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A NEW CHORASMIAN WALL PAINTING FROM AKCHAKHAN-KALA

Michele MINARDI[1], Alison V.G. BETTS[2], Frantz GRENET[3],
Stanislav KHASHIMOV[4] & Ghairat KHODZHANIYAZOV[5]

([1] Uni. Bordeaux, Ausonius UMR 5607, 33607 Pessac, France. This study has received financial support from the French State in the frame of the "Investments for the Future" programme IdEx Bordeaux, reference ANR-10-IDEX-03-02.
[2] Department of Archaeology, University of Sydney. Excavation and conservation of this painting was funded by the Australian Research Council (DP0877805, DP130101268).
[3] Collège de France, Paris.
[4] Art Partenaire, Society for Art Conservation, Versailles, France.
[5] Research Institute of the Humanities, Academy of Sciences of Uzbekistan, Karakalpak Branch, Nukus)

Abstract: Akchakhan-kala, a major royal centre of Ancient Chorasmia, is now well known for its remarkable wall paintings. This paper discusses a wholly new form of image, that of a well-preserved and finely rendered recumbent ibex found in Area 10, the "Ceremonial Complex" of the site. Other recently discovered wall paintings in Area 10 are of clearly Zoroastrian character, and the ibex should now also be considered in this light. It is suggested that it may represent Verethraghna/Wahrām, the Avestan god of Victory. The image finds its best parallels in Achaemenid art, looking back to a much earlier artistic legacy.

Keywords: Ancient Chorasmia, Akchakhan-kala, wall paintings, conservation, Achaemenid legacy, Avesta, Wahrām.

INTRODUCTION

The remarkable wall paintings from Akchakhan-kala are now quite well known from a series of publications, firstly on the series of "portraits" (Kidd 2011; Kidd *et al.* 2008; Yagodin *et al.* 2009; Kidd & Betts 2010; Kidd *et al.* 2012; Kidd & Baker-Brite 2015) and the "procession" (Kidd 2012), and most recently on the colossal figures of Avestan gods (Betts *et al.* 2015; Betts *et al.* 2017).

The painting discussed here is completely different from all of these (Figs. 1 & 2). Although not fully preserved, it is large, covering around a square metre of plaster. In the technique of painting at Akchakhan-kala, the surfaces to be decorated were covered in a layer of mud plaster which was then overlaid with a 1-5 mm thick layer of gypsum plaster. The pigments comprised mainly charcoal and a variety of iron oxides, creating a palette dominated by reds, browns and yellows (Yagodin *et al.* 2009; Baker-Brite 2006).

The painting shows the head and forequarters of a male horned animal in right profile. The horns rise thick and vertically from the top of the head then sweep back, narrowing rapidly to end in finely pointed flourishes. The back-turned ear is small and pointed, shown just behind the base of the horns. The eye is round with a circular black pupil and white sclera. The face is long and flat fronted; the nostril and small chin are clearly outlined. The area of the painting around the mouth is damaged and it is not clearly visible, but this seems to be closed. A long black beard is shown, falling from behind the chin right down the front of the chest. It is separated from the body of the animal by a thin stripe of white that follows its profile. The front legs are tightly bent and tucked up close to the body with the right front hoof visible. A faint patch of grey hints at the folded position of the back leg. The line of the belly can just be seen, defining the lower limit of the body;

the line of the back is very clear, falling in an elegant curve from the back of the head and levelling out toward the hindquarters. The back half of the animal is not preserved beyond a line defining the curve of the haunches. By comparison with the paintings of the Avestan gods (Betts *et al*. 2015; Betts *et al*. 2017), the rendering of the animal is simple, a characteristic generally more comparable with that of the "portraits" (Yagodin *et al*. 2009).

Some interpretations for the previously published paintings have been put forward. The "portraits", and possibly also the "procession" (Kidd 2012), may relate to dynastic succession, while the "colossal figures" have been identified as Avestan deities (Betts *et al*. 2015; Betts *et al*. 2017). The significance of this new painting, of very different subject matter but still within the semantic of symbolism and religion, is discussed below.

Fig. 1: Akchakhan-kala Area 10: Ceremonial Complex. Wall painting showing a recumbent ibex. After full conservation treatment (KAE).

Fig. 2: Tracing of the wall painting depicting the recumbent ibex (KAE).

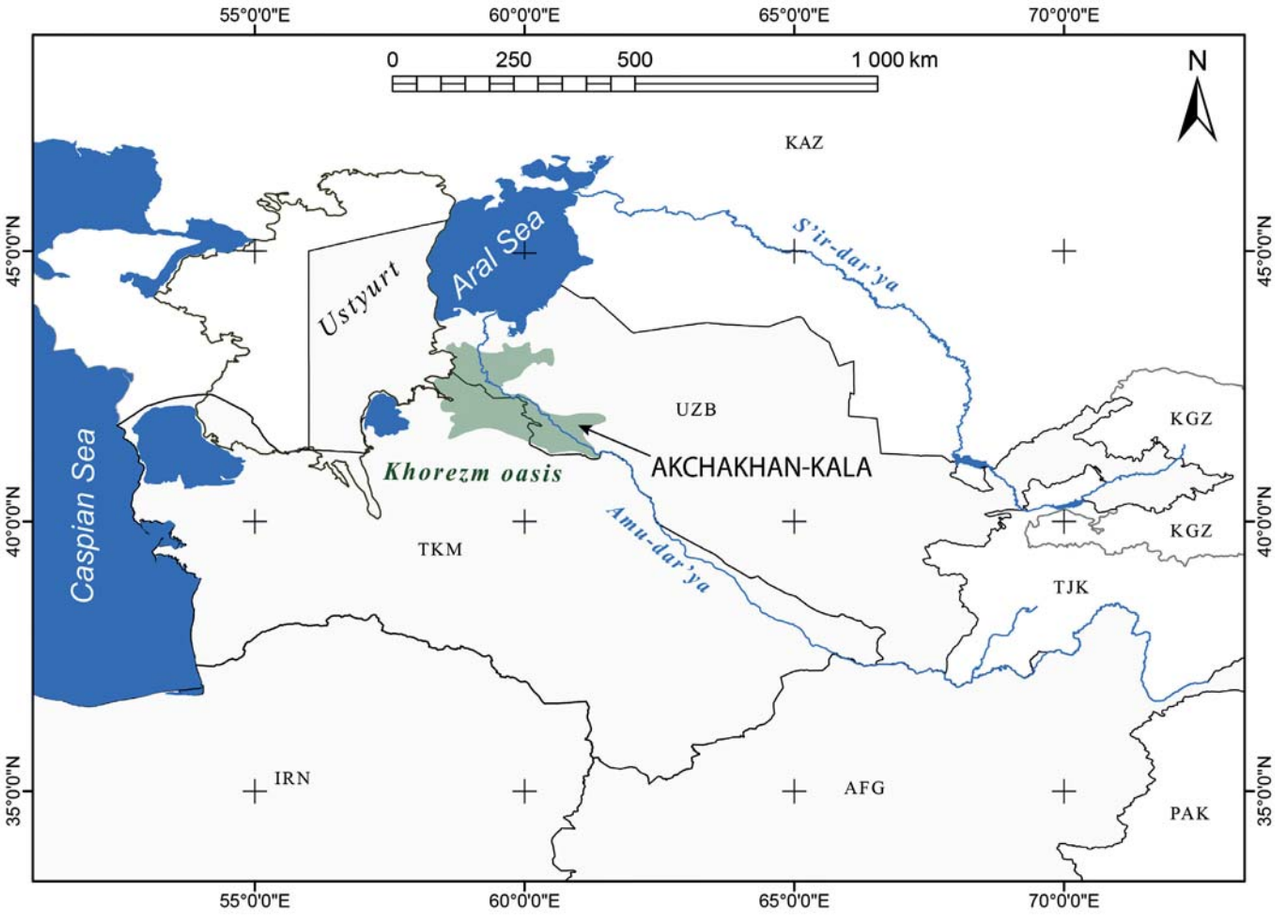

Fig. 3: Map of Central Asia showing the location of Akchakhan-kala.

