis for their conservation.

Introduction

In the first phase of study (2014-15) our Institute was focused on technological and conservative issues of some sculptures of Rome Museum of Oriental Art (ex MNAO, now merged into the *Museo delle Civiltà*). In most cases the sculptures and reliefs (schist, stucco and clay) were still covered by residues of the excavation dirt; both were rather fragile materials, as there were traces of pigments. Because of this problem, experts of different disciplines evaluated only the conditions of the stone artworks, to define the best conservation approaches and treatments. Chemists and restorers compared cleaning methods and evaluated consolidation and sticking practices.

In our further studies we also consider stucco and clay artworks, deepening our research through scientific analyses and observation carried out



Fig. 1
Paris, Museum Guimet,
Bodhisattva Maitreya,
detail (AO 2908, sample 5):
white layer on the schist statue
(photo S. Pannuzi).

Fig. 2
Paris, Museum Guimet,
Elephant, detail (MA 6295,
sample 1): white layer on the
schist statue
(photo S. Pannuzi).

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Fig. 3
Milan, Civic Archaeological
Museum, Capital of a pillar,
detail (A.990.05.1, samples 30,
31): white layer on the schist
sculpture
(photo S. Pannuzi).

Fig. 4
Paris, Museum Guimet, Relief
from Shotorak monastery
(Afghanistan), detail
(MG 22148, sample 14): traces
of red bolus on schist relief
(photo S. Pannuzi).

Fig. 5
Milan, Civic Archaeological
Museum, Standing Buddha,
detail (A.09.10692,
sample 21): traces of gilding on
drapery dress of schist statue
(photo S. Pannuzi).

on both archaeological finds (Afghanistan, Pakistan) and musealized sculptures (Civic Archaeological Museum of Milan, Oriental Art Museum of Turin and Guimet Museum of Paris). We noted that some artworks kept in museums were subjected to previous restoration (bonding, consolidations, cleaning), also with incorrect or unsuitable products and methodology.

In such holistic perspective, the use of the materials (stone, stucco and clay artefacts), the sculpting process with the polychrome decoration of the surfaces and the conservative intervention were considered in a unified framework. Moreover, we highlight the need of precise guidelines to restore these fragile artefacts. During the restoration it is very important to have a collaboration with the diagnostic research, so a series of focused analyses could help to understand the compositional materials of the artworks and to identify the appropriate methodology and the suitable restoration products to use for the conservative intervention.

Stone artworks

Materials and processing technique

After the first analyses about the Gandharan artworks of the Rome Museum (ex MNAO), our research carried on comparing the data related to artworks of other Museums and examining in depth the new analyses.

Analyses on the artefacts of the Museum Guimet and the Milan Museum allow to ascertain that the schist artworks can be covered by a whitish layer that we have to consider a ground layer for the polychrome decoration. After further analyses we identified different pigments and traces of gildings over different ground layers; furthermore, we found different kinds of binder.

Conservative conditions

Generally, all the examined artefacts preserved in the Museums have a fair conservative condition, although they were fragmentary, worn and covered by different whitish layers, more or less tough, often due to long deposition in the earth. In many cases these white layers are more evident after cleaning and are discontinuous and fragile, but quite joined to stone surface and sometimes thick (Fig. 1, 2, 3). The polychrome decorations are always preserved very partially, and it's often difficult to see them. Usually the red colour is the most evident: it is often due to red ochre¹, sometimes it is a bolus, but the overlapping gilding is lost² (Fig. 4).



¹ For artworks from Rome Museum see: Talarico et al., 2015, tab. 1 and p. 59.

² See Pannuzi, Talarico, Guida, Rosa in this issue.

Some small traces of gilding are preserved on the surface of the artefacts; sometimes the gilding is more evident but always very thin. We can observe by microscope that it is easily chipped and not smooth.

Little traces of gilding are sometimes visible only by optical microscope (Figg. 5, 6, 7). When the ground layer of gilding is red bolus, this is better preserved. The lime ground layers are often lost with the gilding and less evident.

Conservative intervention

During our previous studies, for the removal of residual films of excavation sediments on Gandharan sculptures of Rome Museum, carved in different types of schist, the ISCR équipe compared the results of two different conservation approaches, both with low environmental impact and safe for the operators and the artworks: a chemical one, involving the use of aqueous solutions with carbon dioxide (CO₂) and a physical one employing Laser, used for removing lime-rich concretions on sculptures whose fragility required an extreme care. The results were positive for both: the two approaches are complementary, as they can be combined in the same cleaning procedure. Otherwise, the characteristics of stone, that tends to split in parallel layers, made impossible the most common chemical cleanings³.

Our team also evaluated the methodological issues about consolidating and joining fragmentary stone sculptures: we tested some products for consolidation, both water-soluble or soluble in organic solvents, particularly in terms of concentration, application method and chromatic changes. We also considered various adhesives for refitting the schist flakes or more substantial fragments, evaluating their mechanical behaviour in the adhesive process, their sensibility to water and superficial colour changes.

The use of the laser cleaning is actually not usual for cleaning polychrome and gilded stone artworks, because the study about these particular artworks has recently begun. During the last research of ISCR on Gandharan archaeological sculptures the restorer M.Gigliola Patrizi successfully removed carbonate layers from polychrome artefacts by laser⁴. The laser was particularly useful cleaning very friable and fragile artefacts that could be damaged by water solution cleaning. On polychromy (red ochre in that case) a Nd:YAG with wavelength of 1064 nm (El.En. "EOS 1000") in Short Free-Running was used, because its action is more delicate and gradual than the Long Q-Switch mode, used for strong earth concretions.

Laser cleaning is also recommended in case of presence of gilding, as recently tested in ISCR on stone gilded sculptures of the Renaissance age with excellent results⁵.

During the next interventions the white ground layer for polychromy, now well identified⁶, has to be absolutely preserved with the use of suitable cleaning and consolidation methodologies.

In the next future new tests with innovative products will be carried on fragments of the schist sculptures. The recent researches about nanoma-



³ Sidoti and Patrizi, 2015; Patrizi, 2015, pp.70-72.

⁴ Patrizi, 2015, pp. 69-74.

⁵ See the conservative intervention on the gilded altar dossal of the Orte Cathedral (VT): Pannuzi, Montemaggiore, Galanti, 2018.

⁶ See for these theme: Pannuzi, Talarico, Guida, Rosa, in this issue.

materials have given a very good results on porous stones, but these products must undergo further tests because in a first experimentation on the Gandharan sculptures the results were not optimal⁷.

Also the ground layer for the polychromy, the traces of the pigments, the bolus and the traces of gildings absolutely require consolidation: it would be recommended the use of micro and nanoacrylic emulsions, because it's necessary to join the consolidation and adhesive effect with a deep infiltration.

An acrylic stucco with microsphere (Stuccoforte light, Max Meyer) with adequate characteristics of mechanical resistance and reversibility can be used for filling the gaps on the surface: it was recently used in ISCR on frescoes, stucco and gypsum artworks⁸.

Stucco artworks

Materials and processing technique

In our last research about Gandharan sculpture we examined stucco architectural decorations from Italian excavations in Swat, Pakistan (MAI), also with traces of polychromy. These stucco samples come from the external walls of some collapsed buildings of Buddhist sites in Swat (Amluk-dara, Barikot and Gumbat). Moreover, samples from important artworks preserved in Museum Guimet and in Civic Archaeological Museum of Milan has been analyzed.

These artworks show evident traces of colours (red and blue). By petrographic analyses, the stucco samples from the archaeological excavations in Swat show mostly a calcite plaster produced from limestone where the gypsum is always absent. Scientific investigations carried out on some art-

Fig. 6
Milan, Civic Archaeological
Museum, Standing Buddha
(A.09.10692, sample 21):
traces of gilding on schist
statue by Dinolite.



⁷ Sidoti and Patrizi, 2015, pp. 65-68.

⁸ Giovannoni et al. 2015, pp. 89-102.

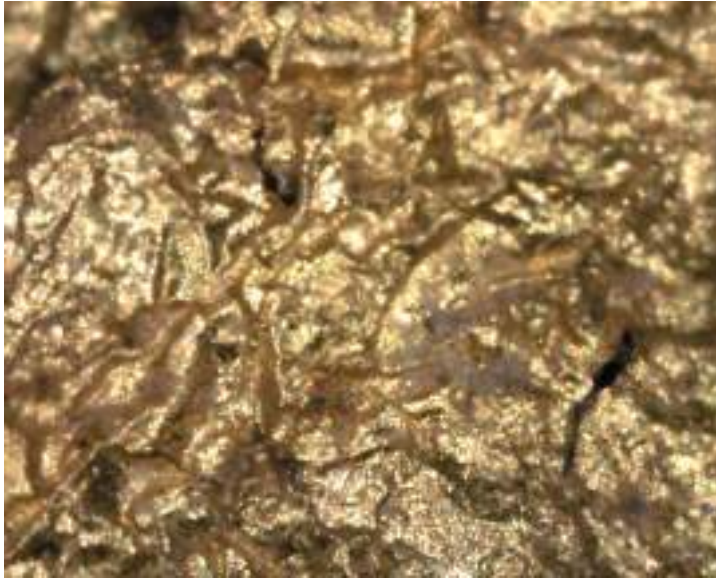


Fig. 7
Turin, Oriental Art
Museum, Schist corbel
(4581, samples 34-35):
particular of the gilding
by Dinolite.

works from the Museum Guimet (samples 6, 7) and Milan Museum (sample 22), show otherwise the presence of gypsum in the plasters.

Sometimes in the plaster of the Swat samples fragments of quartzite, granite, gneiss, garnet, marble and mica flakes are present, with the addition of a fraction of clay⁹; the artworks from the Museums revealed instead the presence of calcite, gypsum and clay (Museum Guimet, samples 6, 7) and a calcium carbonate matrix with heterogeneous grains (iron, potassium, sodium, silicon-aluminate) (Milan Museum, sample 23)¹⁰.

In a sample from Gumbat (GBK 17A) in a matrix of fine grained calcite, fibre-like pore structures of unknown origin are visible¹¹. All the plasters show large and angular grains, well visible to the naked eye, very granulose, unrefined and often with irregular fractures.

About the architectural decorations, we noted that the stucco in the malleable and plastic state was laid on the wall with 1,5-2 cm of the thickness; then it was smoothed on the surface with different instruments, including a wet brush (on the surface of a sample from Amluk-dara, AKD 14B, it is possible to see traces of the bristles) (Fig. 8). Decorative and relief parts were carried out with moulds or with modine on the wet stucco surface to create cornices and capitals, (see the sample from Gumbat, GBK 18 C) (Fig. 9 a, b). These decorative parts were added when the surface of the stucco was still wet and not completely carbonated.

Probably the granulose plaster of many artefacts was smoothed with the addition of lime without inerts (grassello); later the surface could be painted with pigments. In the sample from Gumbat, GBK 17 B, we noted that the finishing layer is rather thick (1 mm), made with lime but almost completely lost, spread dry (a secco) on the surface and then smoothed (Fig. 10).

On all the artefacts that preserved colour layer, it seems that the colour was laid dry on the already hardened surface. In the architectural samples the col-

⁹ See Rosa, Theye, Pannuzi, in this issue

¹⁰ Pannuzi, Talarico, Guida, Rosa, in this issue.

¹¹ See Rosa, Theye, Pannuzi, in this issue.

Fig. 8
Stucco artefact from
Amluk-dara (Swat,
Pakistan), sample 14 B
(photo E. Loliva ©ISCR).

our visible is always red, thin, vanished, not cohesive and with serious decay, due to the weathering of the external surface of the walls (Figs. 11, 12, 13). Fortunately, the stucco sculptures conserved in the museums showed a better preserved surface and in a case by scientific investigations has been noticed that the red pigment, without a ground layer, was absorbed into the stucco surface, before the carbonation (sample 22 from Milan Museum)¹² (Fig. 14).

Conservative state

The architectural stuccos, from Italian excavations, served as decorations and protection of the walls of the buildings. Due to the weathering, with the decay of the painted layers, the stucco covering detached from the walls.

However, this stucco covering is not crumble, because the cohesion of the plaster is very strong; the painted surface is instead very consumed and sometimes the mineral components of the plaster are visible.

Moreover, over the surface of the architectural samples has been noted the presence of excavation earth, often very adherent to the surface: these earthy layers compromise the visibility of the sample and the conservation of the painted layers, but they did not cause the breaking of the plaster. The stucco artworks, kept in the museums, certainly show a good or a decent conservative condition, because certainly in the past they were subjected to a cleaning treatment. We noted that the stucco is solid and tenacious but for these artworks of the painted decorations are also only present in traces and their surfaces appear corroded.

In the previous research about the artworks of the Rome Museum (ex MNAO), we observed on a stucco cornice (n. 1240) the presence of successive ground layers of the painted decoration, to be considered as ancient maintenances¹³.



¹² See Pannuzi, Talarico, Guida, Rosa in this issue.

¹³ Talarico et al., 2015, pp. 55 e 59. Instead, we supposed a modern maintenance, due to the presence of a modern pigment, for another artwork of the Rome Museum (Talarico et al., 2015, pp. 58-59).

Based on our new investigations we can assume that in ancient time these maintenances were periodically carried out on the outdoors walls, consumed by the atmospheric agents¹⁴.

Conservative intervention

Before the cleaning of stucco artefacts it's necessary to ascertain with appropriate analyses their composition and to verify the presence of layers of preparation or pigments.

If no surface finishing is present, the lime based stucco can be cleaned with aqueous systems.

In the opposite case, or when there is the presence of gypsum in the composition of plaster, a dry cleaning is needed, for example a laser cleaning, to be applied after testing the appropriate parameters.

In case of stucco with gypsum, the aqueous cleaning can be also performed using as supportant a rigid gel (Gellano, Agar-agar), that avoid the absorption of water.

In any case, a preliminary mechanical cleaning performed with scalpels and brushes can be effective removing earth and dust deposits and incrustations.

As the cohesion condition observed on the stucco artefacts so far examined is very good, a consolidation does not seem necessary. In case of very delicate polychrome artefacts, the finishing must be consolidated and fixed to the surface as previously described for stone materials.

The fragments can be reassembled with epoxy resins and reintegrated with the same material used for stone, the acrylic plaster with microspheres (Stuccoforte light, MaxMeyer).

If pins or supports are needed, fiberglass bars can be used, both for musealized and in situ objects.

In the last case, at the end of the intervention, the application of a surfactant (siloxanes or nanometric products) is recommended.

Clay objects

Materials and work techniques

Clay processing includes a big variety of materials and work techniques: from rough manufactures to very fine productions that needed a very high execution skill.

The objects examined are very different, belonging both to unidentifiable archaeological fragments (from Afghan excavations) and very fine artifacts exposed in very important museums such as Guimet Museum in Paris (from Fundukistan site) and the Civic Archaeological Museum of Milan (without provenance indication).

a) Fragments from archaeological excavations

The clay is very fragile, due to the addiction of various kinds of aggregates, broken in irregular and angled grains. The observation with optical and WDS scanning microscope evidenced the presence of various minerals and rock fragments inside the clay mixture.

Fig. 9A, 9B
Stucco artefact from Gumbat (Swat, Pakistan), sample GBK 18 C (photo E. Loliva ©ISCR).

¹⁴ See Rosa, Theye, Pannuzi, in this issue (sample AKD 14C).



Fig. 10

Stucco artefact from Gumbat (Swat, Pakistan), sample GBK 17 B (photo E. Loliva ©ISCR).

