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THE ZOROASTRIAN FUNERARY BUILDING OF ANGKA MALAYA

Introduction

This paper presents the results of the 2016 field campaign of the Angka-kala Archaeological Expedition (AGKE)¹ at Angka Malaya (“Small Angka”),² a particular site of which the original function is here assumed to have been of funerary nature. The ruins of Angka Malaya (27 km north of the modern city of Turktul – N 41° 45’ 34”; E 61° 09’ 17”) stand close by the larger stronghold of Angka-kala³ in today’s Republic of Karakalpakstan (northern Uzbekistan), a territory once part of the antique Iranian polity of Ancient Chorasmia (*Fig. 1* and 2). The authors of this paper discovered the site during a 2014 survey undertaken

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1. The Angka-kala Archaeological Expedition (AGKE) is an Uzbek-French joint project that 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 and by the Research Institute of the Humanities, Academy of Sciences of Uzbekistan, Karakalpak branch, Nukus. The directors of the AGKE, authors of this paper, wish to thank G. Khozhaniyazov for his collaboration and advice to the project.
 2. Angka Malaya seemed to have been ignored by the Soviet archaeological and ethnographical “Khorezm Expedition” (KhAEE). The site was thus named in 2016 for its proximity to Angka-kala: “the castle of the angka” being the angka/‘*ankā*’ a mythological giant bird of the Arab folklore similar to a phoenix, associated with the Iranian *štmurgh* and very likely a species of heron (for further details, see PELLAT 2012; DE BLOIS 2012). See also TOLSTOV 1948b, p.21, on the local legend that gave its name to Angka-kala.
 3. TOLSTOV 1948a, p. 113-114, fig. 49-50; 1948b, p.31-32, fig. 5; NERAZIK 1976, p. 14-15; KHOZHANIYAZOV 1986; 2005, p.66, 234 with fig. 68.

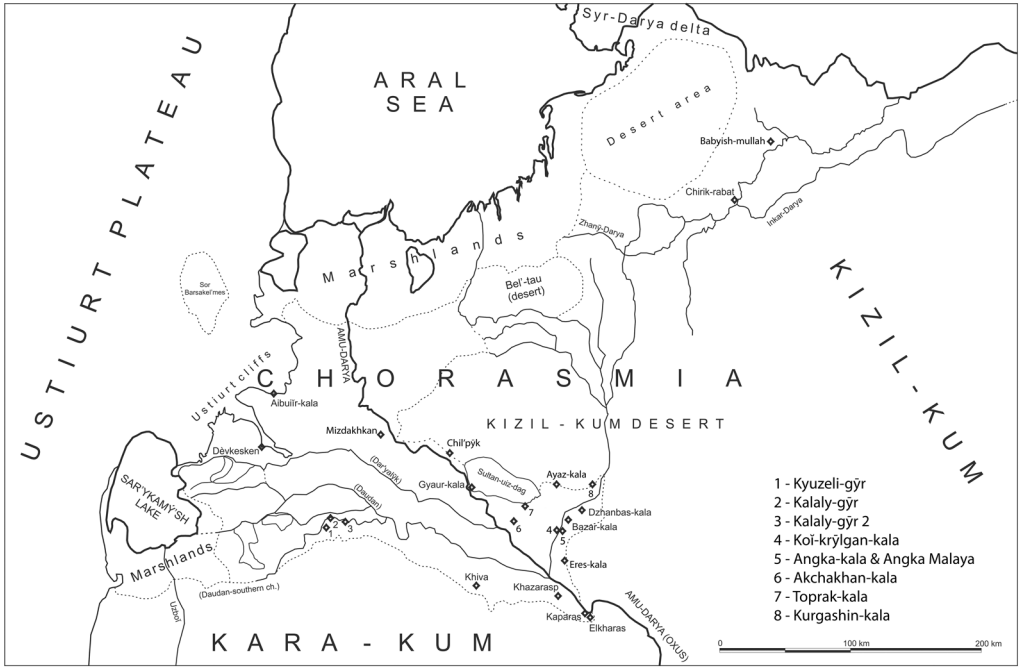


Fig.1 – Geographical outline of Ancient Chorasmia with location of the sites cited in the text.



Fig.2 – Satellite view of Angka-kala (A) and Angka Malaya (B).

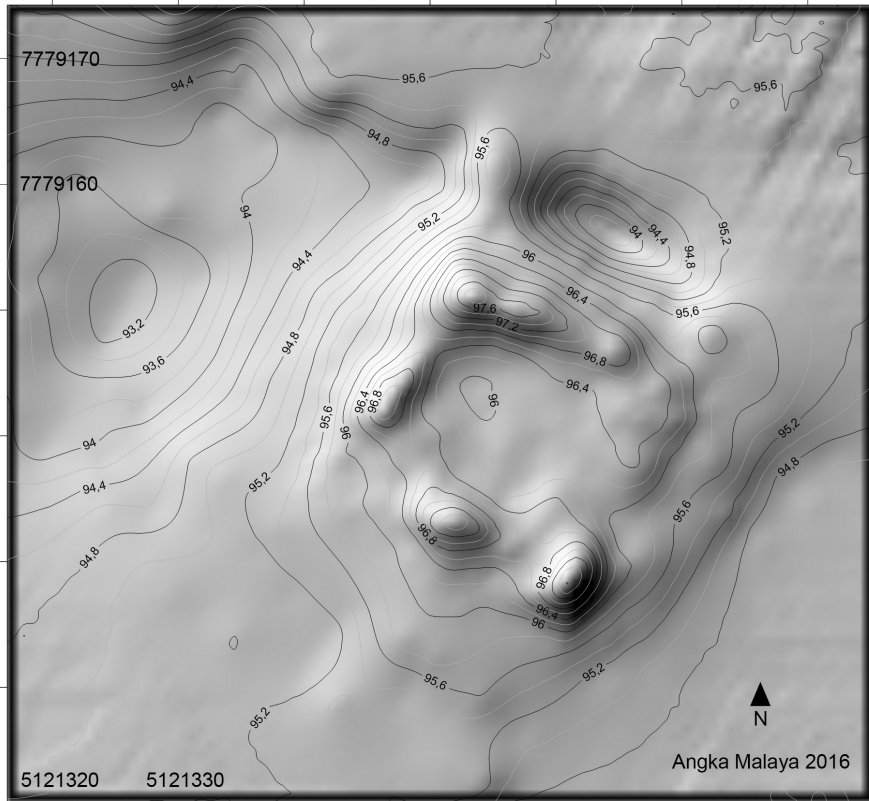


Fig.3– Shaded relief and contour maps of Angka Malaya (all measures are expressed in meters).