AKCHAKHAN-KALA

Ancient Chorasmia (Latin version of the Old Persian *(H)uvārazmi* used also in other forms, e.g. Khwarezm, Khwārazm, Khorezm) occupied the delta region of the Amu-dar'ya (Fig. 3). It rose from a prehistoric background linked closely to the Eurasian steppes to fall under Achaemenid control by the 6th century BCE. From then on, Chorasmia became a rich semi-independent region (Minardi 2015), with agricultural systems fed by large canals, watched over by an extensive series of massive fortresses (Tolstov 1948a; 1948b; 1962). Its contacts were primarily, but not exclusively, with the nomadic north, where the ethnic roots of its people almost certainly lay. After the events related to Alexander's *anabasis,* Chorasmia began to look much more to the south, although remaining in relative isolation up until the 2nd century CE (Minardi 2015; 2016a; 2016b). The cultural influences of the Achaemenids became deeply imbued within Chorasmia, appearing in new religious practices, hydraulic engineering, architecture, and almost certainly in the public activities of its rulers. All of these can be seen at Akchakhan-kala (Yagodin *et al*. 2009; Betts *et al*. 2009; Kidd & Betts 2010; Betts *et al*. 2015; Minardi & Khozhaniyazov 2015; Minardi & Betts 2016; Minardi 2016c)[1].

[1] Akchakhan-kala is excavated by the Karakalpak-Australian Expedition (KAE) directed by Alison Betts (University of Sydney) and Gairatdin Khozhaniyazov (Research Institute of the Humanities of Karakalpak branch of Academy of Sciences of Uzbekistan). The project was initiated in 1995 by Vadim N. Yagodin who was co-director until 2015.

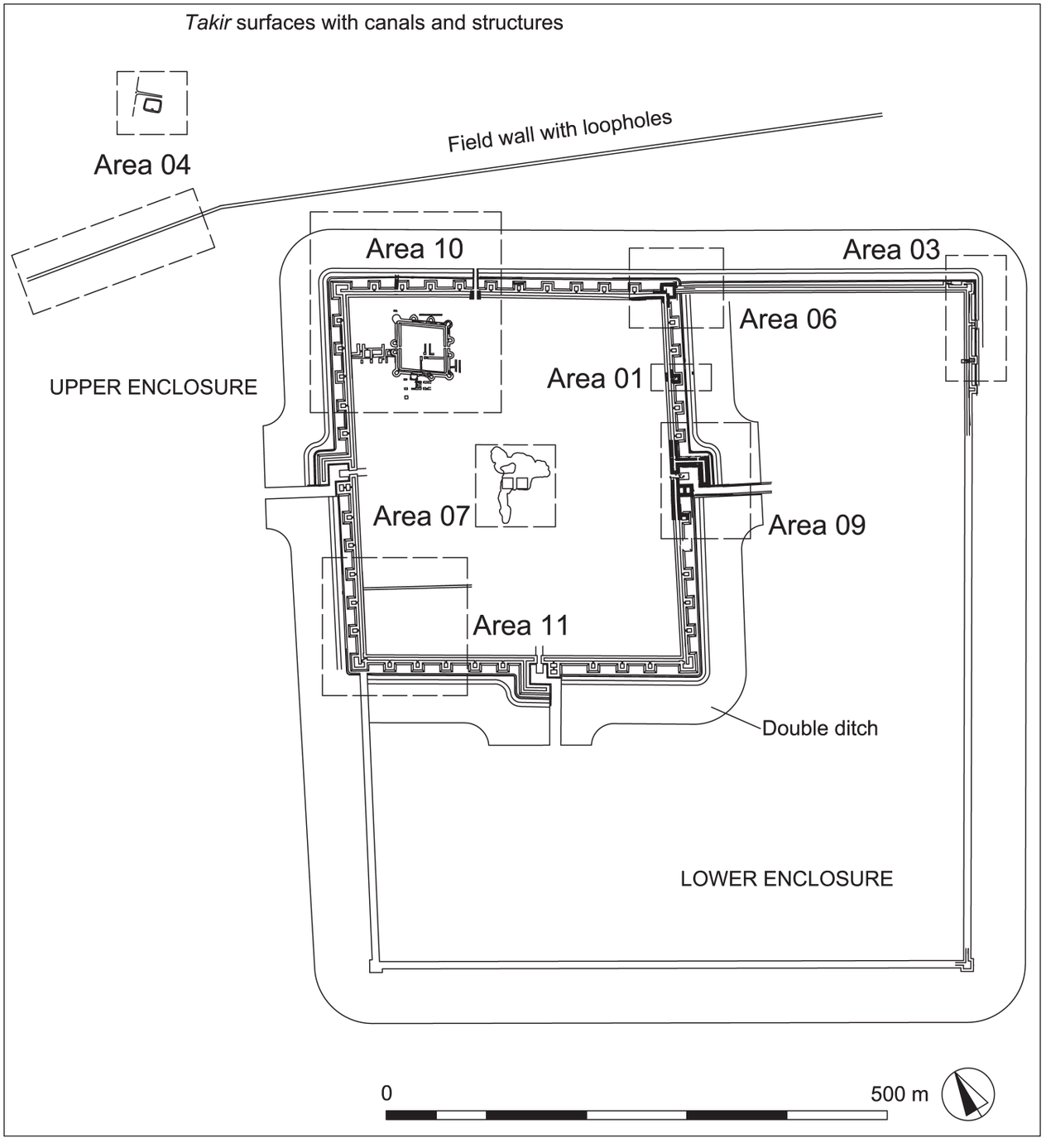

Fig. 4: Akchakhan-kala: site plan (KAE).

Akchakhan-kala (Betts *et al*. 2009; Kidd & Betts 2010) is a massive fortified site founded around the end of the 3rd or early 2nd centuries BCE and abandoned in early "Kushan" times[2], around the 2nd century CE (Fig. 4).

[2] The Chorasmian chronology is based on the work of Tolstov's Soviet era "Khorezm Expedition" (Tolstov 1948a; 1948b). It is almost wholly a relative chronology, relying on internal typological developments, primarily ceramic, supported in places by external parallels. It has since been revised in the light of new discoveries and more recent scholarship by Minardi (2015) who has reconsidered the chronological framework for Ancient Chorasmia and also revised the terminology. However, the original terminology is provisionally retained here to provide continuity with previous publications on the site.

Shortly afterwards, the site was systematically robbed out for building materials and valuable ornaments. The site saw a partial re-occupation in "Kushan-Afrighid" times when a "*donjon*" (Area 11) was built among the standing ruins of the earlier site, dated, based on the ceramics, to the late 4th to 5th centuries CE. The original site of Akchakhan-kala comprised two massive enclosures, the smaller and earlier of which, the Upper Enclosure, contained at least three discrete areas of monumental architecture. The one in the north-west corner, Area 10: the Ceremonial Complex, has yielded the wall paintings so far recovered. The Ceremonial Complex consists of an elaborate, roughly square monumental building, the Central Building, surrounded by a series of walls, chambers and walkways. Between the Central Building and the western fortifications a large area of over 750 square metres has been opened up revealing a number of halls, chambers and passageways. It was in one of these, W1, that the painting discussed here was found (Fig. 5).