Fig. 11

Stucco artefact from Barikot (Swat, Pakistan), sample BKG 1123, 15 A: traces of red colour are visible (photo E. Loliva ©ISCR).

Fig. 12

Stucco artefact from Barikot (Swat, Pakistan), sample BKG 1123, 16 B: traces of red colour are visible (photo E. Loliva ©ISCR).

These minerals (feldspar, quartz) and rock fragments (phyllite, limestone, quartzite) are bounded by a low cohesion clay that works as binder.

In the composition of one of the samples (from Tapa Sardar, Afghanistan) has been also observed the tragacanth gum, used to add cohesion to the very fragile mixture (Fig. 15).

Mineral powders with degreasing properties were added to the very soft clay.

The small dimensions of the samples didn't allow any other valuation on the work techniques.

From the observation performed and a preliminary analysis, waiting for the results of specific thermal analysis to be carried out in the next future, is possible to hypothesize that the objects were cooked, probably at low temperature¹⁵. This cooking process allowed the clay to function as a binder, including the heterogeneous aggregates but not achieving a high mechanical strength.

Regarding the artistic context of the late Gandhara, where the clay was largely used for artworks, we noticed that clay artifacts have been often classified as raw clay, based on the friable consistence of the mixture without any specific characterization. It would be necessary deepen the problem clarifying case by case the executive modalities.

From various samples examined has been possible to observe the presence of a layer of painting on the surface, probably given after the cooking process. Some samples from Afghan archaeological excavation have a superficial black coloration; in one of them has been identified a protein binder used to fix the color, to be deepened with further scientific investigations.

b) Musealized artworks

Samples from clay sculptures of the Paris and Milan Museums allow to observe that the clay used is better in quality and consistence, as it has been employed for works of particular value. Inside the mixture can in any case be noticed the presence of different components, even vegetal fibers visible to the naked eye. Based on the SEM EDS and FTR analysis carried on by ISCR, it has been possible recognize gypsum and calcium particles, used as degreaser.

¹⁵ See Rosa, Theye, Pannuzi and Pannuzi, Talarico, Guida, Rosa in this issue.





Some sculptures seem to be realized with a mould (Fig. 16), others freely shaped with plastic clay. The protruding parts were made separately and in some cases assembled with pins, not found (Fig. 17).

The surface has a very fine finishing realized before cooking, giving a very smooth and compact aspect and evidencing details obtained separately with plastic clay.

A complex decorative technique with preparation layers and colors, like natural ultramarine blue (lapis lazuli), of which considerable deposits are in the Himalayan area, has been also observed.

The superficial color layer could be given on a preparation of minio and was constituted of various minerals (lapis lazuli, ochre, orpiment, vermilion). Cobalt stannate, found in traces, is related to recent intervention.

Proteinaceous binders (animal glue, milk and eggs together) in some cases are presented in the colored superficial finishing.



Fig. 13
Stucco artefact from Amluk-dara (Swat, Pakistan), sample 14 C: traces of red colour are visible (photo E. Loliva ©ISCR).

Fig. 14
Milan, Civic Archaeological Museum, Painted stucco Monk (A.988.O2.1, sample 22): detail of the red layer on the stucco surface by optical microscope (05_050x_part 2).

Fig.15
Clay artefact from Tapa Sardar (Afghanistan), sample 1 (photo E. Loliva ©ISCR).

Conservation Conditions

a) Fragments from archaeological excavations

The clay samples are in very bad conditions: the heterogeneity of the material and the low content of clay binder, join to the insufficient cooking and the degradation due to the burial, caused fragmentations and hard disintegration. The original shape is visible only in very small areas (Fig. 18).

b) Musealized artworks

The clay sculptures of Paris and Milan Museums are in good or decent conditions, even with some missing parts, localized erosion, loss of pictorial film (Fig. 19). Some of the artworks have been recently restored to enhance the faded polychromy, using the same modern pigment (cerulean blue) used for the restoration of the stucco object from Rome Museum (ex MNAO)¹⁶.

Intervention

In case of very delicate artefact, before cleaning is essential to perform a consolidation with microacrylic resins to give greater mechanical resistance to the clay.

When a colored finishing is present the cleaning must be performed very carefully to avoid the loss of superficial layers, after a consolidation of the

¹⁶ Talarico *et al.*, 2015, pp. 58-59.

Fig. 16
Paris, Museum Guimet, Seated Buddha in *vajrasana* from Fundukistan monastery, Ghorband Valley (Afghanistan) (MG 21444): versus of the statue (photo S.Pannuzi).

Fig. 17
Paris, Museum Guimet, Seated Buddha from Fundukistan monastery, Ghorband Valley (Afghanistan) (MG 18970, sample 20): detail of the arm (photo S.Pannuzi).

most delicate and fragile areas carried on with microacrylic resins by brush. The superficial deposits can be eliminated with brushes, scalpel, dental stylets or laser with adequate setting.

The reintegration of the polychromy missing part is not appropriate, not to add different materials and to preserve the appearance of the original artifacts.

Conclusion

This work allowed, through the characterization of the materials and the observation of the working techniques, to deepen the study of the Gandharan stone, stucco and clay artworks and to formulate operational hypotheses for their conservation.

Some methodologies, for example on stone artworks, have been already tested, others need further studies that we hope will be performed during next restorations, both on musealized artworks and in situ.

Attention is drawn to the safeguard of the very delicate superficial finishing layers during the archaeological recovery. The conservation and the study of these finishes can allow further studies on the Gandharan work techniques that will shed light on this artistic context still today not well known.

In particular, during the recovery of a painted artefact, is recommended not to wash the fragment or use brushes to remove earth deposits. It's eventually possible to use carefully a soft brush paying a special attention to preserve delicate layers of finishing. Waiting for a targeted cleaning per-



formed by specialized restorers, the object must be stored in a dry place, avoiding the contact with other finds that can scratch the surface. During the transport the fragment must be protected against accidental bumps by positioning in containers with adequate shock absorbers.

As regards the artworks exposed in private or public collections, a periodic visual inspection, followed by a delicate dust removal performed by specialized restorer, is warmly recommended.

Critical situations or worsening of conservation conditions must be immediately reported.

The objects stored in deposits must be preserved respecting the microclimatic conditions already indicated and providing protection against accidental bumps and contacts with other artefacts.

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Fig. 18
Clay artefacts
from Tapa Sardar
(Afghanistan)
(photo E. Loliva ©ISCR).

Fig. 19
Milan, Civic
Archaeological
Museum, Clay Brahma
Head (A.09.9421, sample
33): detail of yellow
layer on the hair by
Dinolite.



A short note on contexts and chronology of the materials from Saidu Sharif, Amluk-dara, Gumbat and Barikot (Swat)

Luca Maria Olivieri

ISMEO, Associazione Internazionale di Studi sul Mediterraneo e l'Oriente, Director Italian Archaeological Mission in Pakistan

opposite page

Fig. 6
Stucco decoration of
Stupa 61 (Period II)
(photo by L. M. Olivieri;
courtesy ISMEO).

Abstract

The following note is meant to integrate the data of the materials discussed in three contributions published in this issue of «Restauro Archeologico» (Bona-duce et al., this issue; Festa, Pannuzi, this issue; Rosa et al., this issue; Zamin-ga et al., this issue). The analysed materials were sampled from three Buddhist cultic complexes in the Swat Valley in the outer Gandharan region (nowadays in Pakistan). The three sites are Saidu Sharif I, Amluk-dara, and Gumbat. Other samples were taken from a votive chapel (Shrine 1023) of the urban settlement of Barikot in the Swat Valley. All the samples belong to the same chronological phase (3rd century CE).

Introduction

The information here briefly presented, are meant to provide the contexts of the samples analysed in four contributions published in this issue of «Restauro Archeologico». Interestingly, all the samples considered belong to same late Kushan/Kushano-Sasanian acculturation phase (or Mac-rophase 5; second half of the 3rd century CE).

Three of the four sites described here (Amluk-dara, Gumbat and Barikot), two Buddhist sacred areas and a large settlement, lie at five km distance on the middle stretch of the Swat valley (left bank) (Fig. 1). The fourth site (Saidu Sharif I), a Buddhist sacred area, is located a little bit further N (c. 20 km from Barikot).

Most of the descriptions here presented, as well as the discussion on the technical issues related to the Main Stupa of Amluk-dara, are modified and abridged versions of my previous contributions (Olivieri, 2011 [2015]; Olivieri, 2016; Olivieri, 2018; Olivieri et al., 2014). At the end of the text I have also briefly elaborated on some some specific aspects connected to the complex processes of building, decorating and painting Buddhist monuments in Swat.





Fig. 1
Map of Swat (Courtesy ISMEO; Map by K. Krizan D. Nell, University of Vienna, Department of Geography and Regional Research).



Saidu Sharif (Fig. 2)

The Buddhist sanctuary of Saidu Sharif I was excavated between 1963 and 1982 by Domenico Faccenna (1995). Some sectors were left unexcavated in 1982. After 30 years these surviving stratigraphies were nothing but shapeless eroded amount of debris (Olivieri 2016) (Fig. 3). It was therefore decid-



ed to dig them up in order to clear the area and control the stratigraphical deposit of these sectors. One of the areas left unexcavated was immediately to the W side of Vihara 54. The latter is located at the N end of the Stupa Terrace (Faccenna, 1995, pp. 360-368). The two tiny fragments discussed by Zaminga et al. (see *infra* this issue) were recovered in layer (6) between the

Fig. 2
The Stupa Terrace of
Saidu Sharif I
(photo by Fazal Khaliq).

Fig. 3
Vihara 54 before the excavation (photo by L. M. Olivieri; courtesy ISMEO).

Fig. 4
Vihara 54 after the excavation (photo by L.M. Olivieri; courtesy ISMEO).

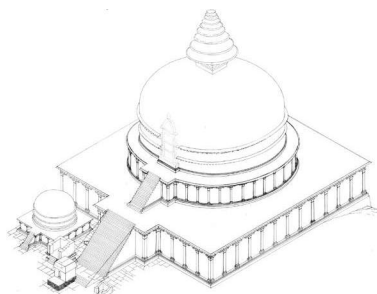


Fig. 5
AKDI sacred area:
axonometry (from WNW)
(drawings by F. Martore;
courtesy ISMEO).

collapse of Structure 82 (Faccenna, 1995, pp. 401-402) and Floor F3R, in a phase corresponding to the end of Period II/beginning of Period III (c. second half of the 3rd century CE) (Faccenna, 1995, p. 426) (Fig. 4). Both fragments can be tentatively reconstructed as parts of a miniature stupa originally housed inside Vihara 54.

Amluk-dara (Fig. 5)

The Buddhist sanctuary of Amluk-dara has been extensively discussed in recent publications (Olivieri, 2018; Whitfield, 2018). The site has an extension of approx. 25,000 m². Near the SE limit of the area, a cluster of boulders were in ancient times arranged in order to dam up a stream so as to

create an artificial water reservoir. The site is divided into four terraces. The monastery was possibly in the uppermost terrace, while the Main Stupa is located on the westernmost of the three lower terraces. The extension (200 m²) of the excavated area, roughly corresponds to 1/6 of the total surface of that terrace. Three ancient quarry areas were found nearby the site (phyllite and granite).

For a review of the site and its role in the ancient pilgrimage's network, see the contribution by S. Whitfield (2018). A revised version of the final excavation report has been recently published (Olivieri, 2018).

The Main Stupa (Rosa et al., this issue)

The monument is a stupa square in plan with a stairway on its N side, with a 2nd stairway with the 2nd storey along the same axis. The monument was more than 30 m high (including the chattravali).

The podium or the 1st storey is 32 m long and 6.5 high. The base is decorated with a low plynth with a torus-type moulding. The cornice is decorated with a series of plain pilasters with Gandharan-Corinthian type capitals supporting modillions. The upper cornice is formed by a row of false brackets (cyme reversa type) supporting projecting slabs. The same decoration (pilasters with Gandharan-Corinthian capitals, modillions, brackets and coping slabs) is used in the first cylindrical body of the stupa (2nd storey). The 3rd and 4th storeys show only a row of false-brackets supporting the coping slabs. The presence of these coping slabs, instead of a simple cornice, may be explained by the fact that the surfaces underneath were not only plastered, but also painted.

The masonry is completely made of isodomic blocks of local granite arranged in ashlar technique, with spaces filled with schist flakes. Pilasters (bases, shafts, capitals), modillions, and brackets are made in kanjur (organogenic limestone, not local); projecting slabs are in schist. The original granite pillars survive in some elements of the 2nd storey. The entire surface of the Main Stupa was plastered (and ample traces of plaster still survive).

Table 1

List of Samples with calibrated dates (CEDAD, Università del Salento).

Source	Description	Code	Radiocarbon Age (BP)	$\delta^{13}C$ (‰)	Calibrated dates (confidence level 2 σ)	Calibrated dates (OxCal 4.2.2)	AKD Period
AKD I SU (66)	Charcoal	LTL12769A	1771 ± 45	-19.8 ± 0.4	130AD (95.4%) 390AD		II-III
AKD I SU (116)	Charcoal	LTL12771A	1690 ± 45	-20.0 ± 0.3	230AD (95.4%) 440AD		IV-V
AKD I SU (136)	Charcoal/ animal bones	LTL12770A	1227 ± 40	-18.3 ± 0.6	680AD (95.4%) 890AD	685 - 895cal AD	VI-VII
AKD I SU (110)	Animal bones	LTL12766A	1354 ± 30	-19.3 ± 0.5	620AD (89.4%) 720AD 740AD (6.0%) 770AD		VII
AKD I SU (66)	Animal bones	LTL12773A	1291 ± 35	-15.5 ± 0.5	650AD (94.0%) 780AD 790AD (1.4%) 810AD	660 - 825cal AD	VII
AKD I SU (76)	Animal bones	LTL12767A	1102 ± 35	-21.8 ± 0.5	870AD (95.4%) 1020AD	835 - 1015cal AD	VII (final)

Fig. 7
Sampling area of sample
AKD 2: stairway, side E
(photo by L. M. Olivieri;
courtesy ISMEO).

The core of the monument is composed of horizontal courses of stones and horizontal thick courses of mortar (c. 0.10-0.15 t). The mortar is made of compact layers of yellow purified clay with thick inclusions (mostly limestone or *kanjur*).

Sample AKD 2 was sampled from the plastered surface of the E side of the 1st stairway (Figs. 7, 9). From the W side of the same were sampled Samples 4 and 5 (Fig. 8).