in the area as members of the Karakalpak-Australian Expedition to Ancient Chorasmia (KAE).⁴

When located, Angka Malaya was thickly covered with the halophilous type of vegetation common in most semi-arid areas of Karakalpakstan.⁵ The conformation of the terrain at the site made us ponder the possibility that we were looking at a small fortified structure (*Fig.3* and *4*).⁶ Considering that in antiquity the area that surrounds the landmark of Angka-kala was characterized by a dispersed

4. The KAE, led by A.V.G.Betts and G.Khozhanizayov, is a joint archaeological project of the University of Sydney and the Research Institute of the Humanities, Academy of Sciences of Uzbekistan, Karakalpak branch, Nukus. M.Minardi is a member since 2009; Sh.Amirov since its foundation in 1995.

5. For further details, see Reimov and Fayzieva 2014.

6. The ditch visible on the NE side of Angka Malaya in *Fig.3* is modern.



Fig. 4– General view of the site from the south-east after the vegetation removal.
(The scale visible at the centre of the site is equivalent to 3 m).

type of rural settlement,⁷ and that the surface finds seen during the preliminary survey were consistently of a domestic nature (mostly fragments of khoums/ storage vessels), a narrowing of the supposition regarding the identification of Angka Malaya with a fortified rural manor –or, more generally, with a minor fortification⁸ related to Angka-kala– seemed at that time a reasonable hypothesis.

The aim of the Uzbek-French project was, then, to explore the site in order to understand its nature and to collect data on a rarely studied, lesser type of Ancient Chorasmian settlement, of which not many examples are known, particularly regarding the period between the Ist century BC and the IInd century AD.⁹ Therefore, what the archaeological excavation eventually revealed was unexpected: Angka Malaya was neither a walled manor nor a small fortress but a peculiar and unique rectangular building marked by massive *pakhsa* walls (rammed clay structures installed in the form of squared blocks) surrounding an open unroofed space lacking direct access into it. In light of the available evidence, it is here assumed that Angka Malaya used to be, at least originally, a tower-*dakhma*.

-
7. NERAZIK 1976, p. 14-15, 22; ANDRIANOV 1969, p. 36, defined the Ancient Chorasmian landscapes of the “Kangyuñ and Kushan” periods characterized by “fortified cities and large not-fortified rural settlements surrounded by fields and vineyards”. “City” (as well as “castle”) is an improper term to define the larger Chorasmian strongholds and the Russian term *gorodishche* in its sense of “[main] ancient fortified settlement” is here preferred.
 8. Cf. e.g. the Antique 2 period sites of Tuprak-kala III (NERAZIK 1976, p. 20-22) and Kyunerli-kala (TOLSTOV 1948a, p. 101-102).
 9. The KAE in 2004 investigated Dali-kala, a fortified rural settlement at c. 650 m from the NE corner of the Lower Enclosure of the *gorodishche* Akchakhan-kala. For its preliminary description, see KHOZHANIYAZOV *et al.* 2004.

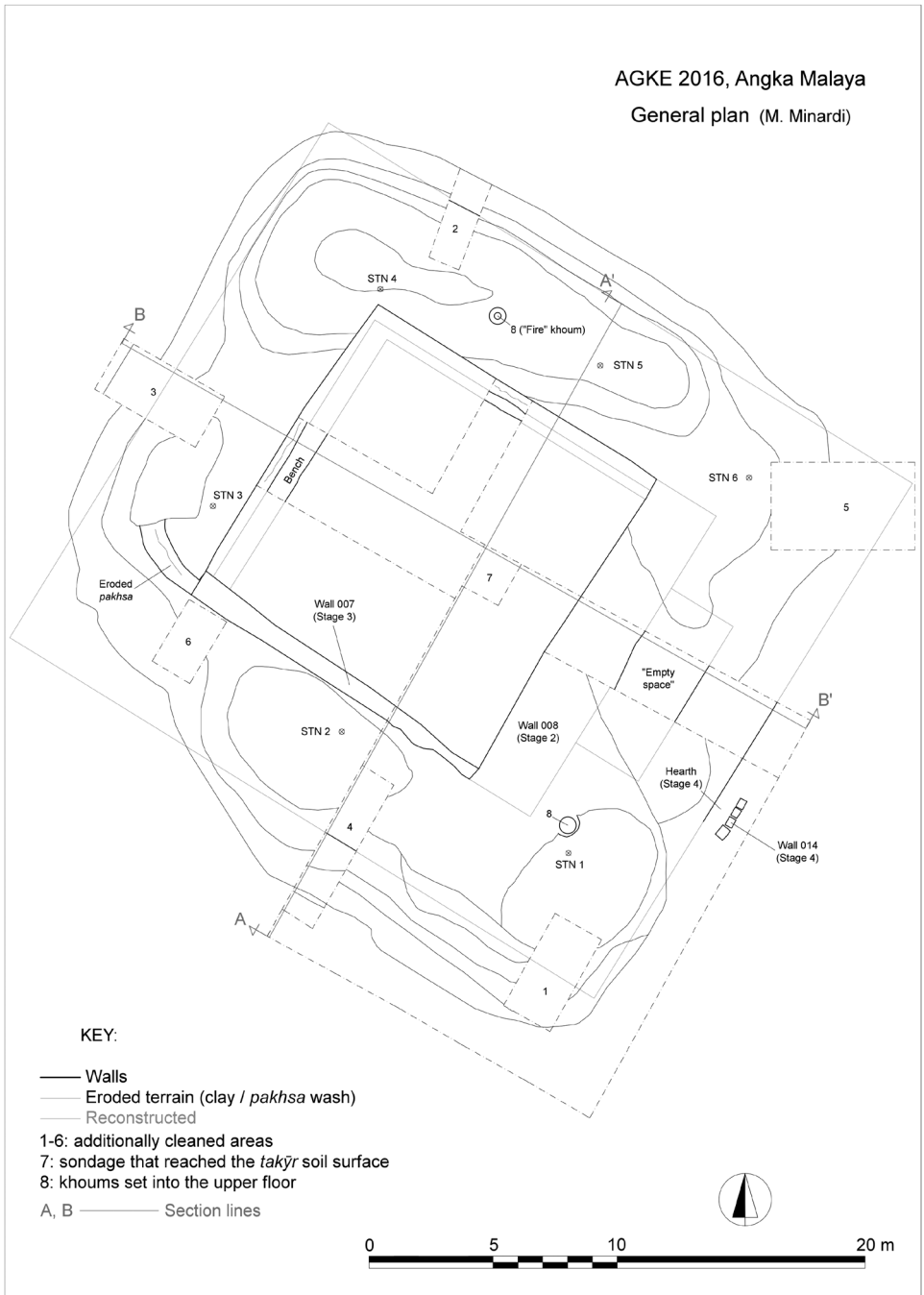


Fig.5 – General plan of Angka Malaya as surveyed in 2016.