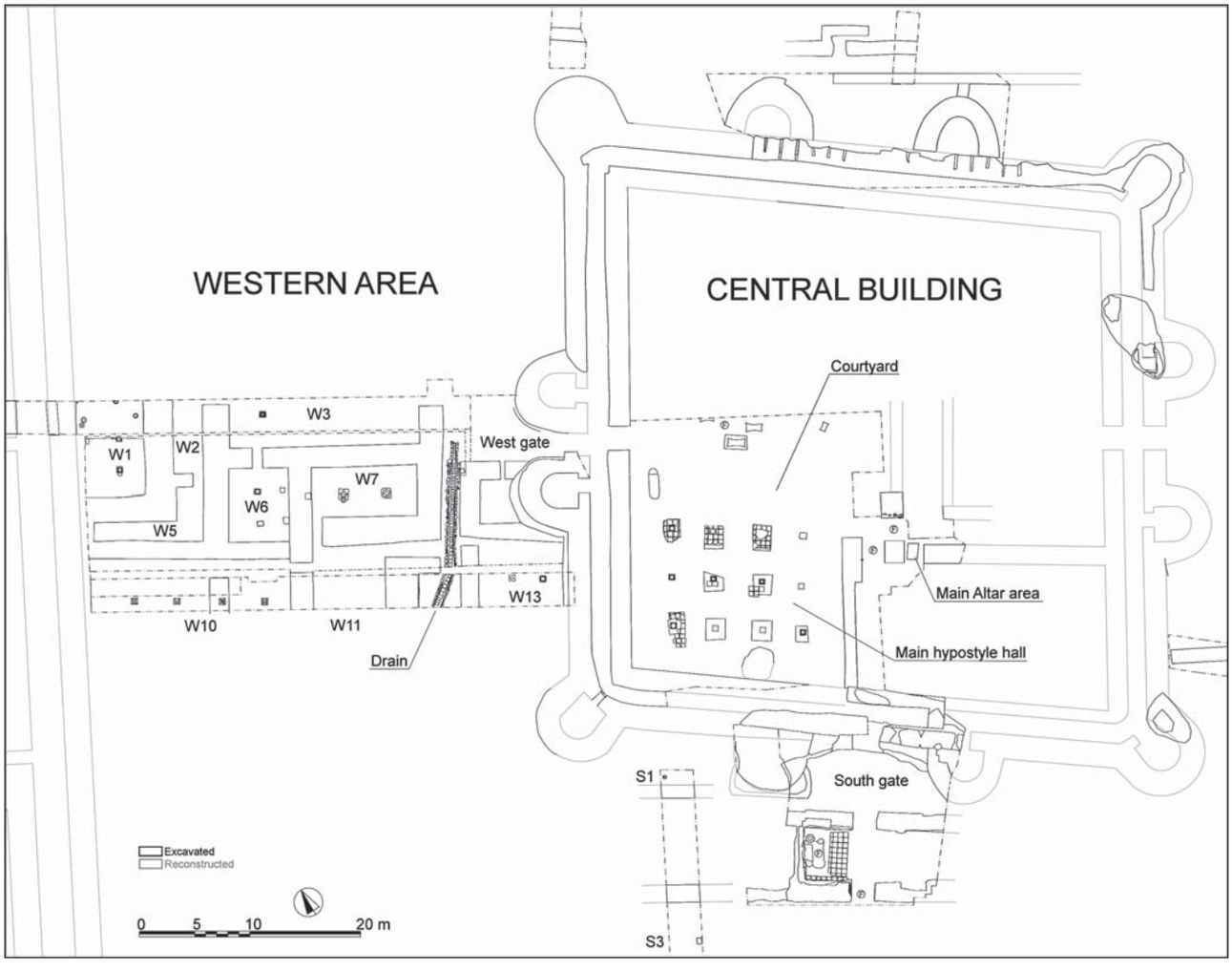

Fig. 5: Plan: Akchakhan-kala Area 10 (the Ceremonial Complex - KAE).

Three main stages of construction and use have been identified for the Ceremonial Complex, followed by a stage of abandonment and looting, then finally post-abandonment decay. The paintings are associated with Stage 3, the final and most elaborate construction phase of the complex.

W1 is believed to have been constructed at the start of Stage 3 as part of a major programme of building and decoration. All the wall paintings in the Ceremonial Complex are associated with this activity. W1 is a chamber set against the inner wall of the fortifications, forming an elongated room a little over six metres wide. The length is uncertain as the northern part remains unexcavated. A row of column bases ran north-south

along the main axis of the chamber, indicating that the chamber was roofed. The painting of the horned animal had fallen from one of the walls and was found strewn across the floor. While the painting was found in chamber W1, it lay with the painted surface face upwards, which presents a problem with regard to its original location. Analyses of the effects of the looting stage at the site on the wall paintings suggest that the removal of timber roof beams in many cases caused the collapse of the surrounding walls (Betts *et al*. 2017). The column bases in W1 must have supported a timber roof which would have been robbed out, along with the wooden columns that supported it. The action of this process is likely to have caused the walls to fall inwards into the chamber. If the painting had been on the wall of W1 it would most probably have fallen face down onto the floor, but this large painting was found face up, lying awkwardly on bricky debris that overlay the floor. This suggests that the painting came not from the chamber itself but from the other side of the wall, that is the west wall of the adjacent corridor, W2, with the animal facing north.

The archaeological evidence is insufficient to fully understand the order of construction of walls and chambers in this part of the Ceremonial Complex. It is possible that the final plan resulted from the construction work undertaken in Stage 2 and the start of Stage 3, but it is also possible, indeed likely, that some walls date from later in Stage 3. The final plan shows W2 (with W5) as an angled dead end corridor. This seems a strange location for such an apparently important painting. Originally, W5 opened to the south into a large hypostyle hall, W10, which was blocked off at some point in Stage 3. It may be that this blocking wall dates slightly later than the start of Stage 3, and that the painting was placed at a northern exit point from the hall.

Cleaning and Conservation

The technique used to paint the ibex is unsurprisingly similar to that of the other fragments found at Akchakhan-kala. The ancient painter used for his work mineral pigments bound with fruit tree resin (Koshelenko and Lelekov 1972) which has now decayed entirely, leaving the pigment held only by the underlying gypsum plaster. A preparatory outline was cut into the plaster with a pointed tool. The use of this technique is especially visible on the neck of the animal. The paint was applied with a brush following the incisions. It is not clear if the outline of the whole painting was incised prior to painting; close examination suggests that this method was used for the body, but perhaps not for the horns. The colours used are five in total: red/brown, blue, grey, black and yellow. On the horns, there were two layers of paint: a black/grey base and a blue/grey surface coat. The body of the animal was painted in red/brown colour with some black lines. The painted area was outlined in black. On the white plaster background there are some yellow/red spots of unclear purpose.

The painting was discovered in two large separate fragments but was in a good state of conservation considering this kind of painted plaster. The plaster base was cracked and misshapen as a result of its collapse from the wall to the ground and the subsequent activity of termites which are copious in the area. Over most of its surface the paint was in relatively good condition except for an abundance of crystallized salt residues.

The fragment received a limited mechanical in-field cleaning because the risk of rapid appearance of salt crystals restricted this activity[3]. Exposure to the dry climatic conditions on site (~10% HR) encourages the speedy formation of salts that can irreversibly destroy the fragile painted layer and so the painting must be lifted from the ground as soon as possible. However, the excess clay on the painted surface was partially cleaned off. After this activity, Paraloid B72 dissolved in acetone (2, 5 & 10% solution) was applied on the painted surface to consolidate it. Gauze was then laid on the painting and fixed with methylcellulose (Tylose). This adhesive is water-based and does not require solvents to remove it.

The painting was lifted using a long knife and was then transported to the conservation laboratory of the Institute of the Humanities in Nukus. The cleaning of the reverse of the plaster was carried out mechanically with the aid of various tools (scalpel, small wooden/bamboo stick, needle and cotton swab). Gauze was then fixed on the back with Paraloid B72 (dissolved in 15% acetone). A first backing mortar was applied, using a mixture of clay, sand and Acril 33 smoothed on with a spatula. This provided a strong support for the second

[3] Field conservation was carried out by V.V. Yagodin.

stage of the cleaning process of the painted surface. The painting was then turned over and the gauze on the surface of the paint was removed using humid cotton compresses.

After the complete removal of the facing and its methylcellulose water soluble adhesive, the excess Paraloid B72 had to be dissolved and removed. A compress (10 cm × 10 cm) of Japanese tissue paper and sand saturated with solvent (Solvent 646) was applied on the painting. The compress was sealed with Melinex film in order to slow the rapid evaporation of the solvent. This type of compress absorbs the excess polymer on the painted surface before the final mechanical cleaning.

After further removal of excess clay present on the surface of the painting, the colour layer was mechanically cleaned with demineralised water mixed with ethanol. In some spots pure ethanol was used instead. During the cleaning process some fragile flakes were consolidated with Paraloid B72 dissolved in acetone for a more rapid fixing. When the cleaning of the paint was completely finished, the colour layer was consolidated with Paraloid B72 (5% solution in Solvent 646). To reduce the numerous deformations/folds formed in the gauze these were cut with a scalpel and flattened out. The painting was then humidified using a water and ethanol mixture and placed under a press for a few hours.

In some areas on the body of the ibex fragments of paint lay on top of each other. In these cases the different layers were separated mechanically using a scalpel and acetone was used for the regeneration of the polymer layer that held them together. The detached pieces were added to the area around the head where it is presumed they belonged.