Shrine 60 (Bonaduce at al., this issue; Festa, Pannuzi, this issue; Rosa et al., this issue)

The monument (see Figs. 5 and 9) is coeval to the Main Stupa. “The monument [60] is a square shrine with door opened to NNE. The external surface is practically all covered by a plaster with stuccoed colored surface. It is composed of a podium with base, torus, projecting fillet, reverse sloping fillet, and a band, with a superimposed second torus with cavetto on fillet. The cornice of the podium (lower part) is composed of a band with upper fillet, cyma recta and final band. The upper fillet is decorated with a row of bead-and-reels; the cyma recta, with lattice with oblique fillets and oblique parallel rows (straight and curvilinear, alternating); the fields between the fillets is colored red. The upper part of the cornice is decorated with a row



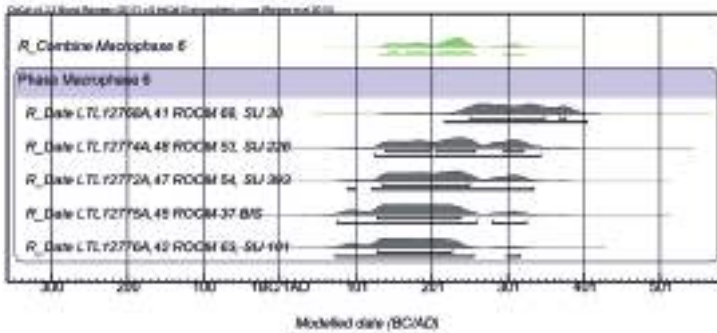


Table 2
BKG Period IX = Macrophase 6 (modelled by CIRCE/Innova, Università della Campania "Luigi Vanvitelli"; data generated by CEDAD, Università del Salento).

of Gandharan-Corinthian S-shaped pillar type brackets supporting a flat band surmounted by a reverse ovolo and a fillet. The fields between the brackets are colored yellow. The base of the body is marked with a band surmounted by torus, fillet and cyma reversa” (Olivieri, 2018, p. 36). Samples AKD 13C and 14C were collected from the S (back) side of Shrine 60 (Fig. 9).

Structural and decorative phases

The Main Stupa originally (Period I) had a gray bluish schist decoration, whose fragments were found largely re-used or abandoned (Fig. 10a-b). Most of the decoration found *in situ* is made of *kanjur* and is coeval or posterior to Period II. In Period II the 1st stairway was heavily damaged, perhaps during one of the two earthquakes that hit Barikot in the 3rd century CE. Instead of rebuilding it, the monks simply built a new flight of steps on top of the damaged one, reusing the same material. Consequently, the staircase became higher, therefore longer and with a different inclination. To the same Period II belongs the stucco decoration of the Main Stupa, as well as of Shrine 60 and the other minor monuments (see Figs. 11-13).

All the samples analysed in the three reference studies (Bonaduce et al., this issue; Rosa et al., this issue; Festa, Pannuzi, this issue) therefore belong to a phase coeval or posterior to Period II.

Gumbat and its chronology (Festa and Pannuzi, this issue; Rosa et al., this issue) (Fig. 14)

The Buddhist sanctuary of Gumbat with its two terraces and monastery, has been recently reassessed (Brancaccio, Olivieri, 2019), and does not need to be here presented anew. The Great Shrine of Gumbat, the only surviving example of double-domed cupola in Gandhara, is located in the centre of the northernmost terrace. The building was studied and restored in 2011-2012, while a portion roughly corresponding to 1/4 of the terrace was excavated in 2011 (Olivieri et al., 2014).

The chronology of the monument is based on the radiocarbon dates of the surviving wooden elements of the architecture (Olivieri et al. 2014: 302; Di Giulio et al., 2018).



Fig. 8
Sampling area of
samples AKD 4-5:
stairway, side W
(photo by E. Loliva;
courtesy ISMEO).

Based on the available data, it appears that the Great Shrine had two building phases [...]. The Great Shrine and Buildings [3] and [13] (= Period III) were erected in the early-2nd century CE as suggested by conventional 14C analysis of the wooden lintel of the upper south clerestory window of the Great Shrine (1840 +/-30 BP = 110 CE). A second phase (= Period V) should have included the reconstruction of the Great Shrine double dome took place in the mid part of the 3rd century CE. (Brancaccio, Olivieri, 2019, p. 127)

Information on the sampling area of GBK 17 are missing. However, on the basis of the fieldwork notebook, it seems that it was sampled from the upper dome of the Main Shrine (Fig. 14), or from one of the Period V minor monuments. In any case, the sample GBK 17A (but also GBK 17B; Rosa et al., this issue; Festa, Pannuzi, this issue) is coeval or posterior to Period V of the site.



Barikot, Unit K, Shrine 1023 (Bonaduce et al., this issue; Festa, Pannuzi, this issue; Zaminga et al., this issue) (Figs. 15, 17)

Barikot, the ancient urban site of Bazira, is a key site for the reconstruction of the cultural and historical framework of ancient Swat (see ref. in Olivieri, Filigenzi, 2018). The samples analyzed in Bonaduce et al. and Festa, Pannuzi (this issue) were taken from the stucco decoration of a small Buddhist shrine (1023) in Court 107 of the ancient city (BKG Periods VIII and Period VII = Macro-phases 5a and 5b = c. 3rd century CE). Shrine 1023 is located at the N side of Court 107 opposite to a small distyle temple (Temple K) (Fig. 16) (Olivieri et al., 2014).

Shrine 1023 (Fig. 19)

The structure in Court 107 is a detached Buddhist chapel (Shrine) (Olivieri, 2011 [2015]). It is rectangular in plan, facing S. It has a high podium with

Fig. 9
Sampling area of samples AKD 13C and 14C, and of AKD 2 (view from SSE of Stupa 61) (photo by L. M. Olivieri; courtesy ISMEO).

flat base and a moulded cornice supported by plain brackets; on the top front of the chapel there was a wooden architrave supported by a row of plain brackets. The cella was closed by two folding wooden leaves hinged to a wooden frame (the iron parts of which have been almost completely recovered).

At least the moulded parts and the brackets were plastered. At the end of the first phase of the Shrine's life (Period VII) an earthquake damaged the building; in front of the monument, where fragments of gilding were found (Zaminga et al., this issue), an entire portion of the roof with a portion of the original stucco decoration and plastering was recovered (and sampled, see Bonaduce et al., this issue). The collapse occurred in two phases: first the roof collapsed, then the rest of the structure (Fig. 18). In the second phase of the Shrine's existence (Period VIII), while the lower part of the podium was covered by debris (leveled but not removed), the cella was modified. A final collapse, caused by another earthquake, resulted in the abandonment of the Shrine (Fig. 19).

Inside the cella in Period VII a votive stupa was housed, the remains of which were partly recovered during the excavations. In Period VIII the cella housed one Buddhist stele.





Fig. 10a, 10b
Fragments of the Period I schist decoration of the Main Stupa (AKD 24, 61) (photos by E. Loliva; courtesy ISMEO).

Chronology of abandonment phase of Barikot (Period IX = Macrophase 6)

Table 2 shows the new calibration made by CIRCE, which confirms the chronology proposed earlier by CEDAD – Università del Salento, Lecce (Olivieri, 2011 [2015]; Cupitò, Olivieri, 2013). “The main chronological range falls within the 3rd century CE. This evidence not only confirms the historical unity of the re-use and re-functionalization phenomenon and its relative short duration, but also indicates how this event significantly took place at the same time as the great expansion of the Sasanian dynasty which, in the mid-3rd century CE, conquered Gandhara, turning it into the Kushanshahr province [more precisely during BKG Period VIII]” (Olivieri et al., 2014, pp. 88).

With the support of the archaeological materials (including coins) we have hypothesized a 3rd century chronology for BKG Periods VII and VIII, and a late-3rd to early-4th century chronology for BKG Period IX.

Fig. 11a, 11b
 Example of stucco
 decoration from
 Period II: fragment
 of statue of Buddha:
 AKD 100; note the
 holes for the back
 assemblage)
 (photos by E. Loliva;
 courtesy ISMEO).



Concluding notes on some technical issues

Orientation (Fig. 20)

The orientation of the Main Stupa at Amluk-dara shows a slight difference of about 35° with astronomical N. The orientation can be explained if the planning of the stupa was performed at a time of the year after the Autumn Equinox, when the sunrise, at this latitude, is less than 40° to the ESE (Olivieri, 2018, p. 2).

Building process (Fig. 20)

On the basis of the available data, the dome of the Main Stupa at Amluk-dara was surmounted by a chattravali with at least 7 chattras. The biggest fragment was >7.50 m (diam.) and 0.34 m (thickness), the second



Fig. 12a, 12b
 Example of stucco and
 stucco/kanjur decoration
 from Period II: fragment
 of a spacer of chattravali?:
 AKD 166; part of the
 spacer of chattravali of a
 minor stupa: AKD 177a-b
 (photos by Aurangzeib
 Khan; courtesy ISMEO).



biggest – corresponding to a 1/8 sector - was 7.20 m (diam.) and 0.26 m (thickn.). Assuming a possible average specific weight of 25 g/dm³, these disks, once assembled, were extremely heavy (the biggest complete chattra (the second last one) (d 4.00 t 0.30) might have had a total weight of 9.5 tons). “Although the calculation is not precise, these figures can give some idea of the real order of magnitude. Even today lifting a large 9 tons piece of stone to a height of more than 30 m would be a challenging operation [...]. It is therefore hard to imagine that these almost impossible operations were performed from the bottom up. We do not have any kind of evidence, either direct or indirect, regarding the existence or the use of engineering machinery *yantra* or *machinae* in Gandhara” (Olivieri, 2018, pp. 13-14).
 The presence of rocky walls near Buddhist sacred areas (e.g. besides Am-

Fig. 13

Examples of architectural parts in kanjur (stuccoed): spacers, cornices, cyma-reversa false brackets, metopes (photo by L. M. Olivieri; courtesy ISMEO).

Fig. 14

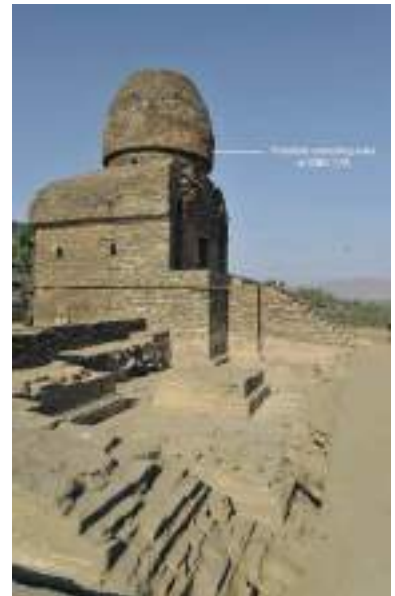
Possible sampling area of sample GBK 17A: Great Shrine (view from SSE) (photo by E. Loliva; courtesy ISMEO).

luk-dara, at Tokar-dara and Saidu Sharif I) might have been utilized for the erection of sloping ramps in order to reach the top of the stupa. The chatras could have been more easily dragged up there with a rope-winch. During the construction the rocky walls were quarried to obtain construction material, and the resulting space was used to house new constructions (as it was documented at Saidu Sharif I and Amluk-dara) (Olivieri, 2016).

The role of kanjur (Figs. 12, 13)

Schist is *the rock* of Swat, its petrographic and artistic signature. It was the main stone material quarried and used for architectural decoration and sculptures in Swat especially in 1st-3rd century CE (see references in Panuzi ed. 2015). On the other hand, *kanjur*, a limestone, is not a local stone. Therefore, we may guess that the shift to *kanjur* which is extensively documented after 3rd century CE at Amluk-dara and in other sites of Swat, implied a major change in the local economy. The appearance of *kanjur* might support the hypothesis that the local schist quarry areas of Swat were working “at an unusually very low pace for their standard, maybe just for the only surviving contemporary production”, i.e. the portable stela that are a typical 3rd century production in Swat (Olivieri, Filigenzi 2018, pp. 85).

Kanjur and stucco appear together in Swat. The shift to *kanjur*, for its rough and porous structure, implies a massive use of stucco modelling and finishing. Petrographic analyses of samples of both *kanjur* and stucco from Amluk-dara (Rosa et al., this issue) have proved that the two materials are chemically compatible, thus supporting the hypothesis that the stucco was largely obtained as a by-product of *kanjur* stone workmanship.



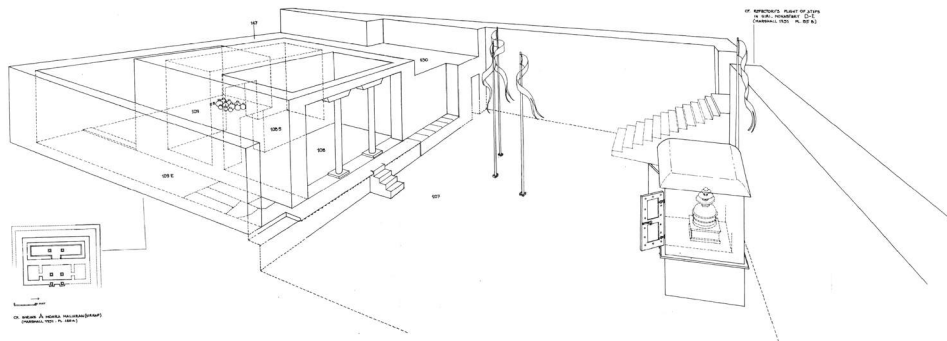


Fig. 15
Axonometry of Temple K and Court 107 (seen from NNE; drawings by F. Martore; courtesy ISMEO).

Vegetal and protein-based substances

The analysis presented in this Volume (Bonaduce et al., this issue) have shown that vegetal and protein-based resources were used to produce substances utilized as binder. One of these was collagen (animal glue). It was extracted from animal bones in late autumn (when weather is dry and cold, and it is more favorable for gelatinization). In late spring, after the end of the rainy season, when the weather is mild and dry, stucco was prepared. Various binders were then used to make the stucco and color layers more stable and weather resistant. The presence of egg (but not tragacanth gum, *Astragalus* sp., which grows also in Swat; see e.g. Humayun et al., 2005; Chaudhary et al., 2008) in the final layer of the stucco, suggests the hypothesis that the stucco surface was dry and smooth when color was applied. In this condition pigments needed to be mixed with a strong binder to adhere to the substratum.



Fig. 16
Court 107 and Shrine 1023 seen from ESE, from Temple K (photo by L. M. Olivieri; courtesy ISMEO).

Fig. 17

Elevation and plan of Shrine 1023 (drawings by F. Martore; courtesy ISMEO).

Fig. 18

Shrine 1023: first collapse (Period VII) (photo by L. M. Olivieri; courtesy ISMEO).

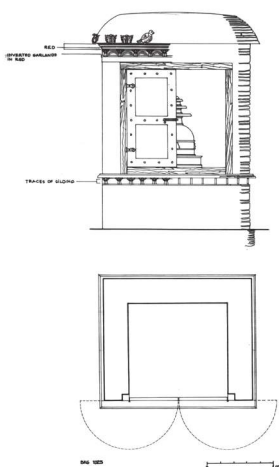
Fig. 19

Shrine 1023 in Court 107: final collapse phase (Period VIII) (photo by L.M. Olivieri; courtesy ISMEO).

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Fig. 20

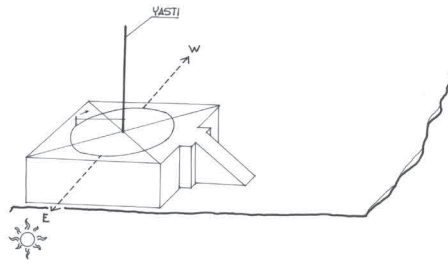
The building phases of the Main Stupa of AKD 1 (drawings by F. Martore; courtesy ISMEO).