Overview of the excavated structures

Angka Malaya consists of a rectangular building oriented on a SE–NW axis with a longer side of ca. 27.7 m and a shorter one of ca. 24.4 m covering a total area of approximately 676 sq. m (*Fig. 5*: general plan). The building presents only two rooms inside: a larger square central space with a side of 13 m and a smaller rectangular room measuring 7.3 m x 3 m (*Fig. 5*: “empty space”; *Fig. 6*: no. 015). The larger and main room is effectively a courtyard fit out with clay benches on two of its sides (the NW and NE ones), while the minor chamber was most likely so only during a construction phase (*infra*), as it originally formed a prolongation of the courtyard (*Fig. 6*).

The standing remains of Angka Malaya consist in a solid structure made of *pakhsa* blocks. Thus, the perimetric *pakhsa* “walls” of the site have been numbered and delimited for convenience (*Fig. 6*). None of the original brick elevations of the walls of Angka Malaya is still preserved except for some scant traces (*infra*). The walls of the site, already quite massive with a width of ca. 5.8 m, are additionally strong considering the general small scale of the monument. The two southern ones (walls 008 and 015) framing the smaller rectangular room differ from the rest, having a lesser breadth of 3 m. According to the evidence gathered, it seems that two further *pakhsa* “platforms” measuring ca. 6 x 8 m were arranged at the shorter sides of the “empty space” (*Fig. 5* and 6 – nos. 027 and 028).

Angka Malaya, viewed from the exterior, stood at least 3.7 m above the *tak̄yr* surface/natural soil level on which it was erected¹⁰ (except for walls 007 and 008 – see *infra*), while its interior was ca. 1.4 m raised above the same ground level (*Fig. 7*). The stratigraphic data collected show that Angka Malaya’s *pakhsa* walls were the first thing *ex nihilo* built on the chosen flat ground surface. The erection of the walls/structure of the edifice was immediately followed by the creation of context 009 (a homogeneous compact layer of clay) inside, likewise directly set on the same ground level of the walls in order to partially fill, and thus elevate, the space encompassed and resulting by their erection. Eventually, a layer of clay (003) with a thickness of c. 10 cm was laid on 009 and then overlain by the clay bench(es) bordering the interior of the courtyard. Context 003 is the internal floor level of Angka Malaya (see section, *Fig. 7*).

Stratigraphy and related evidence

The archaeological operations began with the complete removal of the shrub vegetation covering Angka Malaya and the surrounding area. To this action followed a thorough cleaning of the ground surface of the site. Due to the presence of greyish silty sand and lack of clay wash/debris in the central area of Angka

10. The excavation outside the boundaries of the monument in correspondence with the NW (025) and SE (011) walls has shown that these *pakhsa* basements were not built over 003 but instead on the *tak̄yr* surface (*Fig. 7*, section B-B’).

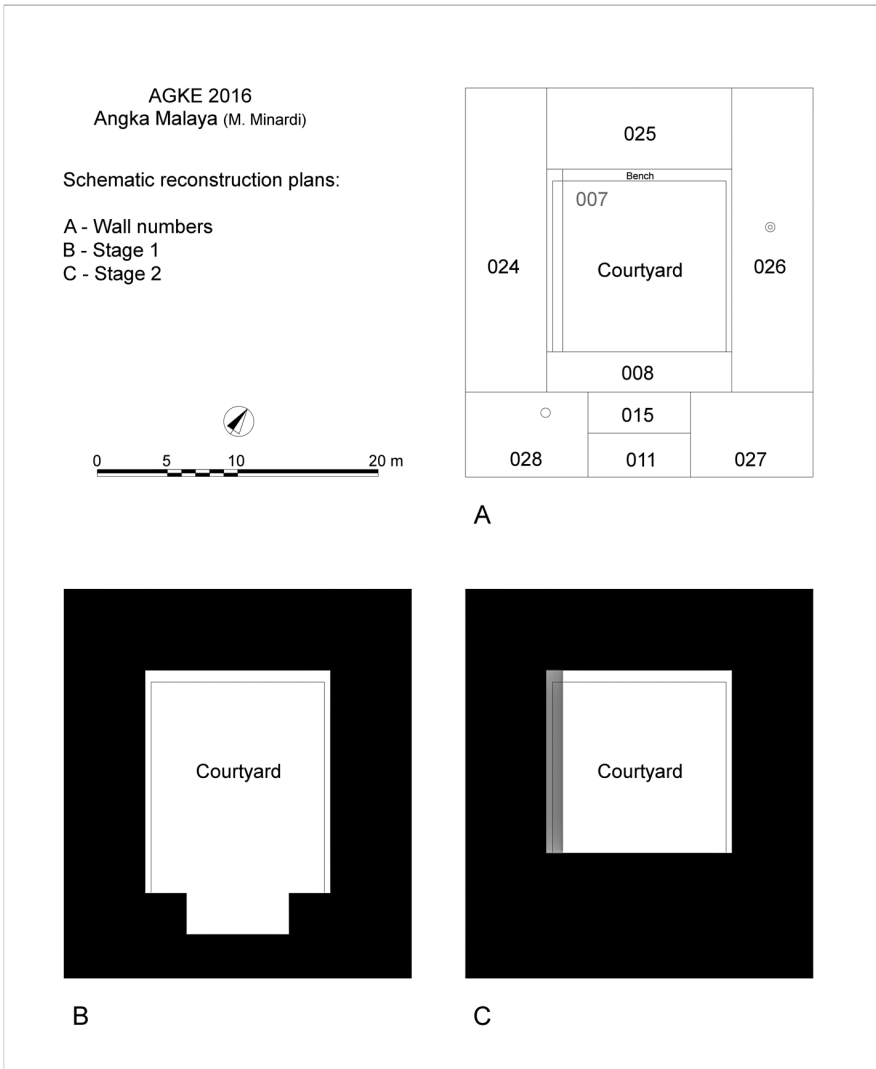


Fig.6– Schematic reconstruction plans of Angka Malaya.