After the complete cleaning of the surface of the painting a second backing mortar (5 mm thick) was applied to stabilize the fragments. The composition of this further backing included desalted clay, sand and nylon fibres. To stabilize the backing mortar a synthetic adhesive was used (Acril 33, 5% solution in water). The gaps on the surface of the painting were then cleaned using ethanol and a scalpel to prepare the piece for the application of a thin in-filling mix/mortar. This was composed of desalted clay, chalk powder and Acril 33. The painting was then set onto a rectangular honeycomb aluminium board[4] suitable for display. The adhesive was made of clay, sand (1/2) and Paraloid B44 (50% solution in Solvent 646 — Khashimov 2013: 110), selected for its strong mechanical resistance and to ensure the fully reversibility of the mounting process.

The blank areas around the painting fragments were filled with a mastic made of clay, sand (1/2) and Acril 33 (5% solution in water). This was then finished with a dressing of clay, chalk and again Acril 33 (5% solution in water). The relative balance of clay and chalk was chosen after several tests for colour and texture. This dressing was applied all around the fragments of painted plaster and in the gaps in-between (Fig. 6).

Identification of the Animal

There are at least three reasonably convincing possibilities for the identification of the horned animal: *Saiga tatarica*, *Ovis ammon cycloceros* or *Capra sp. (sibirica/aegagrus)*[5]. The highly distinctive *Saiga tatarica*, the saiga antelope, is a native of the Ustyurt plateau to the north of Ancient Chorasmia, between the Aral and Caspian seas. The saiga is particularly remarkable for its prominent and elongated nose, shaped almost like a very short stubby trunk. It has fairly short, slightly forward curving ridged horns and the male has a short beard. *Ovis ammon cycloceros,* the rare Ustyurt Sheep, is also native to the Ustyurt Plateau. The male is chestnut in colour, has long, thick, strongly curving ridged horns and a black beard or ruff extending down the chest. The wild goat or ibex, *Capra sp.* is not generally native to Ustyurt. The habitat of *Capra aegagrus* is in the mountainous regions of Iran, while that of *Capra sibirica* is further east in the western Himalayas, the Pamirs and the mountain ranges bordering Xinjiang. The male has long broadly curving ridged horns and a pronounced beard.

[4] A honeycomb support successfully used for the conservation of all types of wall paintings recovered in archaeological contexts (see e.g. Ramirez Morales & Payueta Martínez 2008; Fray & Reutova 2013; Brajer 2002; Botticelli 1992; Nunes Pedroso 2012).

[5] The authors are grateful to Marjan Mashkour for advice on identification of the animal as *Capra sp. (sibirica/aegagrus).*

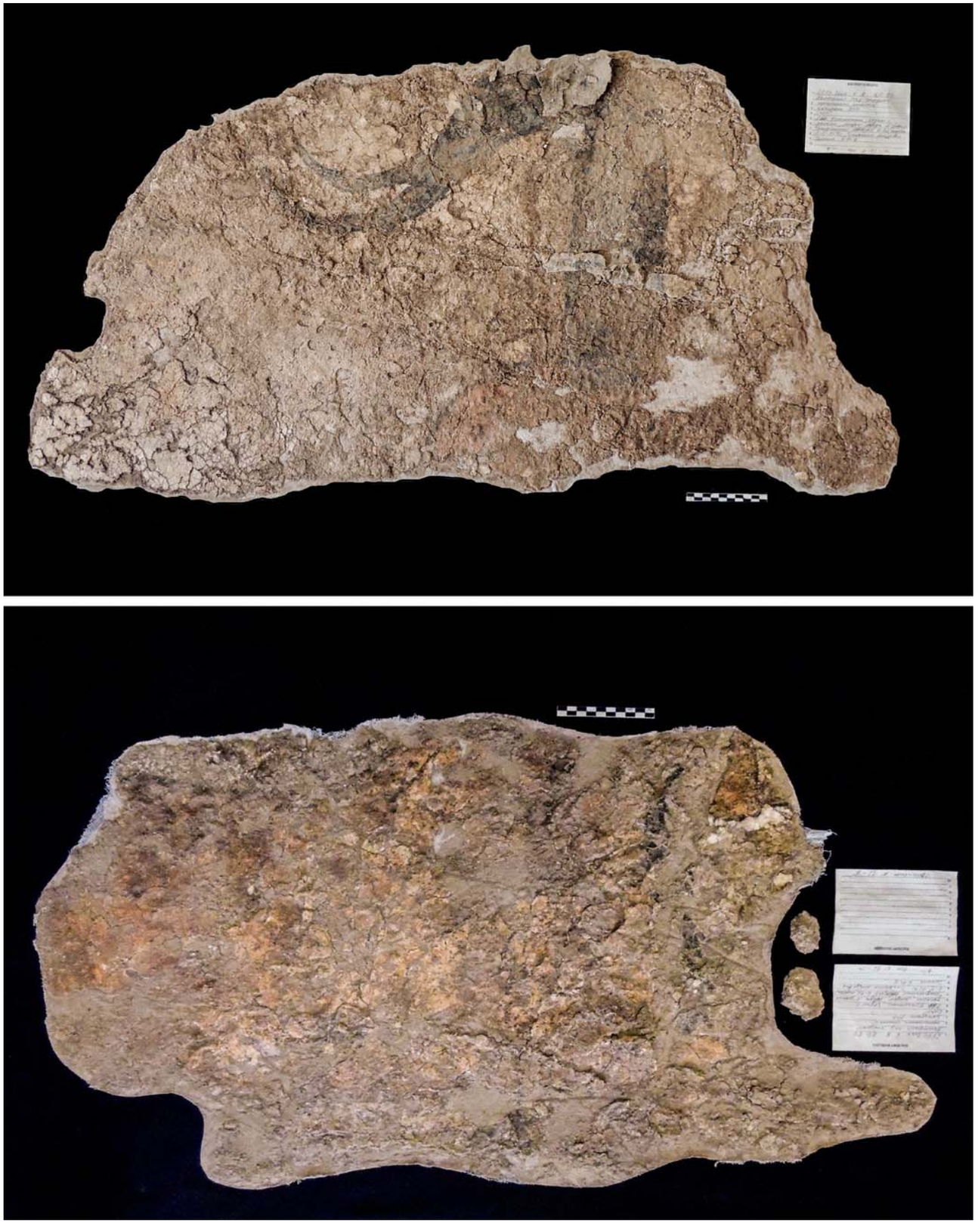

Fig. 6: The recumbent ibex before the final restoration.

The *saiga* antelope is considered because of the apparently broad square end of the nose. However, in the painting the nose is not prominent and the horns cannot reasonably be compared. *Ovis ammon cycloceros* is a serious contender, in particular because of the colour of its coat and its black beard or ruff. This differs from the beard of the ibex which is shorter and grows only on the chin. In general the two main differences between the wild sheep and the ibex are the beard and the horns, which in the sheep are shorter, thicker and more tightly curled. While we can exclude the *saiga* as too dissimilar, and given that the artist, if Chorasmian, is more likely to have been familiar with the Ustyurt Sheep, it seems most probable that he wished to portray an ibex, as commonly depicted in the Persian tradition, but produced a composite image based on personal knowledge and some imagination.

Thus the painting seems to be a depiction of *Capra (ibex) sibirica* or, more probably, *Capra aegagrus*, also known as "wild goat" or "bezoar"[6] in its *Capra a. aegragus* subspecies, and as "bearded goat" in its subspecies *Capra aegagrus turcmenica*[7]. In Iran *Capra aegagrus* is also conventionally known as "ibex"[8], the term commonly used to identify the long-horned *bovidae* recurrent in Persian arts and crafts[9]. It is argued here that due to the stylistic elements of Chorasmian wall painting, which point to a Persian/Achaemenid legacy, the animal represented should be seen as an ibex. In particular in this painting it is clear that the horns are stylised. They do not resemble those of any living animal, but they are certainly closer to those of *Capra a. aegagrus* (or *turcmenica*) which has scimitar-shaped horns that are also laterally compressed (Pidancier *et al.* 2006: 740), as well as a long beard that in the painting extends down the chest due to the recumbent position of the animal. It is very likely that the Chorasmian artists observed and used an object or a depiction of an ibex as "inspiration" for their work rather than a living creature. We might even speculate on the existence of cartoons with a style and an iconography with ancient ties in Achaemenid Persia.