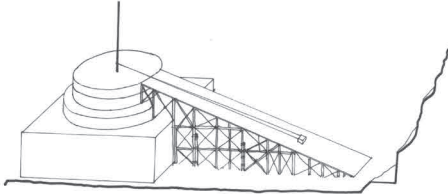
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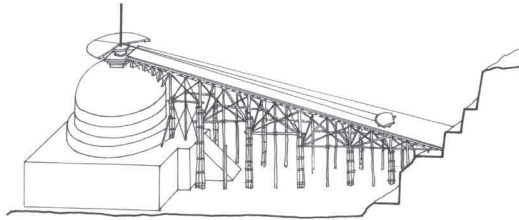




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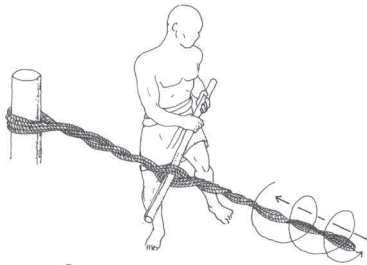


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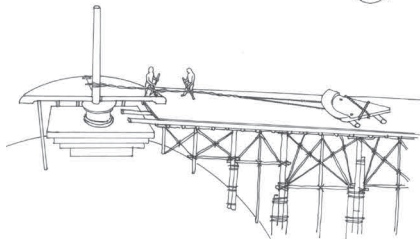
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Clays and colours: Tracking technologies and theories of vision in the ancient Buddhist art of Afghanistan

Giulia Forgione

University of Naples "L'Orientale"
Italian Archaeological Mission in Afghanistan

opposite page

Fig. 1
Tepe Narenj (Zone 14):
Buddha images showing
traces of restoration
with red clay.

¹ Sculptures reported as terracotta have turned out very often, in the light of archaeological and stratigraphic data, to be accidentally baked clay. However, the question whether a genuine terracotta sculpture ever existed, and how to unquestionably identify it as such, deserves the utmost attention, also in the light of the sculptures described as terracotta from the recent excavations of the sites of Mes Aynak (A.A.V.V., 2016, p. 127) and Taxila (Samad et al., 2017; Hameed et al., 2018).

² It is commonly understood that Gandhara art refers to a vast phenomenon of Buddhist art and architecture, which, although with important regional variations, comprises a far larger area than the homonymous historic region, embracing the territories included between present-day northwest Pakistan and eastern Afghanistan. Although conventionally linked to the Kushan period (1st-3rd cent. A.C.), its beginnings had already taken shape around the beginning of the 1st cent. A.C., during the Saka-Parthian period, while its last traces date at least from the 4th/5th cent. A.C.

Abstract

New, targeted and comparative studies are under way on clay sculptures recovered in Afghanistan, thanks to a collaborative project between the Italian Archaeological Mission in Afghanistan and the Archaeology Institute of Afghanistan. The specific target of the preliminary analyses are the sculptures from the Buddhist site of Tapa Sardar, which have been excavated between the 1960's and the 1970's by the Italian mission in the Ghazni area, and those, only partially published, that have been brought to light at Tepe Narenj, a site in the Kabul area under excavation since 2004 under the aegis of the Archaeology Institute of Afghanistan. Our aim is to analyse their physical, technical, stylistic and iconographic features, in order to identify patterns that might be associated to a coherent aesthetic system. This would be of fundamental importance to the understanding of the ideological frames of reference that shaped the art-making process in a period of great artistic vitality and innovations, which roughly spans the second half of the first millennium A.C.

Introduction

The use of pliable materials such as clay, stucco and, only in rare cases yet to be ascertained, of terracotta was central to the history of art of Afghanistan, and, broadly speaking, of Central Asian regions¹.

Around the 4th-5th century the use of clay, very often combined with stucco (a term used here in a conventional manner), predominated over stone (in particular schist and limestone), which apparently had long been the main medium of a refined Buddhist art known as art of Gandhara².

In particular, in the history of excavations, Afghanistan has yielded numerous clay artifacts, which, although sharing the same formal principles and the basic clay-sculpting skills, attest to a strong local character and a great experimentation of techniques and materials.

However, despite the considerable evidence, we still know very little about their material, technical, technological, iconographic and iconological aspects, as well as the aesthetic values of reference of this vast figurative repertoire.



Fig. 2
A bodhisattva image of
Late Period from Tapa
Sardar (TS 1500).



³ The corpus of the clay sculptures from the Tapa Sardar site has been entirely published on the portal *Buddhist and Islamic Archeological Data from Ghazni, Afghanistan. A Multidisciplinary Digital Archive for the Managing and Preservation of an Endangered Cultural Heritage*, <<http://ghazni.bradypus.net>> (03/19), to which I refer the reader for details on the materials not included in the illustrative section of this work.

The study of utilized materials and procedures is an essential key to understanding the known productions in relation not only to production contexts but also to original archaeological contexts. This makes it possible not only to simply identify the nature of the materials, but to investigate formal and ideological aspects of an aesthetic, iconographic and iconological nature, fundamental for reconstructing and interpreting unified figurative programmes.

The extensive documentation on the clay sculptures from Tapa Sardar³, which provide a high stratigraphic reliability (Taddei, 1968; Taddei and Verardi, 1978; Verardi and Parapatti, 2005), and the availability of accurate documentation on the sculptures found at the Tepe Narenj site (Paiman and Alram, 2013), in combination with preliminary studies already underway, have made it possible to reveal and analyse, in a scientific and comparative perspective, significant elements of the use of different clays and their original polychromy, of which they retain numerous though often minimal and scarcely considered traces.

Tapa Sardar and Tepe Narenj: observations on clays

At both the Tapa Sardar and Tepe Narenj sites, the use of different types of brown, yellow or red clay is attested, the red one being used above all for the more superficial layers of the modeling, especially during a relatively late phase of the life of the two sites, dating from around the end of the 7th century to the beginning of the 8th century.

Tapa Sardar's Late Period production is so far one of the most remarkable and well known. Made of red clay, it is datable from the end of the 7th century, based on archaeological data and stylistic comparisons with the sculptures of Fondukistan, a site excavated by DAFA in the 1930's, dated to post 689 A.C. on the basis of numismatic findings (Hackin et al., 1959, pp. 49-58). At Tepe Narenj, in addition to two types of production, distinguishable according to the colour of the clay (yellow or red), evident restorations done in antiquity with red clay of works originally made with yellow clay coated with one or more layers of stucco, underline the succession of two artistic phases and a stylistic change, in concomitance of which the use of red clay seems to become predominant (Fig. 1).

We do not yet know what motivated this phenomenon, already observed previously at Tapa Sardar, but the idea that aesthetic needs determined this change appears for the moment the most plausible. Both types of clay are widely available, for example, in the Kabul area, but it is clear that, from a certain point on, red clay became the preferred material at many sites in different regions.

At the same time there was a general renewal of artistic manifestations, expressed stylistically in a greater standardization of forms. It suffices to examine Tapa Sardar's Late Period sculptures (Fig. 2, 3; Filigenzi, 2009, fig. 3) and the Fondukistan figures, especially the bodhisattvas (Hackin et al., 1959, fig. 174, 175), in addition now to those from Tepe Narenj (Fig. 4; Paiman, 2013, pl. XXIII, b), to ascertain their notable formal affinity.



Fig. 3
A bodhisattva image
of Late Period from
Tapa Sardar (TS 1561).

There is a typical lengthening and thinning of the forms, visible even more in the shape of the torso, hands and feet, this last characterized by the second toe being longer than the others, a new or at any rate less pronounced element in the previous phase (Fig 5). Among their salient features are also a strong decorativism and geometric abstraction, which can be found especially in the faces and drapery, far from the almost naturalistic vision of the previous productions.

Recent experiments with the clays at Tepe Narenj, for restoration purposes, have been of great interest. They have revealed the reduced plastic and cohesive capacity of red clay, which proved to be more difficult to work with. This data was confirmed by the comparative chemical-physical analyses, which, by extending an already planned program for the activities of the Italian Archaeological Mission in Afghanistan, were carried out on some clay samples from both Tapa Sardar and Tepe Narenj.

The preliminary results of the analyses revealed, in addition to the presence of plant and mineral elements (data already familiar from other sites, see Fondukistan), generally employed to augment the compactness of the mixture, the use of vegetable glues in the red clay mixtures. The initial idea, now confirmed, is that the vegetable glue could increase not only the adhesiveness of the mixture itself, but also that of the coating layers, such as gilding or colour rendering.



Fig. 4
Tepe Narenj (Zone 14):
bodhisattva image in
pensive position
(to the right).

This also reinforces the hypothesis that their qualities, and therefore the need to satisfy certain aesthetic features, took precedence over the plastic qualities of the material used.

Polychromy and the non-naturalistic use of colour

Polychromy is one of the main aspects of visual language, especially of Buddhist art, in which colour does not have a simple decorative value but contributes to creating distinct iconographic types that reflect the intrinsic qualities of the characters represented and participate in transmitting specific 'philosophical,' moral and intellectual messages, which we are not always able to decode.

Moreover, the application of colour was the culmination of a true process of vivifying the image, realized according to detailed prescriptions, where nothing was left to chance. Hence there was an undeniably strong magical, symbolic value of images created according to established codes.

However, we still know very little about the use of colour, both because the evidence is fragmentary and because the traces are not always visible to the naked eye or systematically documented. The question becomes even more delicate when we come upon a non-naturalistic use of colour, in which we can also classify the very common practice of gilding.

The non-naturalistic use of colour, especially red, has already been report-

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Fig. 5
Tepe Narenj (Zone 14):
bodhisattva image, detail

Fig. 6
Head with traces of red
paint on the face from
Tapa Sardar (TS 1831).

Fig. 7
Head with traces of red
paint and gold leaf on the
hair and on the face from
Tapa Sardar (TS 1870)

ed several times in the history of studies on the art of Afghanistan, for example at Tapa Sardar, where the red appears to have been used on the face (TS 1831, Fig. 6; other examples are: TS 1869, TS 1872), on the hair (TS 1870, Fig. 7, see also TS 1868) or to outline the eyebrows (Verardi, 1983, p. 489) of Buddha or divinity figures, or at Bamiyan, for the hair (Hackin, 1933, 51 no. 30, fig. 77). In these instances, however, with the exception of the eyebrows, it could be the bolus, a very liquid red clay mixture, with adhesive capacity, which was spread on the body of the figure to enable to adhere and to enhance the gilding.

At Tapa Sardar this became a dominant feature starting from Early Period 2, at the turn of the 5th century, as attested by the Niche 76 sculptures, which still retain traces of gilding (Fig. 8; Verardi and Parapatti, 2005, pp. 415-416), and by numerous ancient restoration interventions that adapted part of the original iconographic programmes to the new concept of the sanctuary. Many sculptures of the ancient phase (Early Period 1), usually made of yellow clay and covered with a white surface layer (defined as lime milk, but whose composition needs to be ascertained; see Verardi, 1983, p. 490), in fact preserve the visible traces of a second white coating, covered in turn by a red layer (Fig. 9; Verardi, 1983, fig. 30).

Even at Tepe Narenj some heads retain traces of red colour on their faces (Fig. 10, 11), in all likelihood also in this instance the bolus. More explicit gilding remnants were found on the drapery of a Buddha or bodhisattva



Fig. 8
Tapa Sardar: Niche 76.
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opposite page

Fig. 9
Head with traces of
ancient restoration from
Tapa Sardar (TS 1869).

Fig. 10
Head with traces of red
paint on the face from
Tepe Narenj.

Fig. 11
Head with traces of red
paint on the face from
Tepe Narenj.

Fig. 12
Head with traces of red
paint on the face and
blue paint on the hair
from Tepe Narenj.

Fig. 13
Head with traces of blue
paint on the hair and
on the eye outline from
Tepe Narenj.

figure, part of a set of figures that surrounded the inner perimeter of a hall or porticoed courtyard (Paiman, 2013, 71 no. 12).

Another example from Tepe Narenj shows traces of red colour on the face in conjunction with the traces of blue on the hair (Fig. 12).

The non-naturalistic use of blue is particularly documented at the Tepe Narenj site, both for the hair and to outline the eyes, above all of the Buddha figures in yellow clay coated with one or more layers of stucco (Fig. 13, 14), dating from the end of 484 A.C., based on numismatic findings; the presence of the same elements on a donor figure remains to be verified.

We do not yet have chemical-physical analyses that confirm whether the blue is the original colour or a degraded black, but, as emerges from a preliminary comparison with other productions, the seemingly incongruous use of blue appears to be very common in clay sculptures, as well as in other media.

It is hard to say whether even in the Gandharan stone tradition we can speak of a non-naturalistic use of blue, due to the fragmentary nature of the evidence. What is certain is that this feature, never highlighted or analysed in its symbolic meaning by previous studies and only recently brought to our attention (Filigenzi, in collaboration with Paiman and Al-ram, in press), seems to mark a powerful innovation, already introduced with the first clay experiments.

An example is the bodhisattva from Tepe Maranjan, found in the 1930's and now housed in the Kabul National Museum, assigned by recent studies to the 4th century *ca.* (Kuwayama, 1991; Filigenzi, 2010). Despite the damage suffered and modern restorations, the figure still retains traces of its blue colour, already reported by the excavators, to highlight the eye outline (Fig. 15; Hackin et al., 1959, 10, fig. 7-9).





In the Hadda production too, especially on the lower eyelid line of a bodhisattva head, now kept in the Musée Guimet storerooms (Inv. MG 26837), traces of blue are preserved, recently identified thanks to an inspection by the director of the Italian Archaeological Mission in Afghanistan, Anna Filigenzi, and the generous collaboration of Pierre Cambon, chief conservator of the Musée Guimet.

Clear traces of never reported blue are preserved on the hair of the figures found at the Fondukistan site, some of them now kept at the Musée Guimet, especially a Buddha *paré* figure, a seated Buddha and two *nāga* princes, found in the Niche D (Hackin, 1940, fig. 16-18; Hackin et al., 1959, fig. 171, 172, 174).

At Tapa Sardar, even if there are no conspicuous traces, this particular use of blue cannot be excluded. Some of the statues, because of possible contact with the fire, which may have altered the original colours, need to be verified; among these we can list some heads, namely from Vihāra 17 (TS 574, TS 867, TS 1029), which housed the figure of a colossal Maitreya Buddha against the wall opposite the entrance, flanked by bodhisattva figures and other characters, and by rows of Buddhas under arches with attending deities on the side walls, from Vihāra 37 (TS 1272, TS 1500), from Vihāra 23 (TS 1145?), and a head of which we only have excavation photos (Fig. 16). In addition to these mention can be made of fragments of wall paintings found in Room 52, where we see a Buddha in three quarter view, with likely traces of blue on the eye outline (Silvi Antonini, Taddei, 1981, fig. 5) or bodhisattva figures with what seems blue hair (Fig. 17; Silvi Antonini, Taddei, 1981, fig. 2, 3).

The site that yielded the most representative specimens is Mes Aynak, where the extraordinary preservation of polychromy confirms that the blue was used here in a very marked way both to outline the Buddhas' eyes and those of the faithful who looked on him, and to highlight their hair (Engel, 2011, pp. 37, 46-47; AAVV, 2013, p. 132; AAVV, 2016, p. 184). The surviving evidence shows that the non-naturalistic use of blue is also combined with gilding.



Fig. 14
Head with traces of blue
paint on the eye outline
from Tepe Narenj.

The recurrence of this iconographic feature (with its iconological meaning) is therefore attested starting from the most ancient phases of clay sculpture, up to the most recent productions, such as that of Fondukistan. This fact is important because it suggests that the non-naturalistic use of blue becomes, at a certain point, a true *topos*, not only in sculpture but also in painting, and over a vast area.

The use of blue colour to outline eyes is also sporadically reported in the literature about Bamiyan, but not documented by specific photos (Hackin, 1933, 50 no. 20; Klimburg-Salter, 1989, pp. 192, 195, pl XLI, fig. 48), while clear evidence can be found also in the pictorial productions of Xinjiang, in particular in Qizil (examples in Herbert, Yaldiz, 1982, pp. 82-97).