Malaya, it became immediately evident that its layout was marked by a main central space (Fig.4).

The excavation started in the southern quadrant of the site (Fig.5: at its centre the survey benchmark STN 1) and continued in its central area in order to ascertain the function of this space and the possible existence of partition walls inside. Superficial clearances of terrain were carried out on selected areas with the aim to determine the limits of the structure (Fig.5, nos. 1-6), with the addition

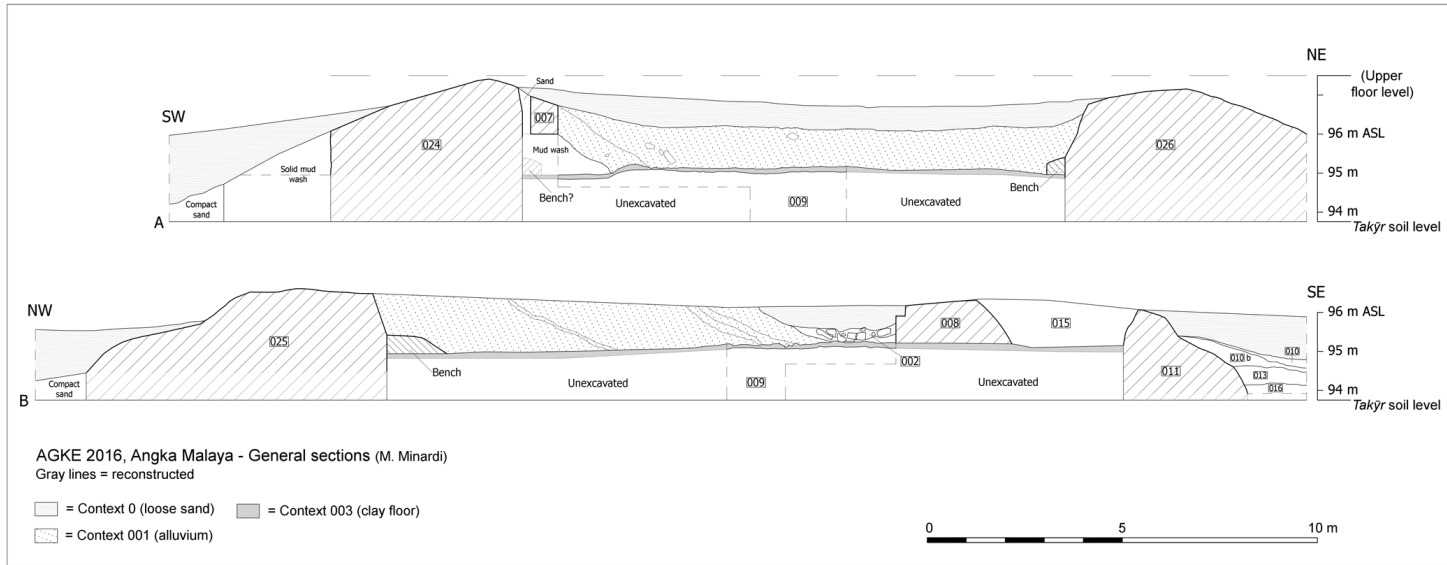


Fig.7– General sections of Angka Malaya.

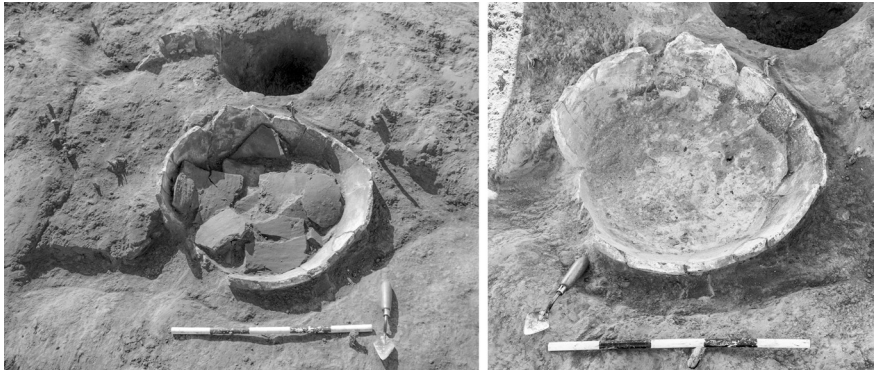


Fig.8– The khoum set into wall 026 containing ashes and embers before (A - left) and after (B - right) the removal of the collapsed potsherds.

of a small sondage made to verify the original ground level of the area (ib., no. 7). These latter supplementary cleanings were necessary due to the fact that after the abandonment of Angka Malaya, its *pakhsa* structures were largely washed off, literally melting away, making it at times very difficult to obtain precise data on their measurements without deeper soundings.¹¹ It seems clear that Angka Malaya, once deserted, was subject to a particularly strong (even compared to other contemporary Chorasmian sites)¹² phenomenon of erosion, very likely exacerbated by the lack of protective mud brick walls overlaying its clay structures. As a matter of fact, no mud bricks have been found *in situ* during the excavations –except for some poorly preserved remnants east of the survey benchmark STN

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11. Such as the case of no. 3 in Fig.5: the width of this side of Angka Malaya (NW) is hypothetical and it is reconstructed considering the conformation of the terrain (its relief is clearly given by the wash of the *pakhsa* structures) and by symmetry. The most external contour line in clearance no. 3 is a recorded limit of clay wash overlay by the sand that entirely covers the area around Angka Malaya. Clearances nos. 1, 5 and 6 were necessary to ascertain the massive nature of the areas (the *pakhsa* structures) on which they were built.
 12. E.g. the fortress of Angka-kala, built in the same period as Angka Malaya and likewise abandoned (for chronology *infra*), was still very much intact up to KhAEE times (e.g. TOLSTOV 1948b, fig. 5). Angka-kala is built, as well as most of the *gorodishch* and other buildings of Ancient Chorasmia, with a technique consisting in elevating walls of mud bricks on basements made of *pakhsa*. This happens already at Dingil'dzhe (VOROB'EVA 1973) in the Antique 1 period –for further references, see MINARDI 2015, p.76. The recent unfortunate collapse of some of the Angka-kala's structures was caused by the increased humidity of the terrain due to excavation of new irrigation canals in close proximity to the monument. The water absorbed by its *pakhsa* blocks compromises their integrity and causes the cave-in of the walls from below. By contrast, Angka Malaya was eroded in antiquity by rain and wind during a prolonged period of time.