The Persian legacy

The Chorasmian ibex in the painting is a static image represented in profile, seated, and with flexed rear and forelegs. The animal is passive, with a downward muzzle and back folded ears. This iconography is immediately comparable with Achaemenid objects such as *rhyta* (Fig. 7), bas-reliefs or even stone capitals from Susa and Persepolis representing different although similar herbivores (Fig. 8). The ibex lacks the common Achaemenid *stilema* of the rippled skin folds over its eyes but it is nevertheless close to the style of some Achaemenid *rhyta* such as the specimen held in the British Museum, possibly from Syria (Simpson 2005: 122, no. 120) the fragment of gold horse's head from the Oxus Treasure and the ibex rhyton from the "Seven Brothers" kurgan; these latter both with a similar simpler "eyelash" (Dalton 1905: pl. II, no. 9; Shepherd 1961, fig. 5). In addition its eye is very close to that of a stone statue of ibex from Persepolis (Schmidt 1957: pl. 36 c — discussed *infra*) and the faded black lines on the muzzle of the painted ibex are reminiscent of the muscle representation on the muzzles of the bulls on Persepolitan capitals. The chin of the animal, separated from the body by a rounded protuberance, and its ear designed with a base composed by two rounded elements, is quite close to Persian antecedents. The nape of the neck is massive as in the Achaemenid *comparanda* noted above. Its nose is also characterized by a rounded protuberance but, unlike the Achaemenid examples, this element seems to have been simplified.

The painting is simple in its design, principally characterized by contour lines and without many flourishes and details. The iconography of the ibex is clearly reminiscent of Achaemenid art and the painting also displays an echo of its style. This characteristic of the 1st century BCE to 1st century CE Chorasmian mural art has been already discussed with regard to the wall painting fragments depicting Avestan gods from the main

[6] Cf. Wrobel 2007, *s.v.* no. 887 *Capra a. aegagrus* rendered in English as "bezoar ibex".
[7] Or *Capra a. blythi* — Wrobel 2007, nos. 887-888 and 890; cf. Shackleton in Pidancier *et al.* 2006: 741.
[8] E.g. Potts 2004.
[9] E.g. Shepherd 1961; Simpson 2005: 125; Curtis 2012: 45, no. 36.

Fig. 7: Achaemenid silver *rhyton*, Iran, 5th century BCE. The Metropolitan Museum of Art, Gift of Norbert Schimmel Trust, 1989. Accession Number: 1989.281.30 (www.metmuseum.org).

Fig. 8: Persepolis: bull-headed capital (photo M. Minardi).

hypostyle hall of the Central Building in Akchakhan-kala Area 10 (Betts *et al*. 2015; 2017), and with the ibex is now confirmed.

It might be supposed that Hellenistic *rhyta* or other post-Achaemenid objects stylistically comparable to their Persian models could have been the actual inspiration for such Achaemenid-inspired Chorasmian iconography[10], but the details on the depictions of the Avestan gods (Betts *et al*. 2015; 2017) underline the "archaic" character of the Chorasmian mural art of the period and it is fair to assume that the ibex lies on the same tracks. The absence of any naturalistic rendering of the animal — which instead bears Achaemenid formal traits — separates the Chorasmian ibex from other depictions of this or similar animals coming from the arts and crafts of the contemporary Hellenised East such as Parthia[11]. Ancient Chorasmia had a quite conservative culture up to the 2nd century CE, partially due to its geographic isolation, characterized by a strong local tradition originally ignited by the Persians (Minardi 2013; 2015).

The complexity, dimensions and extent of the pictorial programme of the Ceremonial Complex presuppose organization and numerous hands at work simultaneously. These hands were very likely part of a workshop and traces of red lines beneath the black contours of some of the paintings might indicate the use of cartoons, a necessary device to sketch the works due to their dimensions and density.

The Chorasmian ibex is so close to the iconography of Achaemenid objects and, on the other hand, so distant from a true representation that it might be inferred that the artists based their design on a cartoon, in its turn based on the observation of one of these objects, (e.g. a vessel?)[12] rather than observing a real animal[13]. This may be the reason why the style of the ibex is close to an artistic form at least three centuries earlier and in a medium, wall painting, that apparently appeared in Chorasmia only in Central Asian Hellenistic times (Minardi 2015; see also Kidd 2011). Hence it seems confirmed that a strong Achaemenid legacy permeated the culture of Ancient Chorasmia, together with a move toward new techniques, iconographies and tastes, as for example demonstrated by the contemporary fully Hellenistic unbaked-clay modelled sculpture of a *ketos* unearthed within the same Ceremonial Complex (Minardi 2016a). The result is an original visual expression that will further develop after the 2nd century CE.

The symbolic and religious connotation of the ibex in Achaemenid and post-Achaemenid Iran is unclear, although in the Avesta (Yašt 14.25) the god of victory Verethraghna/ Wahrām appears to Zarathushtra in various animal forms including that of a male ibex (von Gall 1986). Male ibexes appear in Persepolis on the window jambs of the Palace of Xerxes (Schmidt 1953, pl. 187). These animals, by contrast with the Chorasmian recumbent ibex, are lead by servants preceded by Persian attendants into side chambers. It has been hypothesised that these bas-reliefs are allusions to rituals involving the animals (Cool Root 2015: 28). Again in Persepolis two stone statues of standing ibexes were found at the entrance of the vestibule of the northeast tower of the Apadana (Schmidt 1957: 70, pl. 36 c). In Iran the ibex was an "animal of extraordinary social-religious meanings well before the arrival of the Persians" (Cool Root 2015: 28)[14] and several seals on the Persepolis

[10] The iconography of the crouching animal is still very rare in Ancient Chorasmia: apart from an enigmatic stone "capital" of uncertain provenance and dating held in Nukus (Manȳlov 1975), Chorasmian *rhyta* with animal *protomai* (since the 3rd century BCE) exceptionally show bent forelegs (e.g. Tolstov and Vaĭnberg 1967: fig. 46, no. 8). Cf. also the zoomorphic terminals (one preserved) of the torque depicting an ibex on an anthropomorphic ossuary from the vicinity of Koĭ-Krȳlgan-kala (Rapoport 1971: 70, 74-75 with fig. 32) with the same bent rear and forelegs although with a head facing the onlooker.

[11] See for instance the toreutic *rhyta* published in Pfrommer 1993 (nos. 66 and 71 of the catalogue. Cf. also for example the ivory *rhyta* from Old Nisa with animal/fantastic creature *protomai* - Pappalardo 2010). Usually the forelegs of the *protomai* of these *rhyta* are outstretched and not bent as common in the Achaemenid representations of *bovidae* (including other objects such as furniture fittings, e.g. the copper alloy ibex held in the British Museum acc. no. 130674). In Ai-Khanoum a stone *rhyton* in shape of a *bovidae* with bent fore and hind legs was found and compared with Achaemenid objects (Francfort 1984: pl. XIV, no. 7/0.742) but ultimately considered expression of a local artistic concept developed before the Persian conquest (*ib*. 27). Considering the Chorasmian ibex, the Ai-Khanoum specimen could actually be similarly pointing toward a Persian legacy in Bactriana although its style is more distant from its possible Persian archetypes compared with the Chorasmian painting.

[12] On the relations between Chorasmia and the Achaemenids, see Minardi 2015. Apparently the wall painting technique does not appear in the polity before the 3rd century BCE. Thus the Chorasmia artists created their models from traditional Persian-styled objects perhaps still in use (such is the case of the *akinakes* of the Avestan god from the Columned Hall of Akchakhan-kala — Betts *et al*. 2017).

[13] Or being inspired by a Hellenistic culture — cf. the contemporary gold ibex from Tillya-tepe (Sarianidi 1985: figs. 112-120); cf. *supra* note 11.

[14] On the representations of ibexes in Iran since prehistory, see Cool Root 2002 with lit.

Fortification Tablets underline its presence into the realm of ritual practice (*ib.*) also explicitly in association with Zoroastrianism (Cool Root 2002: 192).