These data forcefully suggest the association of blue with notions of peace and purity as constitutive features of the Buddha's appearance, but also with the transfiguring power of divinity and its contemplation, which is reflected in the eyes of the faithful. This is explained in the context of Buddhist speculation on the symbolism of light and on the *darśan* (vi-





Fig. 15
The bodhisattva from Tepe Maranjan: detail of the traces of blue paint on the eye outline.

sion, contemplation), where attention to the eyes and the concept of colour have fundamental value (Filigenzi, in collaboration with Paiman and Alram, in press).

We therefore begin to see a continuous enrichment of the iconographic repertoire, which, in addition to incorporating traditional models, uses new contributions from local tradition and a vigorous experimentation of techniques and materials, which led to the creation of new artistic codes, inherent to specific philosophical and religious concepts.

With clay sculpture and the possibilities offered by plastic materials, some themes and aspects seem to be more prominent, for example gigantism, gilding, and the luminous, transcendent aspect of Buddha's nature.

It is therefore essential to probe this topic through programmed, comparative studies, with the aid of chemical-physical analyses aimed at solving open issues and lacunae, starting from the vast scientific documentation available, to shed light on problems that also concern less documented sites, from an archaeological point of view, such as Mes Aynak.

Acknowledgments

Special thanks go to Anna Filigenzi, director of the Italian Archaeological Mission in Afghanistan and to Zafar Paiman, director of the Tepe Narenj excavation, who made this work possible. Also, on behalf of the Italian Archaeological Mission in Afghanistan, I would like to thank Pierre Cambon, chief conservator of the Musée Guimet for his collaborative support to our enquiry into colours. Photos nos. 1, 4-5, 10-15: copyright Zafar Paiman, in particular photo

n. 15 taken at the Kabul Museum. Photos nos. 2-3, 6-9, 16-17: copyright Italian Archaeological Mission in Afghanistan. The remaining photos are copyrighted by the Italian Archaeological Mission in Afghanistan.

Fig. 16
Head with traces of
blue paint on the hair
from Tapa Sardar.



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Sardar (TS 1800).

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Collections gandhariennes et afghanes à Paris, Musée national des arts asiatiques-Guimet

Pierre Cambon

Conservateur en chef,
Musée national des arts
asiatiques-Guimet

opposite page

Fig. 1
Maitreya debout,
Schiste, Art du
Gandhara, actuel
Pakistan, 1^{er} – 3^{ème}
s., Mission Alfred
Foucher, 1896-1897,
Musée National
des Arts asiatiques-
Guimet, AO 2908,
photo Thierry
Ollivier.

Abstract

Les collections de Paris occupent une position singulière en Europe parce qu'elles font le lien entre les collections anglaises, ou bien encore allemandes, largement gandhariennes, au sens de Peshawar (Londres, British Museum; Berlin, Museum für Asiatische Kunst), et les collections italiennes, qui, elles, renvoient généralement au Swat (Rome, Museo Nazionale d'Arte Orientale «Giuseppe Tucci», maintenant fusionné dans le Museo delle Civiltà).

Gandhara (Cambon 2010)

Le fonds premier des collections de Paris renvoie à la mission d'Alfred Foucher sur la frontière indo-afghane, en 1896-1897, quand il étudie l'art indien, dans le sous-continent, sous mandat britannique, au temps de l'*Archaeological Survey of India*. L'intérêt de cette mission est de rapporter à Paris une centaine de fragments avec quelques statues, dont l'origine est très souvent donnée. Ceux-ci sont d'abord attribués au Louvre, où ils sont présentés au Département des Antiquités Orientales, ce qui est symptomatique de la vision de l'époque – le Gandhara comme prolongement à l'Est de l'art gréco-romain (Foucher 1900, Migeon 1929).

Ce sont ces reliefs et ces quelques sculptures qui illustrent la thèse d'Alfred Foucher sur l'art gréco-bouddhique du Gandhara, dont le 1^{er} volume paraît en 1905, avec les collections du musée de Lahore (Foucher 1905-1951). Ils y sont donnés comme collection du Louvre. Ce fonds ne sera versé au musée Guimet qu'après 1945, dans le cadre de la redéfinition du déploiement des collections entre les deux institutions. Il renvoie essentiellement à la région de Peshawar, avec la fouille de Shahbaz-garhi dont provient le bodhisattva aux allures de maharaja ou bien de prince indien, mais dont l'aurole est rehaussée par des rubans qui flottent dans le vent, à la manière du diadème des Grecs, et dont la bouffette de turban s'orne d'une transcription à l'indienne du rapt de Ganymède par Zeus, traduit ici par l'enlèvement d'une *nagini* par l'oiseau Garuda. Au collier brahmanique, répond le torque et les bijoux de bras incrustés de pierres semi-précieuses, le collier



Fig. 2
Bas-relief avec
scènes de la vie du
Buddha, sommeil
des femmes et grand
départ, Schiste, Art
du Gandhara, actuel
Pakistan, 1^{er} - 3^{ème}
s., Buner, Mission
Alfred Foucher, 1896-
1897, Musée National
des Arts asiatiques-
Guimet, AO 2956,
photo Thierry
Ollivier.

où sont représentés deux *putti* affrontés, que l'on retrouve aussi à la base du turban, les pendentifs en forme de léogriphes, voire des sandales à la grecque avec masque de lion. Bref, une sculpture de tout premier plan, où l'éclectisme des références correspond parfaitement à l'approche de Foucher, pour qui le Gandhara est l'art de la rencontre entre Inde et méditerranée, sur fond d'apport des steppes, voire aussi comme l'avait dit Emile Sénart, et ce bien avant lui, de l'Orient hellénisé.

A côté existent des morceaux de reliefs provenant de Ranigat ou bien de Charsadda, mais également du Buner et du Swat, où Alfred Foucher fait une brève incursion en franchissant la passe de Malakand. Tout ce fond majoritairement de schiste, quelques plâtres mis à part provenant de Shahbaz-garhi, apparaît parfaitement homogène sur le plan de la structure des pierres, comme l'analyse l'a montré - les reliefs du Swat mis à part, dont la composition témoigne d'une histoire géologique complètement différente, même si sur le plan formel, tous les reliefs relèvent du style du Gandhara dans sa facture la plus classique, l'école de Peshawar. Renvoyant à ce fond Foucher, mérite aussi d'être citée une statue de Maitreya debout, au charme adolescent et portant l'auréole, le vase à eau à la main, même si sa provenance n'apparaît pas donnée. De taille plus petite que le bodhisattva de Shahbaz-garhi, elle est l'un des très rares exemples de statues gandhariennes en ronde-bosse, puisque le revers est sculpté et les





Fig. 3
Eléphant, Schiste, Art
du Gandhara, actuel
Pakistan, 1^{er} – 3^{ème} s.,
Don de M. et Mme
Georges Frémont,
1996, Musée
National des Arts
asiatiques-Guimet,
MA 6295, photo
Thierry Ollivier.

plis du drapé parfaitement suggérés, même en l'absence de tout relief ou bien de tout volume. Se dressant sur un piédestal, orné d'un motif harmonieux de lotus à quatre pétales, dessinés avec élégance, que l'on retrouve sur d'autres sculptures du musée de Lahore, elle renvoie peut-être aux premiers développements de l'art du Gandhara, encore influencé par un modèle de type hellénisant (Fig. 1, 2, 3).

Kapisa

En 1921, Alfred Foucher qui poursuit alors ses recherches en Inde, aux temps de l'*Archaeological Survey of India*, avec Sir John Marshall, est contacté par Philippe Berthelot, secrétaire général au Ministère français des Affaires étrangères, pour être envoyé en mission à Kabul. Une fois sur place, il pose les bases de l'accord de coopération, entre les deux pays, signé en 1922, qui fonde la DAFA (Délégation Archéologique Française en Afghanistan) et accorde à la France le monopole des fouilles en Afghanistan pendant une période de trente ans (clause qui sera levée en 1945), tout en lui concédant un partage des trouvailles, les pièces exceptionnelles mises à part (clause qui va durer jusqu'à la suspension des accords en 1982)¹. Alfred Foucher pendant son séjour en Afghanistan explore les environs de Kabul, fait les premiers sondages sur le site de Hadda, visite le Kapisa et la ville de Begram, et plus tard la vallée de Bamiyan, posant les jalons du programme de recherche que va développer la DAFA dans les années 1930, - cela avant d'aller lui-même fouiller à Balkh, où Joseph Hackin le rejoint, le temps d'une campagne, avant de devenir plus tard le directeur sur le terrain de la DAFA *de facto*, parallèlement à son poste de directeur au Musée Guimet à Paris.

¹ Auboyer 1968; Allchin, Hammond 1987; Cambon 2012, Cambon (ed.) 2002.

Fig. 4
Le grand miracle de Sravasti, schiste, site de Païtava, école du Kapisa, Afghanistan, 3^{ème} - 4^{ème} s., Mission Joseph Hackin, 1924, Musée National des Arts asiatiques-Guimet, MG 17478, photo Thierry Ollivier.

opposite page

Fig. 5
La légende de Dipankaa, l'offrande de l'étudiant Megha, schiste, site de Shotorak, école du Kapisa, Afghanistan, 3^{ème} - 4^{ème} s., fouilles de Jacques Meunié, 1937, Musée National des Arts asiatiques-Guimet, MG 21148, photo Thierry Ollivier.



² La 1^{ère} stèle en schiste, de style gandharien, à être publiée dans le *Journal of Asiatic Society of Bengale*, en 1834 (Calcutta, Vol. III, pl. XXVI), provient de fouilles effectuées à Kabul et montre un Buddha assis et méditant sur un fond d'auréole, des flammes sortant de ses épaules.

³ "Vendredi 12 décembre// Samedi 13 décembre. Visite à Païtâvâ avec Gholam Mohammed Khan et Gholam Moyeddine Khan, visite du teppeh où G.M. a trouvé des bas-reliefs gréco-bouddhiques. Fouilles faciles avec main-d'œuvre abondante. Jusqu'au bout, cependant, c'est l'incertitude, car le propriétaire du champ a gros appétit// Dimanche 14 décembre// Lundi 15 décembre. Préparatifs de départ pour Païtâvâ// Mardi 16 décembre. Faux départ// Mercredi 17 décembre. Départ pour Païtâvâ, sous la neige, arrivée et interminable discussion de 3 h. à 8 heures avec le propriétaire du teppeh où nous devons fouiller; quelle singulière mentalité; on rédige des projets de contrat qui déclinent les amendements les plus abracadabrants et on conclut enfin sur la base proposée au début: 600 roupies kaboulies; nous pourrions donc commencer demain. Remarque que les discussions sont coupées par

C'est au cours de cette première mission en Afghanistan que Joseph Hackin, en revenant de Balkh, reprend le site de Païtava en 1924 (Hackin 1925-1926 ; Cambon 1986, Id. 1996), où avait été découverte dix ans auparavant, une stèle au grand miracle, en schiste, par les équipes afghanes du musée de Kabul. Celle-ci est aujourd'hui à Berlin, la pièce ayant été donnée en cadeau officiel par le roi d'Afghanistan, Amanullah, lors de son voyage en Europe, en 1929. Le site de Païtava, sur la route de Begram, renvoie au Kapisa et montre la diffusion en territoire afghan de l'art du Gandhara, à une époque relativement tardive (3^{ème} - 4^{ème} siècle). Le style est différent de celui de Peshawar, plus hiératique et raide; les thèmes également, qui témoignent d'une influence visible des confins iraniens, avec ce motif de

flammes sortant des épaules du Buddha²; le matériau enfin se distingue pareillement de celui utilisé dans l'art du Gandhara, le schiste étant plus vert, d'une extrême dureté, très différent dans sa morphologie de l'aspect lisse des schistes de Peshawar, dont le coloris gris est parfois très légèrement bleuté et qui semble plus friable (Cambon [avec Leclaire] 1999). Il est très éloigné aussi des schistes de la vallée du Swat, à la structure interne beaucoup plus chaotique. La fouille de la fondation bouddhique de Païtava, témoin d'un ancien monastère, se fait en plein hiver, à 2.000 mètres d'altitude. Le carnet de Joseph Hackin relate la découverte majeure de cet exercice, soit une deuxième stèle au grand miracle, sur le modèle de la stèle précédente³.

Ce thème du grand miracle de Sravasti, où le Buddha s'élève dans les airs pour convaincre les maîtres hérétiques, l'eau s'échappant de ses pieds, les flammes de ses épaules, paraît très en faveur au Kapisa, quand il n'est que très peu évoqué dans l'art du Gandhara, sans jamais prendre les dimensions monumentales que celui-ci va prendre dans la région de Begram, avec notamment la statue de Sarai Khwaja. Une stèle quasiment de même type et de même facture que celles trouvées à Païtava, et d'une taille identique, sera mise à jour plus tard lors des fouilles du monastère de Shotorak, en 1937, même si celle-ci n'est pas illustrée dans la publication. Elle est pourtant au musée de Kabul, suggérant peut-être la présence d'un atelier local, tant les trois stèles apparaissent similaires⁴. Des exemples à la taille beaucoup plus imposante et de date sans doute plus tardive, existent également au musée de Kabul, montrant par l'influence indienne de style post-gupta très nettement visible, la popularité du thème sur une longue période, dans cette région frontière aux confins de l'Iran (Fig. 4, 5).

Hadda

Mais, la grande affaire des années 1920 sera le site de Hadda où Jules Barthoux dès 1926 prit le relais d'Alfred Foucher (Foucher 1929 ; Barthoux 1930, Id. 1933 ; Cambon 2004, Id. 2016). Le site est éloigné du pouvoir central et rongé par le fondamentalisme local. Les premières statues mises au jour sont détruites par le village voisin. Mais Jules Barthoux n'en continue pas moins sous la protection de l'armée les fouilles du monastère de Tapa-kalan en 1927, enchaînant par la suite avec les monastères de Bagh Gaï, de Chakhil-i-ghoundi, de Tapa-i-kafariha, sans oublier Gar-nao, Prates ou Deh-ghoundi, et cela en l'espace de deux ans, 1926-1928. Le site est en effet d'une extrême richesse comme en avaient témoigné les pèlerins chinois, et notamment Xuanzang qui situe là la rencontre du futur Buddha Sakyamuni et de Dipankara, l'un des Buddha du passé. Dès le début du 19^{ème} siècle, un aventurier comme Charles Masson avait reconnu les lieux, effectuant les tous premiers sondages des stupas, qu'il prenait pour des tombes (Mason 1841). L'illustre aussi plus tard la reprise des fouilles, dans les années 1960, par l'Institut archéologique afghan, avec le monastère de Tapa Shotor (fouilles de S. Mustamindi, poursuivies par la suite par Zémariyalai Tarzi).



des diversions sans liens logiques avec la préoccupation dominante, puis on revient au sujet. Quels ergoteurs// Jeudi 18 décembre. Nous commençons à 8 h 45, tracé rapide et les hommes au nombre de cinquante se mettent au travail; bons travailleurs; nous découvrons immédiatement des jarres énormes: 2 m 70 de tour, 1 m 20 de hauteur, rien d'autre. Gholam Moyeddine fonde les plus beaux espoirs sur Pâitâvâ – teppeh. Je suis moins enthousiaste// Vendredi 19 décembre. Trouvailles insignifiantes. G.M. témoigne d'une juvénile ardeur ; nous trouvons de nouvelles jarres// Samedi 20 décembre. La matinée est signalée par la première trouvaille, un petit génie, sans doute l'un des enfants de l'ogresse Hâriti ; la face poupine apparaît tout d'abord encastrée dans la terre compacte (couche terreuse compacte). Puis apparaissent les détails du corps. Un peu plus tard, on découvre une tête de Buddha et enfin, à 3 h et demie, la pièce de résistance, un Buddha au grand miracle. Il apparaît neuf et tout doré ; la face tout d'abord dégagée étincelle face au soleil à son déclin. C'est la belle lumière d'or dont la légende embellit l'image du Bienheureux. Mais le prestige s'évanouit, car, très rapidement, les feuilles d'or disparaissent, s'écaillent. Rush autour de nous ; le mollah s'empresse et nous aide// Dimanche 22 [sic] décembre. Découverte de soubassement// Lundi 23 [sic] décembre. Retour à Kâbou. " (Joseph Hackin, *journal, mission 1924*, Archives musée Guimet).