4 (Fig. 5)– nor have contexts of debris been recorded, except for a small group of still aligned bricks collapsed into the courtyard from wall 008 and some other re-used specimens external to wall 011 (*infra*).

The discovery of two khoums set into cuts directly dug on the best preserved and most elevated edges of the *pakhsa* walls of Angka Malaya (Fig. 5: nos. 8; Fig. 8) indicates the existence at the site of a second upper floor level resting on top of these walls (Fig. 7: “upper floor level”). The two storage vessels belong very likely to the first and main stage of the life of the monument (on their chronology and for further considerations, see *infra*). Other khoums were probably also once lodged on top of the other *pakhsa* structures of Angka Malaya and their fragments were those identified on the ground during the first 2014 survey.¹³

The *in situ* presence and position of the khoum on “platform” 028, moreover, was essential in order to better comprehend the conformation of Angka Malaya in its southern part and the very existence of the “platforms” (Fig. 6: nos. 27, 28). “Platform” 028 is a massive *pakhsa* portion of the structure of the building (as proven by the sondage/clearance no. 1, Fig. 5), of which the reconstruction receives confirmation from observing the contour lines of the terrain in this area (i.e. its structural remains) and the presence of the “empty space.” On the opposite side, although much washed off by the elements, as is the whole eastern part of Angka Malaya,¹⁴ the reconstructed mirroring “platform” 027 is plausible thanks to the terrain clearance no. 5 which ascertained its likewise massive nature.

As mentioned above, the central space of Angka Malaya was never roofed so it must be considered as a courtyard. This courtyard has been excavated at its centre and on one of its corners for 40 % of its total extent (65 sq. m on a total of 161 sq. m excluding the clay bench). The investigation did not reveal any evidence related to column bases or traces of other supports such as post holes on its clay floor (context 003) that would have suggested the existence of the architectonic means necessary to even partially cover this 13 m broad space.¹⁵ Surprisingly

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13. In particular, context 001 (alluvium, see *infra* note 17) contained a considerable amount of fragments of khoums and few potsherds belonging to other types. The area has been previously lightly robbed by local diggers: of the two khoums found still *in situ*, the one bottom-down lodged into 028 was partially disturbed.
 14. The whole SE side of Angka Malaya, except for 028, is heavily washed: plausibly, at a certain point after its abandonment, due to the incline of the material accumulated inside the courtyard of the building from the north, this side of the structure broke, leaving the water flowing southwards.
 15. As for example in the main Columned Hall of Akchakhan-kala (ca. 14 x 19 m); on this hall and on the availability of wood in the region for architectural/structural elements, see MINARDI *et al.* forthcoming a. Although no ceramic pipes have been recorded during the excavation of the courtyard, it is reasonable to assume that this space was thus equipped to drain rainwater. Ceramic drain pipes are common in Chorasmia and recorded in sites such as Elkharas (LEVINA 2001, p. 75, fig. 74) and Akchakhan-kala (courtyard of the Ceremonial Complex, unpublished).

enough, no stratified occupation contexts were found overlying floor 003. The surface of floor 003 turned out to be characterised by a complete lack of finds.¹⁶ The whole courtyard was instead filled with alluvium material (greyish silty sand, for convenience single-numbered 001) of manifest natural formation.¹⁷

Even more surprisingly, due to the absence of any ground-level passages (doors, posterns or windows) in the solid *pakhsa* walls which enclose Angka Malaya, it was impossible to gain access to the building without the aid of a ladder (or similar device). Thus, to enter Angka Malaya's courtyard it was first necessary to climb the building walls and then, once the upper floor level was reached, to descend from it to the interior (more comfortably, since the floor level of the courtyard was raised above ground). The sole feature discovered in the courtyard is a clay bench that overlies floor 003 and leans against the walls 025 and 026. It is absent on the two other sides of the courtyard but it might have originally also existed there. The presence of this bench, in addition to the absence of partition walls, the occurrence of alluvium material and lack of any artificial/structural infill inside the courtyard seem to confirm that Angka Malaya was not a mere formwork/platform or a substructure, but that it had a specific purpose and function. The khoums, and in particular the one deprived of its bottom and lodged into wall 026 in an upside-down position and filled with layers of ashes and charcoals (*Fig. 8 B*), might be related to this specific purpose considering that in Chorasmia such modified vases are related to the extinguishing of fire and are used for the preservation of ashes and embers in ceremonial contexts.¹⁸

The excavation of the southern quadrant of the site allowed for the analysis of walls 007 and 008 (*Fig. 5*). If the former is certainly a post-abandonment constructive element (a flimsy but extended clay structure built in the interior of

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16. Except for two "Kushan" fragments of ceramic (rims) found on the surface of 003 most likely belonging to 002 –as already mentioned, no occupation layers were found overlying 003.
 17. Context 001 is composed by alluvia mostly accumulated by the strong wind blowing from the north-west. This is also confirmed by the presence of regular stripes of brown clay observable in 001 (single-numbered for convenience: *Fig. 7*, section B) which slope in the same direction and which are composed by the mud-wash of the walls formed most likely during some of the rare but strong seasonal Karakalpak rains. Moreover, considering the presence on the western and southern corners of the courtyard of a context of mud-wash/debris which overlies floor 003 and that is overlain by 001, it seems that the courtyard started to be filled by the action of natural agents only when its massive perimetral walls (which used to shield the interior of the building) commenced to yield after being first washed away outwards (see *Fig. 3*). See also *Fig. 7*, context of "mud wash" overlain by wall 007.
 18. As in the Fire Temple of Tash-k'irman-tepe or at the southern gate of the Ceremonial Complex of Akchakhan-kala: KAE, unpublished. At Old Nisa such use of khoums is also attested but reused in a different economic context (LIPPOLIS and MANASSERO 2015).