Although the deer is the main and recurrent zoomorphic element within the material culture of the Eurasian steppes, the ibex also had its symbolic role. Decorations of saddle-covers from Kurgan 1 at Pazyryk (early 3rd century BCE) depict scenes of ibexes preyed on by fantastic animals (Rudenko 1970, pls. 169-170). Ibex horns, actually gilded wooden imitations (Rudenko 1960: pls. 38, 70; Francfort *et al.* 1998: fig. 2; Samashev *et al.* 2000: fig. 19), were used to decorate some of the masks worn by the horses which were sacrificed and buried in the Altai kurgans from the 5th century BCE within the same "Pazyryk Culture". The main decorative element of the pointed *Sakā* hat of the Issyk "Golden Man" is a double protome of recumbent horses with ibex horns influenced by Achaemenid art (Akishev 1978: fig. 9). Recent excavations at the 5th century BCE Filippovka burial ground unearthed, among gold and silver Achaemenid objects, decorated vessels with ibexes (from Kurgan 4, Burial 4: Yablonsky 2010: figs. 18-19)[15].

Bactriana seems to have been an important centre for the transmission of Persian elements toward the Altai (Francfort *et al.* 2000: 791; Francfort *et al.* 2006; see also Francfort & Lepetz 2010). This is likely also the case with regard to Ancient Chorasmia which was probably under the control of the Bactrian satrapy up to Bessus' defeat and from which the polity received later its first Hellenistic cultural elements (Minardi 2015; 2016a; 2016b). Chorasmia might have been one of the centres across which the routes of iconographic transmission of Persian elements from Bactriana travelled (as suggested by Francfort *et al.* 2006: 125) and also where iconographic models developed and became influential, as in the case of the 1st century BCE to 1st century CE bird-priests (Betts *et al.* 2015). The case of the Hellenistic Chorasmian *ketos* (Minardi 2016a) — one of the earliest in the whole of Central Asia — underlines the same path of cultural transmission from the Central Asian south through Chorasmia toward the steppes.

The Chorasmian ibex, as with the other "conservative" iconographic and stylistic elements of the Akchakhan-kala wall paintings (Betts *et al.* 2015; 2017), could be seen therefore as the product of the original receptiveness of Chorasmian culture in the early years of its state-based history and as a part of the evidence regarding the strong traditional character that this culture developed as it matured. Perhaps the religious significance of the Akchakhan-kala wall paintings partially explains this characteristic. The painter of the ibex, by contrast with the coroplaster of the Hellenistic modelled *ketos,* was probably a local individual working for a Chorasmian workshop that had a defined iconographic tradition and heritage. Unfortunately, for lack of evidence, we do not know much of the very early stages of the Chorasmian reception and elaboration of such Achaemenid models.

Symbolic meaning

It seems, as discussed above, that the animal depicted is a wild goat, from the species *Capra a. Sibirica*, or probably rather *Capra a. aegragus*, inhabiting the mountain areas of Iran and Afghanistan and commonly known in Western literature as ibex. In any case the depiction does not strictly conform to nature: the horns, though retaining some realistic features of the ibex (lateral compression, slightly prominent nodosities, very pointed ends), have been treated in a deliberately strange manner, with their initial part rising vertically and a full counter-curve at the back, features never observed on any real animal of the species under consideration. These animals indeed do not live in Chorasmia today and probably did not in the past, but, despite likely access to faithful models (which certainly were available through imported objects from Iran), it seems that the artist has deliberately created a partly fantastic creature, or more precisely a creature endowed with partly fantastic horns. The strength of the horns is further enhanced by the strictly profile view, which results in both horns combining their black mass. It is certainly not by chance that the artist chose this part of the animal body to display his fantasy, considering its symbolic importance. It is precisely the shape of horns that in the Avesta

[15] Cf. the Scythian "Seven Brothers" kurgan in which an Achaemenid *rhyton* with a winged ibex protome was found (Goroncharovskij 2010). On the Filippovka specimens, see also Treister 2010.

are used as *pars pro toto* to characterize wild rams and goats. The horns are also, sometimes together with the skull, the parts which are kept for ritual purposes, as any visitor of *mazars* in Central Asia can easily see. The skull and horns of a mountain ram, decorated with copper bands, were deposited as a votive offering in one of the two settlement temples at Toprak-kala (4th/5th century CE)[16]. In the same period horns of rams or ibexes were deposited during the last phase of the Oxus temple at Takht-i Sangin[17].

Considering the importance of Zoroastrian symbols in at least one other part of the Ceremonial Complex (the main Hypostyle Hall — Betts *et al*. 2015; Minardi & Betts 2016), we are invited to look in the Avesta for a possible supra-natural significance of the wild goat.

In the whole subsisting Avesta this animal is mentioned in only one circumstance, as the ninth of ten "forms" (*kəhrpa*) through which Verethraghna, god of Victory (etymologically "the Defence breaker"), appeared to Zoroaster (Yašt 14. 1-27). The preceding manifestations are: a wind, a bull, a horse, a rutting camel, a boar, a boy of fifteen, a hawk, a wild ram; then comes the wild goat, followed by an adult warrior. The ram (*maēša*) is said to be "wild, beautiful, with horns curved inwards (*niuuaštakō.sruua*)", while the goat (*būza*) is "wild, beautiful, with pointed horns (*tiži.sruua*)".

In the iconography of Verethraghna (Bactrian Urlaghn, Middle Persian Wahrām) several of these manifestations were chosen in turn, as his symbols or more often as attributes of his anthropomorphic appearance. Kushan coins show him as a warrior (10th manifestation), looking exactly as a Kushan king, with a hawk in his headdress (7th manifestation)[18]. In Sasanian art, crowns worn by King Wahrām II, his queen and their son also named Wahrām have *protomai* of a horse, a boar and a hawk (3rd, 5th and 7th manifestations), alternating from one crown to the other according to the successive issues[19], while recurrent images of a boar appearing in various medias are often considered as symbolizing the god Wahrām[20]. A figure stamped on an ossuary in the Shahr-i Sabz museum (Fig. 9; see also the "additional note" below) shows a young man clad in armour, carrying multiple weapons (sword, mace, spear), with his head surmounted by the heads of a horse and (most probably) a camel, back to back; it is tempting to recognize Wahrām combining his 3rd, 4th and 10th manifestations.

Admittedly the wild goat has not yet been reported in images clearly associated with Wahrām, but such images as known today are not many. The question of a symbolic association with the god can be raised at least concerning two Sogdian dishes showing an ibex with a ribbon, in one case reclining behind an also reclining mountain ram without ribbons (Fig. 10)[21]: are these the last two animal manifestation, with the second one endowed with a dignifying royal attribute?

As for the Akchakhan-kala painting, the life-size, partly fantastic animal appears to have been painted as a self-contained composition and not as part of a frieze nor a composition where it would have been placed next to others; therefore it was surely endowed with a powerful symbolic significance of its own. One can seriously contemplate the possibility that it was chosen to evoke Wahrām's last animal manifestation, which in the Avestan text comes just before the "beautiful, distinguished, Mazdah-created warrior (who) carries a sword / dagger (*karəta*) incrusted with gold, all ornamented with diverse ornaments" — a description which could well call to mind the King himself.

[16] Nerazik & Rapoport 1981: 53, fig. 29.

[17] Information supplied by the excavator Anzhelina Druzhinina. These finds are apparently still unpublished.

[18] Shenkar 2014: 161 and pl. 30.

[19] See most recently Gyselen 2010 (esp. 195, 198, figs. 16-18, 21-28).

[20] The ram with a ribbon is generally considered as a symbol of Farn to whom the ram is explicitly associated in *Kārnāmag ī Ardaxsēr ī Pābagān* (IV.11-24, VIII.7), but one cannot exclude that in certain contexts it could also function as an image of Wahrām's 8th manifestation.

[21] Marshak 1971: 22, Pls. 27, 28. Marshak 1986: 48-49, figs. 20-21, 27-28. He dated both cups to the first half of the 8th century CE and attributed them to a specific school of Sogdian masters working either in Sogdiana or in Umayyad-occupied Merv, but he did not commit himself to a mythological interpretation. On the other hand, Marshak & Raspopova 1990: 137-145, figs. 16-17, identified the Sogdian divine couple of the god seated on a camel and the goddess seated on a ram as Wahrām and his consort (not named in any text), an interpretation that cannot be considered certain.

Fig. 9: Stamped figure on ossuary from Shatri, c. 7th century CE. Shahr-i Sabz Museum (photo F. Grenet).

Fig. 10: Sogdian goblet found in Gutova. The Hermitage Museum (after Marshak 1971: pl. 28).