⁴ Meunié 1942 : 49, N° 93, H. 85 ; Larg. 31 cm.

Fig. 6
Escalier de la
plateforme du
stupa C 1, calcaire,
monastère de
Chakhil-i-ghoundi,
Site de Hadda,
Afghanistan, 1er –
3ème s., fouilles de
Jules Barthoux, 1928,
Musée National
des Arts asiatiques-
Guimet, MG 17191*,
photo Thierry
Ollivier.

opposite page

Fig. 7
Base du stupa K 20,
calcaire, monastère
de Tapa-i-kafariha,
Site de Hadda,
Afghanistan, 1er –
3ème s., fouilles de
Jules Barthoux, 1928,
Musée National
des Arts asiatiques-
Guimet, MG 17217*,
photo Thierry
Ollivier.

Le site de Hadda fut la révélation d'un art du stuc gréco-afghan, un art du modelage qui apparaît bien plus hellénisant que les reliefs de schiste de l'art du Gandhara, même s'il semble plus tardif et dater de la dernière phase de la période Kouchane (1^{er} – 4^{ème} s.), voire de l'époque des Chionites-Hephtalites (5^{ème} - 6^{ème} s.). L'occupation est en effet très longue, du 1^{er} jusqu'au 7^{ème} s., offrant un panorama général de la diffusion de l'art du Gandhara venu de Peshawar et des différents aspects qu'elle prend successivement, dans le courant des siècles. A côté du stuc, ou bien de la terre crue – massivement représenté à Tapa-kalan dans un cas et dans l'autre à Tapa-i-kafariha -, existent également des schistes, strictement de même style et de même facture, de même composition aussi, que les exemples du Gandhara, ressemblance qui n'est pas simplement formelle, mais aussi structurelle, puisque la pierre à l'analyse s'avère être la même. Existe aussi le calcaire représenté notamment à Tapa-i-kafariha, à côté du stuc, de la terre et du schiste, mais qu'on trouve aussi à Chakhil-i-ghoundi sur un mode différent et peut-être plus ancien, un calcaire qu'illustre avec élégance la tête de *Salabhanjika* provenant de Tapa-i-kafariha, dont la polychromie est restée dans tout son éclat et dans toute sa fraîcheur – soit une extraordinaire diversité de matériaux dont la palette semble bien plus large qu'au Gandhara lui-même et qui témoigne visiblement d'une évolution dans le temps.

L'intérêt des collections de Paris est enfin que ces collections de Hadda sont restées bien souvent dans l'état d'origine, celui du terrain de la fouille – mis à part les pièces prélevées en réserve par Joseph Hackin, alors conservateur, pour ouvrir la première galerie afghane, inaugurée au musée au tout début de 1929. Si celles-ci parfois ont été 'nettoyées' un peu abusivement, selon les critères d'aujourd'hui, certaines toutefois ont su garder leurs couleurs initiales, comme la base de stupa en calcaire du monastère de Tapa-i-kafariha - une base ponctuée d'éléphants en saillie, le cornac sur le dos,





opposite page

Fig. 8

Tête féminine,
Salabhanjika,
calcaire, monastère
de Tapa-i-kafariha,
Site de Hadda,
Afghanistan, 1^{er} – 3^{ème}
s., fouilles de Jules
Barthoux, 1928,
Musée National des
Arts asiatiques -
Guimet, MG 17203,
photo Thierry
Ollivier.

entre des panneaux à décor d'atlantes classicisants et de pilastres à chapiteaux néo-corinthiens sur le mode asiatique – soit tout un programme décoratif qui semble la transcription exacte de ce qu'on trouve en schiste en terre de Gandhara, à Shahri-bahlol par exemple. On mentionnera d'ailleurs la présence de peintures à Bagh-gai, parfaitement conservées, qui au vu des analyses s'avèrent être peintes à la fresque, le rouge utilisé correspondant à une ocre rouge, le bleu à du lapis-lazuli, le noir à un pigment à base de noir de charbon (Figg. 6, 7, 8).

Fondukistan

La fin de l'art bouddhique en territoire afghan est illustrée par la fouille du petit monastère de Fondukistan, sur la route de Bamiyan (dont les dimensions ne sont pas données dans la publication, sans doute par suite d'un oubli), et dont les collections ont été partagées scrupuleusement entre le musée de Kabul et celui de Paris (Hackin 1940 ; Hackin et al. 1959)⁵. La fouille menée par Jean Carl, en 1937, parallèle à celle du site de Begram, qui révèle la même année la première chambre du 'trésor', dégage au cœur du monastère une cour carrée qu'occupe le stupa principal. Sur celle-ci s'ouvrent des niches sur les quatre côtés, avec tout un décor de terre, modelé dans les trois dimensions, ou plus exactement allant du bas au haut-relief, voire à la quasi ronde-bosse, à la manière d'un décor de théâtre ⁶. Entre, des restes de peinture, dont Jean Carl a fait quelques copies (Maitreya, les dieux lunaire et solaire). Le programme voit ainsi dans la niche C un buddha trônant, flanqué de chaque côté, par un Buddha à la pose très souple, évoqué de trois – quart, tout en faisant le geste de l'*abhayamudra*; dans la niche D, un Buddha, portant sur les épaules le camail à trois pointes, assis sur un lotus qui sort d'un bassin, où paraissent deux nagas à mi-corps ; dans la niche E, un couple de donateurs, représentés dans la pose du délasserment royal, la princesse dénudée à l'indienne, le prince vêtu à la sogdienne.

Témoin d'une sophistication croissante qui annonce les bronzes du Swat et plus tard du Cachemire, Fondukistan témoigne d'une esthétique nouvelle, une esthétique au canon allongé, à la tête très petite, aux silhouettes longilignes, à la ligne fluide, non sans préciosité, aux gestes affectés, quasiment maniéristes, qui joue la grâce ou bien la séduction, et dont l'écho se retrouve sur les peintures murales dans la vallée de Bamiyan. Les statues ici ont gardé toute leur polychromie dont les teintes jouent du bleu, du rouge ou bien du noir. L'approche est différente de celle qui se voit dans les fondations de Hadda, où la couleur n'est là que pour mieux souligner le modelé, de façon incidente. Fondukistan souligne ainsi le chemin parcouru depuis le Gandhara et la vallée du Swat, où les reliefs sont massivement en schiste, un schiste qu'on retrouve au Kapisa, mais décliné un peu différemment et qui peut-être était parfois doré, quand il n'était pas peint (exemple de Mes Aynak), le chemin parcouru du schiste à la terre crue, annonçant la manière du Xinjiang, où la polychromie touche l'image dans sa globalité, avec ses couleurs crues, à la gamme très vive, dénuée de toute réalité (oasis de Turfan).

⁵ L'article de Joseph Hackin (Le monastère bouddhique de Fondukistan (fouilles de J. Carl, 1937), in Hackin et al. 1959 : 49-58) reprend en fait un papier qu'il publie en anglais (Hackin 1940). Il est agrémenté ici d'un plan, d'après un dessin schématique de Jean Carl, sans toutefois comporter d'orientation, ou bien de dimensions. D'après le croquis de Carl, dans son journal de fouille (Archives, Musée Guimet), les niches C, D, E qui occupent le mur Est mesurent respectivement en largeur 1 m 15, 1 m 15, 1 m 20 ; les niches K, L, J, qui, elles, agrémentent le mur sud, 0 m 75, 0 m 70, 0 m 85, avec en plus, sur cette paroi, la présence d'une porte d'entrée qui donne sur la cour, d'1 m 30 de large – soit en tenant compte de l'aération entre les différentes niches, une cour au stupa de plan carré, d'environ 4 m 50 sur 4 m 50.

⁶ "Chaque cellule individuelle était une combinaison de peinture et de sculpture, le fond peint étant un prolongement et un décor pour les groupes de statues, en une sorte de tableau vivant bouddhique ou de trompe-l'œil stéréoscopique des régions célestes." (Rowland 1974 : 108).



Fig. 9
 Buddha assis en
 délassement royal,
 terre, Monastère de
 Fondukistan, niche
 C, Afghanistan,
 6^{ème} – 7^{ème} s., fouilles
 de Jean Carl, 1937,
 Musée National
 des Arts asiatiques-
 Guimet, MG 18970,
 photo Thierry
 Ollivier.



Fondukistan, tout comme Tapa Sardar, témoigne d'un art de la terre crue qui semble faire suite aux modelages en stuc et dater largement de l'époque Hephtalite (6^{ème} – 7^{ème} s.). Les connexions avec Bamiyan ne portent pas seulement sur l'iconographie, mais aussi sur la palette des couleurs retenues, aux harmonies très vives, à base de tons primaires, posées largement en à-plat - et l'atmosphère qu'elle suggère visuellement. Certains coloris sont privilégiés à Fondukistan, sur la chevelure des figures ou le man-

teau monastique, les mêmes que l'on retrouve en arrière-plan, dans l'évocation du fameux 'roi chasseur' du site de Kakrak, qui porte la couronne, ornée des trois croissants ⁷. Le réalisme des Buddha de Hadda aux yeux d'un bleu très sombre, à la chevelure noire, bordé d'un très fin liseré rouge, avec délicatesse, laisse place dès lors à un monde merveilleux, quasiment irréel, où le sauveur bouddhique prend des allures de prince, au charme très aristocratique, et aux boucles bleutées (Fig. 9).

Conclusion

Les analyses réalisées en 2016 confirment le rapport de fouille de 1924. Les reliefs du Kapisa étaient dorés, que ce soit à Païtava, ou bien à Shotorak, quand ils n'étaient pas peints, comme c'est le cas à Mes Aynak. La période semble la même et le style identique. Ils témoignent d'une phase kouchane tardive de l'art du Gandhara, aux frontières de l'Iran, une phase koushano-sassanide ou même post-kouchane, qui annonce déjà celle des Hephthalites, sous couvert des Turcs Occidentaux. Fondukistan illustre le chapitre suivant qui ouvre sur l'Asie Centrale, le Swat et l'art himalayen, les derniers feux de l'art bouddhique en territoire afghan. Bamiyan, alors, se retrouve au carrefour de ces multiples routes, et prend une importance croissante, entre le monde indien et celui du Xinjiang, et là aussi, au dire des pèlerins chinois, et notamment Xuanzang, les icônes monumentales, sculptées dans la falaise, paraissent avoir été dorées. Reste le problème du Gandhara et celui de Hadda, puisqu'il s'agit de la période d'avant le Kapisa, même si Hadda déborde très largement la phase classique du style de Peshawar, faisant le lien entre le Kapisa et certains sites, comme Shahri Bahlol, dans les reliefs ou les stèles en calcaire du monastère de Tapa-i-kafariha, mais évoquant aussi les peintures de Bamiyan, dans certains stucs venant du même complexe.

Qu'en est-il exactement du rapport entre schiste et peinture dans l'ancien Gandhara? A Hadda, la polychromie des stucs reste naturaliste, à Bagh Gai notamment; elle est aussi de type minimaliste, rehaussant simplement le modelé à la marge, pour lui donner un aspect au plus près du réel. Si la chevelure est peinte en noir, ou le vêtement en rouge, pour ce qui est des Buddha, les yeux, dont l'iris est marqué, sont soulignés de manière très légère par le trait des sourcils et la bouche indiquée par la couleur des lèvres, de façon naturelle. La différence est grande avec Fondukistan où la polychromie joue sur un monde hors du temps, où les couleurs bien souvent arbitraires confèrent à l'image un statut différent. La question se pose donc de l'approche retenue à Peshawar, en fonction des époques, pour ce qui est du schiste. Est-ce la même que celle du Kapisa, qui préfigure Bamiyan ou bien Fondukistan? A la manière de l'interprétation actuelle des frises du Parthénon, à la période classique. Ou s'en distingue-t-elle par une gamme de couleur différente, une démarche réaliste, sur le mode de Hadda, et des couleurs moins vives. Y a-t-il évolution chronologique, au sens stylistique? Différence régionale? Ou simple '*distinguo*' entre les matériaux, dès lors qu'il s'agit de la pierre ou du stuc?

⁷ Hackin 1933 : 62-63, pl. LXIV.

A relire Xuanzang, en tout cas, la peinture n'est pas étrangère à la pierre puisqu'il mentionne très explicitement une image peinte du Buddha sur le stupa de l'empereur Kanishka, à Po-lu-sha-pu-lo:

On the northern side of the stone steps of the great stupa, there is a painted figure of Buddha about sixteen feet high. [...] The painter having received thus a gold piece from each, procured some excellent colours (blue and vermilion) and painted a picture.

Sa description du monument lui-même est d'ailleurs ambiguë et suggère un décor coloré, même s'il le donne comme des jeux de lumière, à la cause plus ou moins merveilleuse:

On the northern side of the steps, on the eastern face of the great stupa, [...] there are two full-sized figures of Buddha, one four feet, the other six feet in height. [...] When the full rays of the sun shine on them they appear of a brilliant gold colour, and as the light decreases the hues of the stone seem to assume a reddish-blue colour⁸.

Reste que la polychromie évolue à Hadda, pour ce qui est des stucs, du réalisme de l'image à la polychromie partielle, pour les figures dont l'esthétique est proche de celles du Gandhara, Shahri-Bahlol notamment, aux à-plats de l'icône, dont la silhouette paraît entièrement peinte, voire même éventuellement dorée, pour les images dont le style annonce déjà l'Asie centrale, ou Fayaz tepe par exemple, et là aussi la gamme des couleurs apparaît différente, sur le plan chromatique ou celui des pigments⁹.

⁸ Beal [1968]: 101-102.

⁹ Descamps–Lequime (éd.) 2007, Varma 1987.

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Anna Provenzali

Chief curator, Civic Archaeological Museum of Milan

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Fig. 1
Milan, Civic Archaeological
Museum, Bodhisattva statue,
inv. A. O. 9. 2921.

Abstract

The Civic Archaeological Museum of Milan holds a small but remarkable collection of Gandharan Art, acquired by the former Director Ermanno Arslan, between the 70s and the 90s of the 20th century. Archaeological method, that is to say contextualization, must apply also to objects without provenance. Cultural diversity is the starting point to understand/detect relations, connections, mutual interferences between cultures. Through museum exhibitions, we can transmit the notion that archaeological objects, more than being works of art to be admired for their beauty, are a cluster of various information regarding the ancient culture to which they belong.

The Civic Archaeological Museum of Milan holds a small but remarkable collection of Gandharan Art, acquired by the former Director Ermanno Arslan, between the 70s and the 90s of the 20th century.

The collection, which is composed of less than 40 pieces from the antiquarian market, were selected in order to give an insight into this artistic production, mostly unknown to the museum's general public.