Fig. 9 – Context 002 viewed from the north-east. Note the small parallelepiped-shaped stone on the right of the picture.

the courtyard on the mud wash/debris of wall 024 which are overlain by 001) the latter, on the contrary, might have belonged to the original layout of Angka Malaya. But evidence indicates that similarly 008 belongs to a secondary stage: it is the only wall of Angka Malaya which overlies floor 003 (Fig. 7) and the *pakhsa* material used for its erection is much less compact and homogeneous in comparison to the other structures of the site. Another particularity of wall 008 consists in the fact that it was partially elevated with mud bricks (context 002, Fig. 9)¹⁹ – the only well-preserved specimens belonging to a wall elevation found in the whole site – not bound by a thick layer of clay mortar as customary in the architecture of Ancient Chorasmia.²⁰ Furthermore, on this side of the courtyard (south) there is no trace of the clay bench otherwise attested. The absence of the bench might indicate that this element was eliminated during the construction of 008 (although this remains rather hypothetical and the bench on this side could have been simply absent – Fig. 6, C).

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19. The collapsed mud bricks are localized in the excavated south quadrant of the courtyard. This context stops at a distance of 3.5 m from the eastern excavation limit.
 20. It is also observable that the debris of bricks belonging to 008 (context 002) overlay the upper stratum of 001 as visible in the section B-B' (Fig. 7). Considering what is assumed for 001 (*supra* note 16), the brick elevation of wall 008 crumbled much later than the moment the western *pakhsa* limit of Angka Malaya began to wash away. This might be another element to corroborate the hypothesis that wall 008 is a later addition.

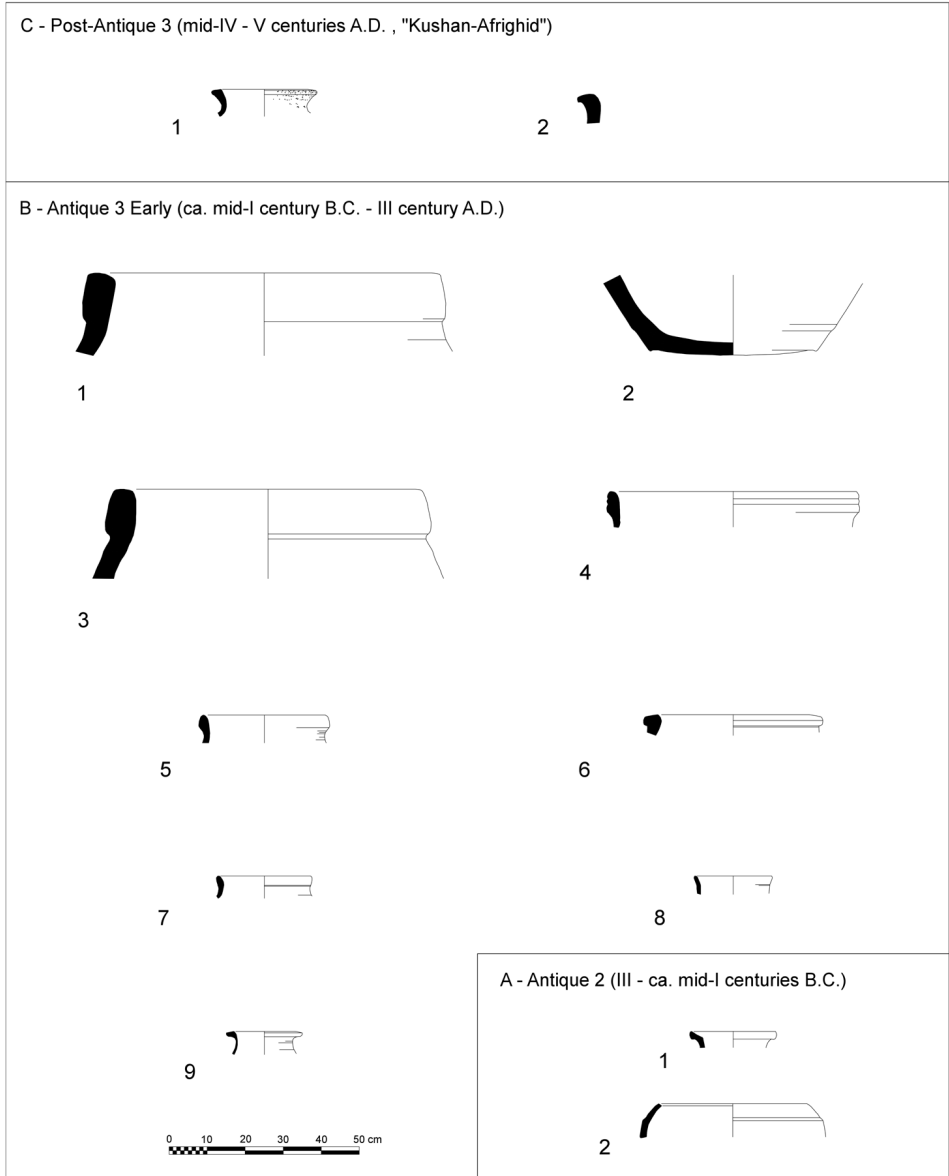


Fig. 10– Diagnostic potsherds from the excavation: A, 1 & 2, B, 4 & 7 - red slip ware; B, 5 - black slip ware; B, 2 - khoum set into wall 028; B, 3 - “fire khoum” set into wall 026; C, 1 & 2 - post-abandonment coarse ware. Context 002: A, 1; context 003: B, 5 & 6; context 010: B, 7 & 8; C, 1 & 2; context 015: A, 2; B, 4 & 9.



Fig. 11 – Reused fragmentary terracotta female statuette from context 015.

Hence wall 008, seemingly different from all the other walls of Angka Malaya, was formed by a smaller *pakhsa* basement –not much higher than currently preserved– overlying 003, and by an elevation of mud bricks (002) of approximately 1 m high.²¹ In addition, from context 002 comes a parallelepiped of rosy sandstone measuring 15 x 15 x 5 cm evidently reused in the upper masonry of 008. Another identical, albeit fragmentary, specimen of this nicely shaped rosy stone has been recorded in context 015. These two small items might have belonged to the original decoration of the elevation of which nothing else has survived (see *infra*).