Summary

This new painting is so far unique to the Akchakhan-kala corpus, in its content and its location. However, it must be assumed that, like the other paintings, it addresses the common themes of dynastic kingship strengthened though divine association. As such, it is logical to seek its meaning in Avestan symbolism and there are good grounds for its identification with Verethraghna/Wahrām, god of Victory. The style of the painting is as important as the subject matter. It appears to show a conservatism that recalls Achaemenid art, seeming to draw little from post-Achaemenid models to be found in the later Hellenised Central Asian corpora. The use of an "archaic" iconography in some of the 1st century BCE — 1st century CE wall paintings of Ancient Chorasmia should not be considered a conscious choice related, for instance, to royal propaganda. Rather, it should be seen as the result of the developing artistic concepts in the polity, which, in general, was balanced between a very strong, locally established tradition and foreign innovations that were already widespread in Central Asia.

Additional note: a new iconographic type of Wahrām at Shahr-i Sabz[22]

In 2012 an ossuary with a still unattested decoration, containing bones of one individual, was found by local farmers when digging a canal branch on a vast urban site (about 100 hectares with a central citadel high 12 meters), in the village Shatri situated in the Kitab district, a zone which in pre-Islamic times was the centre of the Shahr-i Sabz oasis, then the kingdom of Kēsh famous in historical records, both Chinese (where it is named *Shi*) and Arab. The site would certainly deserve major excavations, though the task is complicated by the presence of a Muslim cemetery.

The ossuary, made of baked clay, is rectangular (dimensions: length 90 cm, width 30 cm, height 34 cm), with rounded corners (Fig. 11). It has a crenelated parapet and a flat movable lid with a handle. The front side carries at its upper part the usual motifs of punched circles and cross-like incisions. Below, a series a three figures, stamped from the same matrix, stand under arcatures resting on schematized columns. In addition the rounded corners have two empty arcatures. Each figure is set within a rectangular frame ending in a triangle at its top; the frame is marked by zigzags on all sides, except at the bottom where they are replaced by dots.

The standing figure (Fig. 9) is a man with moustache but no beard. He has round earrings. He is clad in lamellar armour and is meant to appear as a superlative warrior, for he carries three offensive weapons at the same time: a mace upon which his right hand rests, a long sword at his belt ending with an indistinct animal head, and a spear he grasps with his left hand below the head. The most unusual, indeed unique, attribute is a pair of different animal heads set back to back just above his fringe, no structural element of a headgear being visible. The long head on the left is clearly a horse. The shorter head on the right looks like a camel rather than any other animal: see the prominent rounded muzzle, the long straight lower jaw, the wide short upright ear. A ram or a caprid is excluded because in such cases the horns would certainly have been shown.

If the identification of the animals is correct, the god is most probably Wahrām carrying on his head the symbols of his 3rd and 4th animal manifestations. His repeated presence on the front part of the ossuary could have a protective function. Also, Wahrām is mentioned among the deities helping the soul arriving in Paradise, in the *Ardā Wīrāz nāmag* (V.3) and possibly in Kerdir's inscription[23].

[22] Frantz Grenet with Nabi Khushvaktov and Ulugbek Olimov (Director and Assistant in the Shahr-i Sabz Museum, Uzbekistan).

[23] See Grenet 2011: 133 (he could be the "horseman with a banner" mentioned in § 25, while "Wahrām" explicitly mentioned in § 33 is more probably the planet Mars than the god).

Fig. 11: Ossuary from Shatri, c. 7th century CE. Shahr-i Sabz Museum (photo F. Grenet).

Bibliography

AKISHEV, K.A., 1978. *Kurgan Issȳk*, Moscow.

BAKER-BRITE, E., 2006. *Social processes in the production of wall paintings at Kazakhl'i-yatkan, Uzbekistan* (unpublished Masters thesis, University of California, Los Angeles).

BETTS, A.V.G., BONNAT, M., KIDD, F., GRENET, F., KASHIMOV, S., KHOZHANIYAZOV, G. & MINARDI, M., 2015. Des divinités avestiques sur les peintures murales d'Akchakhan-kala, Ouzbékistan, *Comptes rendus de l'Académie des Inscriptions et Belles-Lettres*, 3: 1369-1396.

BETTS, A.V.G., YAGODIN, V.N., GRENET, F., KIDD, F., MINARDI, M., BONNAT, M. & KHASHIMOV, S., 2017. The Akchakhan-kala wall paintings: new perspectives on kingship and religion in Ancient Chorasmia, *Journal of Inner Asian Art and Archaeology*, 7 (in press).

BETTS, A.V.G., YAGODIN, V.N., HELMS, S.W., KHOZHANIYAZOV, G., AMIROV, S.S. & NEGUS-CLEARY, M., 2009. Karakalpak-Australian excavations in Ancient Chorasmia, 2001-2005: interim report on the fortifications of Kazakl'i-yatkan and regional survey, *Iran*, 47: 33-55.

BOTTICELLI, G., 1992. *Metodologia di restauro delle pitture murali*, Florence.

BRAJER, I., 2002. *The transfer of wall paintings based on Danish experience*, London.

COOL ROOT, M., 2002. Animals in the art of ancient Iran, in: B.J. Collins (ed.), *A history of the animal world the Ancient Near East*, Leiden: 169-210.

———, 2015. Achaemenid imperial architecture: performative porticoes of Persepolis, in: S. Babaie & T. Grigor (eds.), *Persian kingship and architecture: strategies of power in Iran from the Achaemenids to the Pahlavis*, London: 1-64.

CURTIS, J., 2012. *The Oxus Treasure (British Museum Objects in Focus)*, London.

DALTON, O.M., 1905. *The Treasure of the Oxus: with other objects from Ancient Persia and India*, London.

FRANCFORT, H.P., 1984. *Fouilles d'Aï Khanoum III. Le sanctuaire du temple a niches indentes. 2. Les trouvailles*, (= MDAFA 27), Paris.

FRANCFORT, H.P. & LEPETZ, S., 2010. Les chevaux de Berel' (Altaï) — Chevaux steppiques et chevaux achéménides: haras et races, in: A. Gardeisen, E. Furet & N. Boulbes (eds.), *Histoire d'équidés des textes, des images et des os. Actes de la table-ronde organisée par l'UMR 5140 Équipe Archéologie des Milieux et Ressources*, (= Monographies d'Archéologie Méditerranéenne, Hors-série 4), Lattes: 57-104.

FRANCFORT, H.P., LIGABUE, G. & SAMASHEV, Z., 1998. Découverte d'une tombe princière gelée d'époque scythe (IVe s. av. J.-C.) à Berel' dans l'Altaï (Kazakhstan oriental), *Comptes rendus de l'Académie des Inscriptions et Belles-Lettres*, 4: 1165-1175.

———, 2000. La fouille d'un kourgane scythe gelé du IVe siècle av. notre ère à Berel' dans l'Altaï (Kazakhstan), *Comptes rendus de l'Académie des Inscriptions et Belles-Lettres*, 2: 775-806.

———, 2006. Gold of the griffins: recent excavation of a frozen tomb in Kazakhstan, in: J. Aruz, A. Farkas & E. Valtz Fino (eds.), *The golden deer of Eurasia. Perspectives on the steppe nomads of the ancient world*, New York: 114-127.

FRAY, G. & REOUTOVA, M., 2013. Du terrain à la muséographie. La restauration de peintures murales en Ouzbékistan: Kazakl'i-Yatkan (Khorezm antique) et Afrasyab (Samarkand Qarakhanide), *Cahier d'Asie centrale*, 21/22: 603-621.

GORONCHAROVSKIJ, V., 2010. A silver rhyton with a representation of a winged ibex from the fourth Semibratniy tumulus, in: J. Nieling & E. Rehm (eds.), *Achaemenid impact in the Black Sea: communication of powers* (= Black Sea Studies 11), Aarhus: 87-102.

GRENET, F., 2011. Quelques nouvelles notes sur Kerdīr et 'sa' vision, in: R. Gyselen & C. Jullien (eds.), *'Maître pour l'éternité'. Florilège offert à Philippe Gignoux pour son 80e anniversaire*, Paris: 123-139.

GYSELEN, R., 2010. Les Wahramides (273-293 A.D.) : quelques aspects de leur langage monétaire, *Studia Iranica*, 39: 185-223.

KHASHIMOV, S., 2013. *"Made in China". Etude et restauration de fragments de peinture murale de Chine septentrionale (XIII-XIV siècle), Musée Guimet, Paris* (unpublished Masters thesis, Institut national du patrimoine - INP, Paris).