At the time of acquisition, Milan was an important market for Oriental art and the purpose was to assign to public view objects which were about to enter private collections. The latter prevailed due to the ancient and ongoing pillage of Gandharan art (on this topic see Ali, Coningham 1998).

Though questionable, the acquisition of this collection offers the museum the possibility to let visitors discover such an important artistic production, as well as to stress the importance of context, both in the strict and in a broader sense, in order to understand these ancient works.

These issues – the importance of context and how the loss of it undermines the identity of artifacts without provenance – are among the most relevant issues that an archaeological museum must address.

Furthermore, Gandharan art has long suffered from being perceived as Buddhist art dressed in Hellenistic forms¹. This allure has determined its success in Europe but has also undermined its comprehension. Formal qualities, being a straightforward means for museum visitors to interpret

¹ Filigenzi 2012b, and in press.



Fig. 2a, 2b
Milan, Civic Archaeological
Museum, Pilaster Capital,
inv. A 990.05.01.



objects, can be misleading if not correctly explained. The museum must function as a mediator, fostering curiosity but also providing insights that underline the importance of scientific knowledge for the interpretation of its collections.

Exhibition guidelines

The museum exhibition² is accompanied by panels with illustrations on the geographical, historical, religious and social contexts of Gandharan art. Graphical reconstructions help contextualize the scattered pieces, while texts give visitors insights into Buddhism, long distance trade routes and the discovery of Gandharan art.

Once properly framed in its historical and religious context Gandharan art appears less a mere branch of Hellenized East and more a phenomenon in its own right, that cannot be read and understood out of its local context. Gandharan art follows its own specialized codes that vary in time and space. Though archaeological contexts are still very few in regard to the collections around the world, recent research has prompted new approaches and provides some significant viewpoints. Reconnected to its own cultural universe Gandhara offers a significant and illuminating example of how a cultural entity develops through interactions with other cultures.

Art is a conventionalized system of communication that depends on context and we must rethink our way of looking at objects. Archaeological method, that is to say contextualization, must apply also to objects without provenance. Cultural diversity is the starting point to understand/detect relations, connections, mutual interferences.

Through museum exhibitions, we can transmit the notion that archaeological objects, more than being works of art to be admired for their beauty,

² Due to lack of display space, some objects are in the store-rooms.



Fig. 3
Milan, Civic Archaeological
Museum, Relief,
inv. A 0.9.18499.

are a cluster of various information regarding the ancient culture to which they belong; they bear information about religion, society, economy, because of their being, in antiquity, the most powerful media of communication.

The Gandharan Collection of Milan ranges from statues to reliefs and architectural elements (a *nāgadanta* – *stūpa* peg –, a small capital from an engaged pilaster, a dividing element with an engaged pilaster). It also includes five reliquaries and an inscribed terracotta jar. Stucco and clay production is represented by the head of a Buddha and other figures belonging to reliefs and scenes once applied to walls.

Some items have been cited in papers and books³; none of them have ownership history – as far as I can infer from archival documents – except the name of the last dealer/owner. Some fragments are allegedly said to come from Swāt (Provenzali 2005, nn. 4, 19) or from Hadda/Nagarahara (Provenzali 2005, nn. 30-31)⁴; in some cases the type of schist (green schist) points to Swat as the place of provenance⁵ (Provenzali 2005, nn. 22 - Fig. 2a-b, 23). This provenance can also be tentatively hypothesized for other items that display similarities in material or iconography with items from Swāt (Provenzali 2005, n. 12 - Fig. 3).

³ Besides the bibliography cited in Verardi 1991, Provenzali 2000 and 2005 see Taddei 1991, p. 317, n. 5 (Civic Archaeological Museum, Inv. N. A 0.9.18496; Filigenzi 2012a, fig.13 (Civic Archaeological Museum, Inv. N. A 0.9.18497).

⁴ Reported in the acquisitions register.

⁵ A gandharan-corinthian capital and the dividing element (the latter in talcoso schist).

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Fig. 4
Milan, Civic Archaeological
Museum, Bodhisattva
Head with inscription,
inv. A 0.9.18496.

Lacking their archaeological context and all related data, the items must be scrutinized from various perspectives in order to gather as much information as possible.

Morphological analysis, material, masons tool marks, combined with iconographic and stylistic analysis can give us useful data to link the items in the collection to others whose provenance is known, and to eventually detect fakes.

When dealing with out-of-context items, careful scrutiny is the only feasible approach. It can be very discouraging as it raises more doubts than it provides certainties; often it clashes with the singularity of an object. We can only commit ourselves to observe every item from different points of view, without forgetting that any assumption must be thoroughly examined.

Diagnostic analysis such as that conducted by Pannuzi, Talarico, Guida, Rosa (in this issue) is a useful means to gain information about objects, that we hope will also be useful to contextualize them.

In this brief contribution we can only outline some issues regarding the Milan collection.

Detecting recent modifications

Coming from the antiquarian market, reliefs and statues are liable to have been modified in order to meet the taste of the collector⁶.

The Bodhisattva head with inscription on the halo (Fig. 4, schist, H.30 cm, Length.24, Provenzali 2005, n.4) is puzzling if one observes the treatment of the eye. The surface of the concave halo has not been polished notwithstanding the inscription, while the face of the bodhisattva is in very good condition. It could be a fake, but the inscription is deemed to be authentic.

Some stucco figures bear traces of restoration aimed at hiding fractures and junctions (see for example Provenzali 2005, nn. 30-31). I devoted an article to the biggest reliquary of the collection, a “pastiche” composed from different fragments.

A Bodhisattva statue (Inv. N. A 0.9.2921, Provenzali 2005, n.5) shows holes, made in recent times, to fix to it other pieces (Fig. 1).

Research perspectives

The advancement of Gandharan studies linked to the publication of archaeological reports and to archaeological investigations is bringing new perspectives to the study of the collection⁷.

Stucco and clay statues need to be studied for their materials and moulding/modeling technique and their relation to the archaeological records (see for example Filigenzi 2010).

A morphological analysis that takes into account mortises, tenons, masons and tool marks can give us clues regarding the possible original location of objects.

⁶ See for example Provenzali 2005, nn.30-31. Heads seems to have been rejoined (or simply attached) to another part/to the body.

⁷ See Faccenna 1980-1981;1993 and 1995, Olivieri-Filigenzi 2018.



We hope that, being studied and exhibited in a public museum, these items which are stuck in show-cases so far from home, will regain as much as possible of their identity.

Surely they have much to teach us about the way we should perceive cross-cultural relationships in the ancient as in the contemporary world.



Fig. 5a, 5b
Milan, Civic Archaeological
Museum, Relief,
inv.A 0.9.18498.

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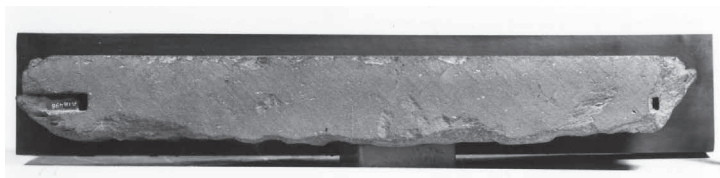
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The gilded bracket at the MAO Museo d'Arte Orientale di Torino (Museum of Oriental Art Turin)

Claudia Ramasso

Curator of South and Southeast
Asian Art – MAO Museo d'Arte
Orientale, Torino

opposite page

Fig. 3

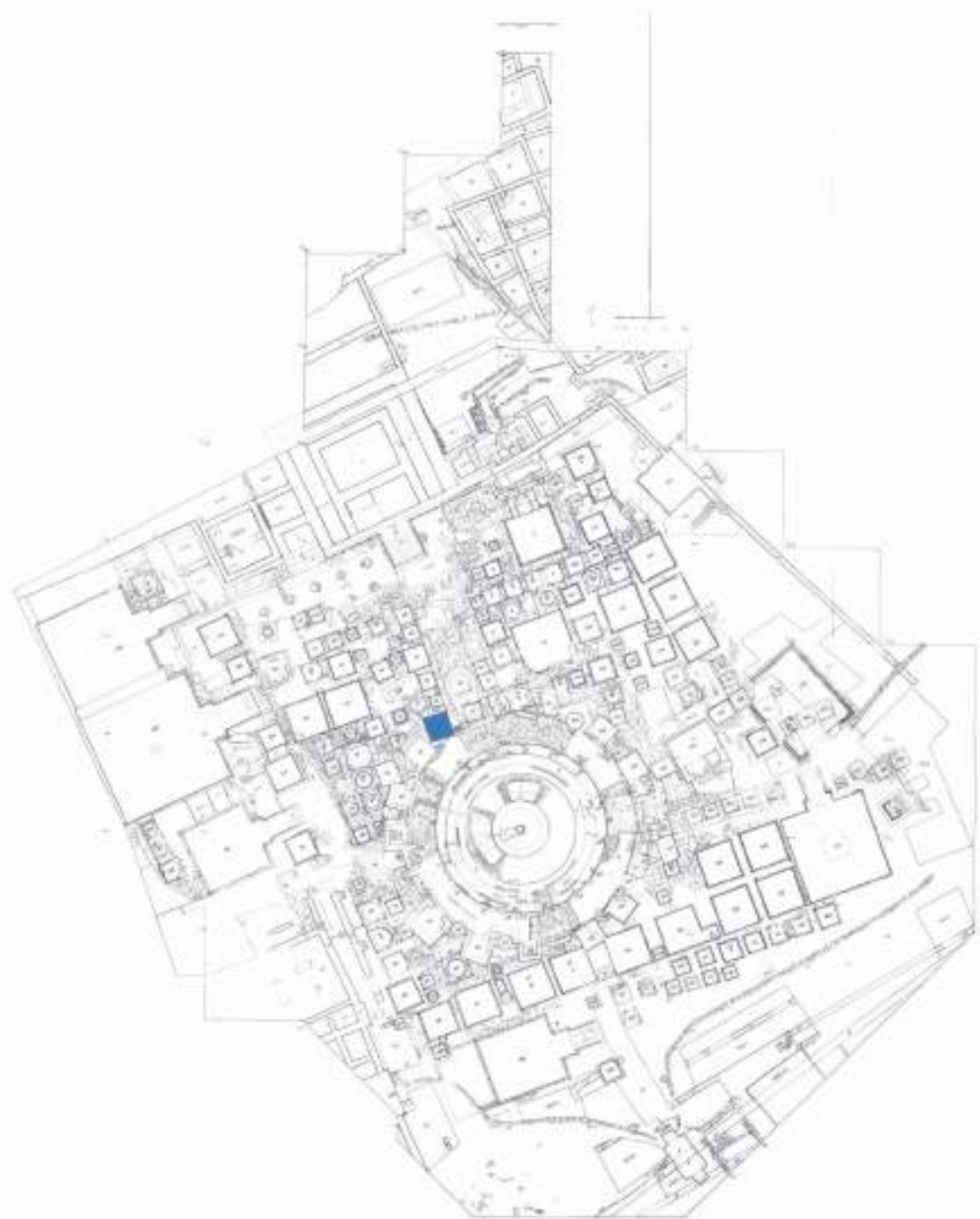
Butkara I (Swāt Valley,
Mingora, Pakistan).
General plan with stūpa
n. 17 highlighted in blue.
Published in Faccenna,
1980, part 5.2.
Courtesy IsMEO Italian
Archaeological Mission
in Pakistan.

Abstract

Taking into account the reports on archaeological excavation and the resulting successive publications, the present article wants to define the exact place of origin and an accurate dating for a schist bracket showing traces of gilding, currently preserved in the MAO Museo d'Arte Orientale in Turin (Inv. n. IAp/151). The bracket has been unearthed during excavations carried out between 1956 and 1962 by the Missione Archeologica Italiana at the site of Butkara I (Pakistan). In 2016, the conspicuous gilding still present and the bole underneath it have been scientifically analyzed by the ISCR, Istituto Superiore per la Conservazione e il Restauro based in Rome. At present, the ISCR is carrying out important studies at international level on the polychromy and the gilding of stone and stucco elements pertaining to the Buddhist artistic production of the ancient region of Gandhara, an area at present situated between the two nation-states of Pakistan and Afghanistan.

The gilded bracket at the MAO Museo d'Arte Orientale

The collection of Gandharan art at the MAO Museo d'Arte Orientale in Turin preserves a considerable number of archaeological finds from the Buddhist Sacred Area of Butkara I. Between 1956 and 1962 the excavations carried out in the Swāt Valley by an Italian Archaeological Mission — led by the IsMEO from Rome and Centro Scavi e Ricerche in Asia from Turin, under the direction of Domenico Faccenna — uncovered Butkara I, one of the most important Buddhist Sacred Areas of Gandhara, located in the Swāt Valley near the village of Mingora (Khyber Pakhtunkhwa, formerly North West Frontier Province), Pakistan. The importance and complexity of the site, together with the scientific rigour of the excavations, which for the first time in the ancient Gandhara region were conducted with particular attention to stratigraphic analysis, have provided important chronological information about the evolution of architectural styles and figurative Buddhist arts of that area. The archaeological site includes a Buddhist Sacred Precinct connected to a large Inhabited Area. The central nucleus of the site is a Great Stūpa (GSt.), the earliest construction of which (GSt. 1)



dates back to the 3rd century B.C. (Faccenna, 1980, part I, p. 32), the period of the first great spread of Buddhism in Asia from its place of origin in Northern India. Over the centuries the site, an irregular square of 75 × 80 metres, has undergone many architectural transformations and additions, reaching a total of 227 buildings that include many minor *stūpas*, columns, monasteries and shrines containing Buddha and Bodhisattva images. Currently their remains are in close proximity to one another. The Great Stūpa underwent reconstruction several times, each of them encapsulates the previous one: the remains of Great Stūpa are the result of four successive modifications (GSt. 2-3-4-5) of the ancient structure (Gst. 1), a large dome in blocks of dark phyllite resting on a cylindrical foundation, both coated with plaster. The five architectural periods of the Great Stūpa correspond to a variety of building techniques and decorative motifs; they also coincide with several periods in which the Sacred Precinct and the monuments it encloses were developed (for a detailed description of the five periods of the Great Stūpa of Butkara I, see Faccenna, 1980, part 1, pp. 21-127). The height of the splendour of the Sacred Precinct of Butkara I probably occurred with the third period of the Great Stūpa, GSt. 3, dated between the 1st and the 3rd century A.D. The first period of the following stage (GSt. 4, 4th-7th century A.D.) attests to great expressive maturity. Thereafter, a slow decline prevailed during the last period (GSt. 5, 8th-10th century A.D.), when the Great Stūpa was rebuilt following its destruction in the 7th century A.D. During subsequent reconstructions stucco was increasingly used to replace lacunae in the schist decorations and also to add new sculptural elements (Filigenzi, 2007, pp. 239-244; Olivieri and Filigenzi, 2017, pp. 85 – 90; Behrendt, 2017, pp. 159-161).