The chronology of wall 008 is significant in light of the fact that most of the ceramic and bone²² finds found at Angka Malaya come from its SE area external to its courtyard and adjacent to wall 008, more precisely from the homogeneous compact layer of clay which fills the “empty space”, i.e. context 015 (*Fig. 7*). This material might be associated with a second stage linked to an apparent modification of the original architectonic design (and perhaps of function) of the site (015 is an infill made to close the space resulting from the erection of wall 008 –the “empty space” was never so, except for a very short time during a building phase). It belongs to the so called Kangyuñ and Early Kushan typology, in order relative to the Antique 2 (IIIrd century BC–mid-Ist century BC) and Antique 3 (early, ca. mid-Ist

21. There are seven rows of mud bricks in context 002 displaced but still one on top of another. Wall 008 might have been however higher, reaching the upper floor level of Angka Malaya.

22. Mostly bovine bones.

century BC–IIIrd century AD) periods of the current Chorasmian periodization²³ (*Fig. 10*, A and B) including a recycled (as a spindle whorl?) female terracotta figurine (*Fig. 11*).²⁴ We note that early Antique 2 potsherds have been also found in context 009, i.e. the homogeneous infill clay layer used to superelevate the floor level of the courtyard, as well as sporadically in the debris 002 (belonging to wall 008) overlying the alluvium strata 001. So the earliest material recorded at Angka Malaya –belonging to the Antique 2 period– first appears isolated in the constructional infill of the building and secondly, with Antique 3 finds, in those contexts later created with reused construction material (including clay). Hence the Antique 2 material recorded in 009 was accidentally collected with the clay necessary to raise the floor level of the courtyard and likewise, although at a different and later time, with the infill 015.²⁵

On the other hand, the only potsherds of the “Kushan-Afrighid” period (*Fig. 10*, C: early Chorasmian “Afrighid” Period, ca. IV/Vth century AD)²⁶ were found outside the boundaries of the monument from contexts of mud wash between wall 011 and the limits of the excavation (*Fig. 7*: contexts 010, 013 and 016), where some unbounded bricks were reused to fit up a hearth/shelter at the repair of the northern winds by some squatters (*Fig. 5*: wall 014).

A carbon sample taken from charcoals contained in the well-sealed remains of the bottom up khoum lodged into wall 26 has provided a C14 calibrated date falling between the second quarter of the 1st century AD and the first quarter of

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23. MINARDI 2015, p.87-127. The shift from the Antique 2 to the Antique 3 period in Chorasmia seems to occur immediately before/with the beginning of Akchakhan-kala Stage 3 (i.e. 1st century BC–1st century AD. On this dating, BETTS *et al.* 2009; 2016).
24. The statuette is made with a single mould and is red-slipped. Similar specimens were recorded by the KhAEE in the vicinities of Angka-kala (TOLSTOV and VAINBERG 1967, p. 13); and in other nearby sites: Dzhanbas-kala (from the excavation of a rural dwelling of the Antique 2 period: VOROB’EVA and GERTMAN 1991), and Koï-krÿlgan-kala (TOLSTOV and VAINBERG 1967, p. 338, tab. XXV and p.340-342, tab. XXVII-XXX); on these terracotta figurines, see also VOROB’EVA 1968; MINARDI 2015 with references.
25. Surface ceramic finds relative to the Antique 2 period are still present in the area: authors’ personal observation, survey 2016. Also, the Antique 2 pottery fragments recorded at the site clearly come from the clay wash of the *pakhsa* blocks constituting the walls in which they were unintentionally included very likely during the extraction/preparation of the building material in the surroundings.
26. Shards of this pottery typology were recorded by the KhAEE in relation to “small buildings” in the vicinities of Angka-kala (ANDRIANOV 1969, p.138). One of these buildings might have been Angka Malaya. The “Afrighid” terminology needs revision (MINARDI 2015, p. 116-117). On the “Kushan-Afrighid” chronology based on the KhAEE ceramic typology, see KHOZHANIYAZOV 2005.

the IInd century AD (21-133 AD).²⁷ This datum corresponds with the typology (“Kushan”) of the two *in situ* khoums of Angka Malaya relative to the Antique 3 period. They most likely belong to the main stage of the structure, i.e. its erection.

To sum up, it is possible to advance for Angka Malaya a four-stage periodization: during the first and main stage (Fig. 6, B), the inner courtyard of the building had a rectangular plan with an additional contiguous large niche at its south. In the second stage, the niche was first closed by wall 008 and then sealed/filled with context 015 (Fig. 6, C) containing mixed material and dating not later than the IIIrd century AD (i.e. *terminus ante quem* is the end of the Antique 3 period). That wall 008 was built in a different technique (reemployment of bricks for its elevation and a less accurately prepared *pakhsa* basement) might indicate that the second stage followed a period of abandonment and/or perhaps a change of use of the building. Wall 007, on the other hand, seems to belong to a third post-abandonment stage as it is built on the mud wash of wall 024 (which overlies 008 and is overlain by the alluvium 001) although apparently in connection with the previous Stage 2.²⁸ To a final fourth post-abandonment stage certainly belongs the external hearth dating not earlier than the mid-IVth century AD due to the presence of sporadic “Kushan-Afrighid” (post-Antique 3) potsherds in the associated contexts indicating this *terminus*. The absence of more recent material confirms what was already documented by the KhAEE about a general abandonment of the area in the IV/Vth century AD.²⁹

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27. Analysis and calibration undertaken at the Chrono Centre, Queen’s University Belfast. Laboratory identification: UBA-33190. Conventional C14 age: 1919±27 BP; 2 sigma range: 21-133 AD (relative area under probability distribution: 1.000); 1 sigma range: 59-91 AD; 98-124 AD (relative area under probability distribution: 0.587; 0.413).
28. Wall 007 is unlikely contemporaneous with 008 but it was probably erected not much later and in some connection with the apparent change of function of the site in Stage 2 (wall 007 cannot be associated with any floor levels other than 003). That it was built on the wash of wall 024 (and probably on the bench on this side of Angka Malaya) indicates that the site at that time had been already deprived of its mud bricks (*infra*). No post-Antique 3 finds come from the courtyard.
29. NERAZIK 1976, p. 13. See also the general archaeological map of Ancient Chorasnia in TOLSTOV 1962. Furthermore, Koï-krÿlgan-kala was ultimately abandoned at this epoch (the most extensively excavated site of the area, see TOLSTOV and VAÏNBERG 1967, p. 93-101; on the chronology of its early stages, see also MINARDI 2015, p. 87-96). The anthropomorphic ossuaries/urns discovered near Koï-krÿlgan-kala (in the ruins of rural dwellings) are generally considered by the KhAEE as the earliest Chorasmanian specimens. They are dated in the IIIrd century BC (with a concentration in production between the Ist century BC and the IInd century AD. TOLSTOV 1962, p. 130-133; RAPOPORT 1971, p. 38-46, 66) but ought to be considered more recent (MINARDI 2015, p. 92). The presence of these and other anthropomorphic (again from the ruins of a manor nearby Dzhanbas-kala, and from Adamli-kala and Bazar-kala: RAPOPORT 1971, p. 63-69), architectural (from the ruins of a manor nearby Dzhanbas-



Fig. 12 – General view of the excavation from the north corner of the building.
Angka-kala is visible on the background.