KIDD, F. & BAKER-BRITE, E. 2015. Colour in context: status indicators and elite dress in pre-Islamic Central Asia, *Arts Asiatiques*, 70: 33-48.

KIDD, F. & BETTS, A.V.G., 2010. Entre le fleuve et la steppe : nouvelles perspectives sur le Khorezm Ancien, *Comptes rendus de l'Académie des Inscriptions et Belles-Lettres*, 2: 637-686.

KIDD, F., 2011. Complex Connections: figurative art from Akchakhan-kala and the problematic question of relations between Khorezm and Parthia, *Topoi*, 17/1: 229-276.

———, 2012. The Procession scene at Akchakhan-kala, *Parthica*, 14: 69-92.

KIDD, F., NEGUS-CLEARY, M. & BAKER-BRITE, E., 2012. Public versus private: perspectives on the communication of power in Ancient Chorasmia, in: C. Hartley, G.B. Yazicioğlu & A.T. Smith (eds.), *Regimes and revolutions: materiality and authority across Eurasia from the past and the present*, Cambridge: 91-121.

KIDD, F., NEGUS-CLEARY, M., YAGODIN, V.N., BETTS, A.V.G. & BAKER-BRITE, E., 2008. Ancient Chorasmian mural art, *Bulletin of the Asia Institute,* 18: 69-95.

KOSHELENKO G. & LELEKOV L., 1972, "Zhivopis' drevnengo Khorezma", in: *SOOBShchENIE vsesoyuznoĭ tsentral'noĭ nauchnoĭ issledovatel'skoĭ laboratorii konservatsii i restavratsii* (VTsNILKR), Moscow.

MANŸLOV, Yu.P., 1975. Mramornÿe arkhitekturnÿe detali iz sultanuizdaga, *Sovetskaya Arkheologiya*, 3: 210-213.

MARSHAK, B.I., 1971. *Sogdiiskoe serebro*, Moscow.

———, 1986 [MARSCHAK, B.I. sic.]. *Silberschätze des Orients. Metallkunst des 3. - 13. Jahrhunderts und ihre Kontinuität*, Leipzig.

MARSHAK, B.I. & RASPOPOVA, V.I., 1990. Wall paintings from a house with a granary. Panjikent, 1st quarter of the eighth century A.D., *Silk Road Art and Archaeology*, 1: 123-176.

MINARDI, M., 2013. A four-armed goddess from Ancient Chorasmia: history, iconography and style of an Ancient Chorasmian icon, *Iran*, 51: 111-144.

———, 2015. *Ancient Chorasmia. A Polity between the semi-nomadic and sedentary cultural areas of Central Asia. Cultural interactions and local developments from the sixth century BC to the first century AD*, (= Acta Iranica 56), Leuven.

———, 2016a. The Hellenistic Chorasmian *ketos* of Akchakhan-kala, *Iranica Antiqua*, 51: 165-200.

———, 2016b. Elite, wine consumption and status symbols in Ancient Chorasmia, *Ancient Civilizations from Scythia to Siberia*, 22: 262-293.

———, 2016c. New data on the Central Monument of Akchakhan-kala, *Bulletin of the Asia Institute*, 26: 133-158.

MINARDI, M. & BETTS, A.V.G., 2016. Columned halls in Ancient Chorasmia, *Iran*, 55.

MINARDI, M. & KHOZHANIYAZOV, G., 2015. The Central Monument of Akchakhan-kala: fire temple, image shrine, or neither? Report on the 2014 field season, *Bulletin of the Asia Institute*, 25: 121-146.

NERAZIK, E.E. & RAPOPORT, Yu.A., 1981. *Gorodishche Toprak-Kala (raskopki 1965 - 1975 gg.)*, (= TKhAEE 12), Moscow.

NUNES PEDROSO, R., 2012. La restauration de la collection de peintures murales romaines de Strasbourg, in: A. Schnitzler (ed.), *Un art de l'illusion, peintures murales romaines en Alsace*, Strasbourg.

PAPPALARDO, E., 2010. *Nisa Partica: i rhyta ellenistici*, Florence.

PFROMMER, M., 1993. *Metalwork from the Hellenized East. Catalogue of the collections*, Malibu.

PIDANCIER, N., JORDAN, S., LUIKART, G. & TABERLET, P., 2006. Evolutionary history of the genus *Capra* (Mammalia, Artiodactyla): discordance between mitochondrial DNA and Y-chromosome phylogenies, *Molecular Phylogenetics and Evolution*, 40: 739-749.

POTTS, D.T., 2004. Ibex, *s.v. Encyclopaedia Iranica* XII/6: 613-615 (available on-line at http://www.iranicaonline.org/articles/ibex-persian).

RAMIREZ MORALES, S. & PAYUETA MARTÍNEZ, A., 2008. Intervención sobre las pinturas murales procedentes del larario de la Casa del Ninfeo del yacimiento arqueológico de Bilbilis. Parte I, *Kausis*, 5: 13-21.

RAPOPORT, Yu.A., 1971. *Iz istorii religii drevnego Khorezma (ossuarii)*, (= TKhAEE 6), Moscow.

RUDENKO, S.I., 1960. *Kul'tura naseleniya Tsentral'nogo Altaya v skifskoe vremya*, Moscow.

———, 1970. *Frozen tombs of Siberia: the Pazyryk burials of Iron-Age horsemen*, London.

SAMASHEV, Z., BAZARBAEVA, G.A., ZHUMABEKOVA, G.S. & FRANCFORT, H.P., 2000. Le kourgane de Berel' dans l'Altaï kazakhstanais, *Arts asiatiques*, 55/1: 5-20.

SARIANIDI, V.I., 1985. *The Golden hoard of Bactria: from the Tillya-tepe excavations in northern Afghanistan*, New York & Leningrad.

SCHMIDT, E.F., 1953. *Persepolis I. Structures. Reliefs. Inscriptions*, Chicago.

———, 1957. *Persepolis II. Contents of the Treasury and other discoveries*, Chicago.

SHENKAR, M., 2014. *Intangible spirits and graven images: the iconography of deities in the pre-Islamic Iranian world*, Leiden & Boston.

SHEPHERD, D.G., 1961. A bronze sculpture from Iran, *The Bulletin of the Cleveland Museum of Art*, 48/10: 255-258.

SIMPSON, St.J., 2005. The royal table, in J. Curtis & N. Tallis (eds.), *Forgotten empire: the world of Achaemenid Persia*, London: 104-131.

TOLSTOV, S.P., 1948a. *Drevniĭ Khorezm*, Moscow.

———, 1948b. *Po sledam drevnekhorezmiĭskoĭ tsivilizatsii*, Moscow.

———, 1962. *Po drevnim deltam Oksa i Yaksarta*, Moscow.

TOLSTOV, S.P. & VAĬNBERG, B.I., 1967. *Koĭ-Krȳlgan-kala - pamyatnik kul'turȳ drevnego Khorezma IV v. do n.é. - IV v. n.é.* (= TKhAEE 5), Moscow.

TREISTER, M.Yu., 2010. 'Achaemenid' and 'Achaemenid-inspired'. Goldware and silverware, jewellery and arms and their imitations to the north of the Achaemenid Empire, in: J. Nieling & E. Rehm (eds.), *Achaemenid impact in the Black Sea. Communication of powers,* (= Black Sea Studies 11), Aarhus: 223-279.

VON GALL, H., 1986. Tiere, *s.v. Wörterbuch der Mythologie. Altiranische und zoroastrische Mythologie*, Stuttgart: 444-446.

WROBEL, M., 2007. *Elsevier's dictionary of mammals*, Amsterdam.

YABLONSKY, L.T., 2010. New excavations of the early nomadic burial ground at Filippovka (Southern Ural Region, Russia), *American Journal of Archaeology*, 114/1: 129-143.

YAGODIN, V.N., BETTS, A.V.G., KIDD, F., BAKER-BRITE, E., KHOZHANIYAZOV, G., AMIROV, S.S., YAGODIN, V.V. & FRAY, G., 2009. Karakalpak-Australian excavations in Ancient Chorasmia. An interim report on the Kazakly-yatkan wall paintings: the portrait gallery, *Journal of Inner Asian Art and Archaeology,* 4: 7-42.

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