Among the sculptural and architectural elements uncovered during the Butkara I excavations, a few stucco and stone (schist) finds show traces of polychromy or gilding; the use of coloured plaster is equally evident on the surface of monuments. Notably, as far as the stone finds are concerned, traces of gilding can be found on statues and narrative reliefs, as well as on the cornices that framed the latter. In some cases, the gilding of the cornices also extended to the architectural elements and walls of the monuments (Faccenna, 1980, part 3, pp. 703-722). Since 2012, a research group headed by the ISCR, Istituto Superiore per la Conservazione ed il Restauro, based in Rome, in collaboration with the former Museo Nazionale d'Arte Orientale "Giuseppe Tucci" in Rome (at present MuCiv, Museo delle Civiltà – Museo d'arte orientale "Giuseppe Tucci") and with the Missione Archeologica Italiana in Swāt, directed by Luca Maria Olivieri, has begun to investigate some technological and productive aspects of Gandharan art. In particular, preliminary studies have evidenced the need to investigate through adequate diagnostic instruments an element which until now has not received due attention, i.e. the polychromatic or gilded coating of sculptures and Buddhist monuments in the ancient region of Gandhara (Pannuzi, 2015, pp. 9-15). In the following years, the ISCR has continued its research in this direction analyzing samples taken from different sculp-



tural elements, which have produced important results published in the present volume. The artworks analyzed include a small bracket measuring 11,7 × 19,8 cm, found during excavations by the Missione Archeologica Italiana in the Swāt Valley (1956 – 1962) and presently preserved at the MAO Museo d'Arte Orientale in Turin.

In his excavation report, among the gilded architectural elements, Faccenna (1980, part 3, p. 721, note 1) mentions two findings in particular: a crossbar, Inv. no. 3941 and a bracket, Inv. no. 4581. The latter has been consigned at the time Museo Civico of Turin in the 1963 (fig. 1). The bracket, which is currently catalogued at the MAO Museo d'Arte Orientale of Turin under Inv. n. IAp/151, is a double volute type with vertical groove (Faccenna and Filigenzi, 2007, p. 96); the part of the body has triangular profile with two volutes at the upper and lower corners, while the tenon portion is missing. The upper part has two fillets, lower one is recessed below the upper one, followed by a row of dentils and bars of smaller height and width. This type of bracket is frequently found in the Swāt region (Zwalf, 1996, vol. I, p. 61). The bracket Inv. n. Iap/151 presents calcareous concretions that partly cover the gilding (gold leaf?). Indeed, the bracket still preserves ample areas of the original gilding that probably covered the whole object: despite lacunae, the most extensive areas of gilding can be found on the central part

Fig.1
Gilded bracket.
Butkara I (Swāt Valley,
Mingora, Pakistan),
1st – 2nd century A.D.
Schist with traces of
gilding, 11,7 × 19,8 cm.
MAO, Inv. n. IAp/151.
Courtesy Fondazione
Torino Musei.

of the bracket and on the upper volute, however, there are also visible traces of gilding on the lower volute and on the second dentil from the left. High-resolution imaging shows further fragments of gilding on the fourth dentil from the left, on the recessed bar next to the second dentil, and on the terminal part to the right of the upper bar. Slight traces of red pigment are also visible, especially on the terminal part of the upper bar (fig. 2). In the catalogue of the *Sculture Buddiste dello Swat* exhibition, these remains are described as a red bole used as under layer for the gilding. Indeed, the caption about the golden bracket contains the following text:

Frammento di mensola con doppia voluta semplice. Restano tracce abbondanti della doratura che doveva coprire tutta la superficie a vista. Tracce del colore rosso di preparazione.

(Sculture buddiste dello Swat, 1963, p. 18, fig. 105)

The catalogue does not mention the name of the author of the texts, however, from correspondence between Vittorio Viale, the then Director of the Museo Civico of Turin, where the exhibition was held, and Domenico Faccenna, one may deduce that the caption had been written directly by Faccenna's colleagues (Archivio Museo Civico, CAA 1150, segnatura, 1963 – Scavi archeologici in Asia).

The gilded bracket was unearthed during the excavation of a minor *stūpa* (n. 17) that overlooks the circular ambulatory passage intended for ritual circumambulation (*pradakṣiṇapatha*) of the Great Stūpa (fig. 3). The *stūpa* lies on the Western side of the Northern entrance of the *pradakṣiṇapatha* and is considered to be one of the most noteworthy *stūpa*, within the variety of this class of monuments (Faccenna, 1962, vol. 1, pp. 39-40). The *stūpa* n. 17 has a quadrangular base and green schist decorations. The *stūpa* n. 17 (fig. 4) is worthy of note not only because the first level of its base is preserved, but part of the second as well, reaching a total height of 1.23 metres, while no remains of the hemispherical dome (*aṇḍa*) have been found. Both levels are square in shape; the second is more recessed compared with the first. The 1st storey consists of a base composed of a plinth, torus and cavetto, walls built with four rows of soap-stone blocks and an arched cornice. Each wall is decorated with four columns and two angle pilasters in green schist. The 2nd storey is noticeably set back and consists of a base composed of a plinth, torus and cavetto, walls built with a row of soap-stone blocks and a badly damaged frame. The walls are decorated with six quadriglyphs on each side, including the angular ones, fixed by means of tenons to base and cornice. Visible traces of different layers of plaster are visible on the *stūpa*, although it is not possible to establish exactly whether the layers date back to the period during which the *stūpa* was erected. In some areas of the plaster layers, in the panels placed between the columns and the quadriglyphs, pictorial decorations depicting a single subject have surfaced: an open lotus flower, alternately blue and red, against a white background. The pictorial decorations were probably surrounded by gilded architectural elements, which framed them. This *stūpa*, like oth-

er monuments of the same period, was later repeatedly damaged and subsequently restored (Faccenna, 1980, part 2, pp. 250-255). The gilded bracket that is the subject of this article, together with the Corinthian capital of a pillar (Inv. n. 595) “come from the core of a restoration carried out against the upper part of [the *stūpa*] no. 17, on the N side, in correspondence with the 6th and the 7th quadriglyphs”. (Faccenna, 1980, part 3, p. 721, note 1; for a detailed description of the quadriglyphs and the dentil and bar motif of the *stūpa* n. 17 see Faccenna, 2007, pp. 175-179).

Faccenna (2007, p. 168) points out the importance of the evolution of the Sacred Area during the GST.3 Period, when the architectural structure of the site underwent significant changes. During that period, the Great Stūpa though maintaining its traditional circular plant, presents several levels which divide its cylindrical basis. The last, highest level, which can be accessed through a series of steps, is protected by a railing. Along a South-North axis, the circular Great Stūpa acts as a counterpoint to the coeval quadrangular-based monastery (Great Vihāra n. 57), which at the time of the excavations had been referred to as the Great Building (GB.). In between these two principal buildings there is a quadrangular-shaped space

Fig. 2
Gilded bracket:
detail of the red bole.
Butkara I (Swāt Valley,
Mingora, Pakistan),
1st – 2nd century A.D.
Schist with traces of
gilding, 11,7 × 19,8 cm.
MAO, Inv. n. Iap/151.
Courtesy Fondazione
Torino Musei.



flanked on its two shorter sides by stairways which in the past granted access on one side to the Great Stūpa (Gst.3) and on the other to the Great Vihāra n. 57. Near Gst.3 – along a line which touches on it along a west-east running parallel to the facade of the Great Vihāra n. 57 – are found a series of buildings going back to the same period (*stūpas* n. 27, 17, 14, column n. 33 and pedestal n. 135). As stated by Faccenna and Salomon (2007, pp. 113), the *stūpas* n. 17 and n. 27, separated by column n. 33, the *stūpa* n. 14 and the pillar on the pedestal n. 135, together with the Great Vihāra n. 57, are built using precious materials such as talc schist and chlorite schist, presenting moreover rich decorations making use of colours and gilding. The importance of *stūpa* n. 17, already noted by Giuseppe Tucci (1978, pp. 60, 63-66), is described by Faccenna in his earliest publications about the Butkara I excavations, in which he stresses the importance of the gilding found in these types of buildings:

Stūpas 14 and 17 are the best preserved, and from them we can have an idea of the quality of their decoration, since this is still *in situ*, and since the green schist of which it is made is as good as new in those areas sealed up by the walls of buildings that were made later to lean up against it. The sides were parted by fluted Corinthian half-columns with pilasters at the corners. The upper cornice was made up of fillets, ovoli and kymation, and was decorated with lion protomes or alternately with full curly manes in glory, stylised lilies, eagles, cupidis on lotus-flowers. On stūpa 17 a square upper storey is also preserved, slightly smaller, decorated with quadriglyphs between the lower and upper cornices. In the spaces between the half-columns and the quadriglyphs, the side of the wall was painted with large open lotus flowers, alternately red and blue: these are preserved on the south wall. All the architectural features, made of schist, together with the dome, likewise built of schist blocks, were gilt. We can now only surmise the rich splendour of these monuments in a lavish yet refined taste.

(Faccenna, 1964, p. 44)

As to dating the bracket, a comparison between the successive transformations of the Great Stūpa and the monuments inside the Sacred Area, with their respective floor levels and stratigraphic sequence, together with the studies of the numismatic finds that had been unearthed, attribute the construction of the *stūpa* n. 17 to Period 3, corresponding to the third stage of the Great Stūpa (Gst. 3) and to floor level F4 (fig. 5). In the reports about the campaign at Butkara I, Faccenna (1980, part I, p. 173) attributes Period 3, F4/F3 to the 1st-3rd century A.D. In particular, he attributes to floor level F4 the period between the end of the 1st century B.C./beginning of the 1st century A.D. and the beginning of the 2nd century A.D. Later studies by the same scholar, in which he compares some decorative elements from the site at Saidu Sharif I, Paṅṛ I (Swāt Valley) and Dharmarājika (Taxila) with the stylistic and architectural evolution witnessed at Butkara I, date *stūpa* n. 17 of Butkara I, together with *stūpas* n. 14 and n. 27, to the first quarter of the first century A.D., that is during the pre-Kuṣāṇa, i.e. the Indo-Parthian period. In particular, in his study on two fragments of a bracket from the site of

Dharmarājika (Taxila), Faccenna identifies close affinities – both in relation to the kind of material (chlorite schist) and to the processing technique used – with the artworks of Swāt Valley, which during the period was probably the principal centre of artistic production. Moreover, the two brackets present decorative elements very similar to those present on *stūpas* n. 14 and n. 17 of Butkara I, dated about 20 A.D. (Faccenna, 2001, pp. 141-145, 166; 2005, pp. 94-95). As far as the dating of the numismatic findings and their relation with the GSt.3 is concerned, floor level F4, Faccenna (2007, pp. 168-170) pays particular attention on some coins found in different parts of the sacred area, including an excellently preserved Azes II tetradrachm (n. 5229) discovered in one of the two relic-caskets inside the plinth of column n. 135, which in precedent studies had been defined by the same scholar “a guide to chronology” (1980, part 1, p. 57). As reported by Fabrègues (1987, pp. 34-35), on the basis of the stratigraphic layout of the site it is possible to determine that the *stūpas* n. 14 and n. 17 are coeval with or immediately successive of column n. 135, built during the GSt.3 Period. Although it is difficult to date the Indo-Scythian reign of Azes II with precision, on the bases of some inscriptions it is possible to put the end of Azes II’s reign before 20 A.D., the year in which it was replaced by the Indo-Parthian dynasty. The gilded bracket, together with the other sculptural Gandharan finds unearthed by the Butkara I excavations and intended for the city of Turin, became part of the holdings of the then Museo Civico in 1963, following the *Sculture buddiste dello Swat* exhibition that was held that same year at the Galleria d’Arte Moderna. In 1989 the Gandharan finds were allocated to the new Museo di Numismatica, Etnografia e Arti Orientali. When the Mu-

Fig. 4
Stūpa n. 17: Northeast side, 1st and 2nd storey.
 Butkara I (Swāt Valley, Mingora, Pakistan).
 Published in Faccenna D., 1980, *Butkara I (Swat, Pakistan) 1956-1962*, IsMEO Reports and Memories, Roma, part 5.1, pl. 145.a.
 Courtesy IsMEO Italian Archaeological Mission in Pakistan.



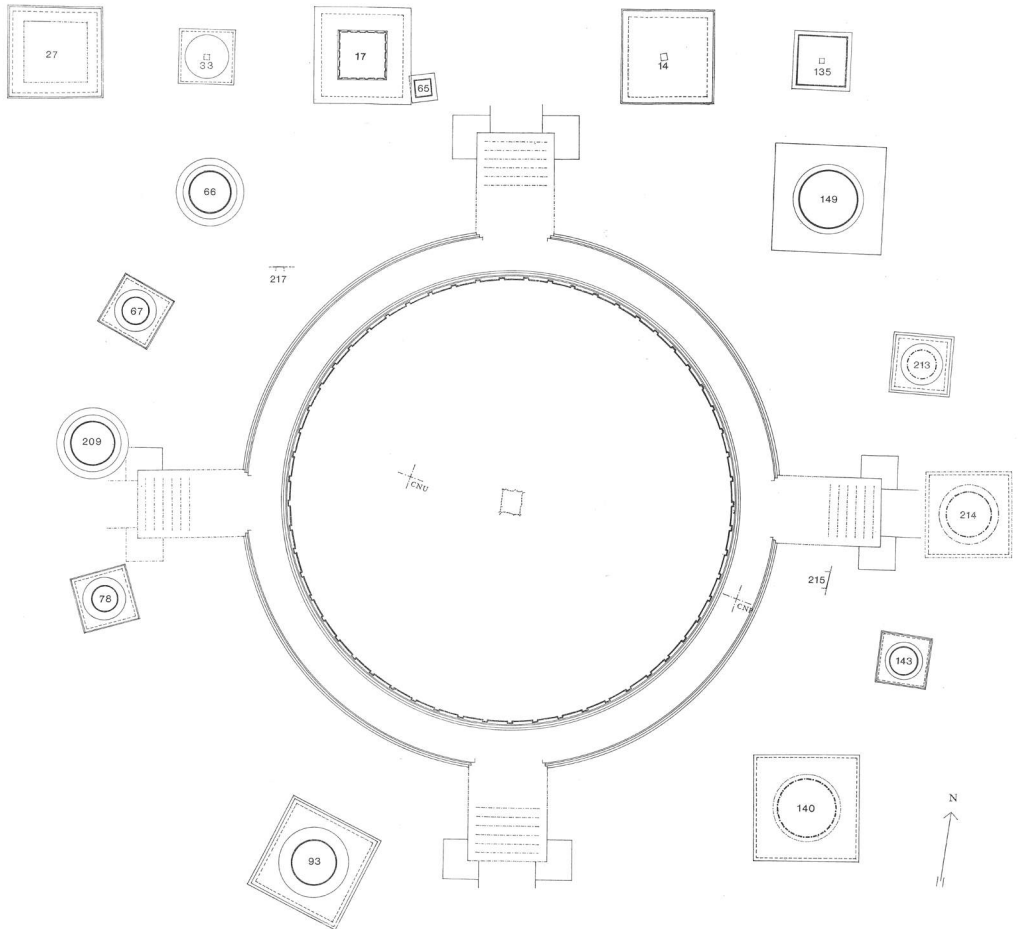


Fig. 5
Reconstruction sketch of GST. 3,
F4, with *stūpa* n. 17 and
surrounding monuments.
Butkara I (Swāt Valley,
Mingora, Pakistan).
Published in Faccenna, 1980,
part 3, pl. VIII.
Courtesy IsMEO Italian
Archaeological Mission in
Pakistan.

seum was closed down in 2001, the finds were allocated to the collections of the Museo Civico d'Arte Antica, Palazzo Madama. More recently, since the opening of the MAO Museo d'Arte Orientale in December 2008, the bracket has been on display in the Gandhāran Art Room as part of the permanent exhibition of South Asian and Southeast Asian Collections. The finds have a long history of museum exhibition and have been held by several institutions, however no written records exist about its past conservation and restoration interventions. The MAO Museo d'Arte Orientale has simply cleaned its surface with soft brushes, without intervening on the calcareous concretions.

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