According to our data Angka Malaya appears then to have been a massive enclosure with an elevation from the natural soil level of at least 4 m, characterized by an apparent absence of entrances to its 160 sq. m courtyard equipped with benches, the use of which remains unclear (*Fig. 12*). The building is further characterized by evidence of activities which were performed on some top parts of its wall basements.

The chronic lack of mud bricks relative to the walls of the Angka Malaya needs further consideration. Bearing in mind that the only few unbounded bricks recorded within the building (002) are presumably *spolia* belonging to a secondary stage (as well as those likewise unbounded found around the post-abandonment hearth outside the building – 014) and that only limited traces of a mud-brick elevation have been observed in the northern part of the edifice (*Fig. 5* – about survey benchmark STN 4) the mud bricks of Angka Malaya ought to have been completely removed at a certain moment, probably at the end of Stage 1. In this regard, if it is not difficult to imagine a spontaneous collection and displacement of some mud bricks from a large abandoned and ruined structure for their reuse in minor works by some individuals living in the proximities of ruins (this seemingly is the case of walls 002 and certainly of 014), it is, on the other hand, harder, to imagine the deliberate destruction of a large edifice in order to collect its mud bricks for a new large-scale construction work. In a society such as that

kala– *ibidem*) and zoomorphic (from the surroundings of Angka-kala: *idem*, p. 76) ossuaries clearly confirms the fact that the area under scrutiny was deserted in the IV/Vth century AD, hence its structures were re-used as ossuary repositories as commonly observable in the whole of Ancient Chorasmia (cf. *infra* note 46). It seems that the Zoroastrian ossuaries of the Antique 2 and 3 periods were interred in the Sultan-uiz-dag (*infra*).

of Ancient Chorasmia, with an abundant low-cost/free labour force³⁰, it would have been much easier and safer (because reused mud bricks tend to crumble and because their conformity matters) to prepare *ex novo* the mud bricks necessary for a large construction than to completely despoil a hardly accessible site such as Angka Malaya. The bricks of the contemporary fortress of Angka-kala (founded between the Ist and the IIIrd century AD according to Khozhaniyazov)³¹ are still *in situ*. Hence, it is unlikely Angka Malaya was robbed of its mud bricks for their reuse elsewhere, and the only possible explanation for a complete and systematic despoiling of the mud-brick elevation of the site can be related to a ceremonial deconstruction as also pointed out by the clean state of the floor level of the courtyard as found when excavated (*infra* for discussion).³²

Ancient Chorasmia: historical background and religious context

The present-day Republic of Karakalpakstan together with the district of Khorezm in Uzbekistan, and the northern part of Turkmenistan (district of Daşoguz) constitute those territories once comprising the polity of Ancient Chorasmia (*Fig. 1*). This region, also known as “Pre-Aral” in Soviet archaeological literature, is divided into two parts (the “Right Bank” and “Left Bank” Chorasmia) by the Amu-Darya/Oxus which flows into the Aral Sea, crossing this territory for its entire length. The desert expanses of the Kizil-kum, Kara-kum and the Ustyurt Plateau physically confine Chorasmia within the Amu-Darya’s fertile delta between the steppes at its north and the rest of Central Asia at its south.

The polity of Ancient Chorasmia, first mentioned in *Yasht* 10 of the Avesta, emerged during the VIth century BC from an Eastern Iranian substratum of semi-nomadic type (characterised by regional differentiations) due to its inclusion within the political boundaries of the Achaemenid Empire.³³ The most evident outcome of such intervention is the appearance of monumental and prestige architecture³⁴ in relation to the establishment of large-scale irrigation systems necessary to

30. MINARDI 2015, p.84-85 with references.

31. KHOZHANIYAZOV 2005, p.66 with references; 250, fig. 97 (“Kushan” khoums of the same type of those found *in situ* at Angka Malaya).

32. A gradual plundering of mud-bricks, on the other hand, should have left some traces. The dimensions of the unbounded bricks of Angka Malaya correspond with those of Angka-kala (ca. 45 x 45 x 10 cm).

33. For a detailed account with exhaustive bibliographic references, see MINARDI 2015; MINARDI 2017.

34. MINARDI *et al.* forthcoming a.

increase and improve agriculture production in all the Chorasmian area.³⁵ The relatively isolated geographical position of the polity and the fact that Chorasmia was directly invested neither by Hellenism during Alexander's *anabasis* nor in the period which followed, marked the development of the strong traditional traits in the Chorasmian culture.³⁶

Since (and not before) the late IIIrd/IIInd century BC (i.e. the beginning of the Antique 2 period) up to the IInd century AD, only a few of the elements of the Hellenized culture of Central Asia were gradually selected and adopted by the elite of the region: about the mid-Ist century BC, it seems that Ancient Chorasmia commenced to better partake of the Hellenized cultural milieu of Central Asia due to increasing exchanges with the south.³⁷ However, it is only in the IInd century AD that this phenomenon of ample exchanges eventually progressed up to the point of including Chorasmia in a broader network of cultural relations and exchanges with the other neighbouring regions, a phenomenon that has to be considered in relation to the firm establishment of the Kushan empire in Asia.³⁸ This progressive cultural elaboration occurred during the Antique 3 period which is, since its beginnings at the turn of the first millennium, characterized by the emergence of a new typology of material culture incorrectly labelled (for chronological and historical factors) by the Soviet archaeologists "Kushan".³⁹

On the religious side, it is important to remark how the most recent archaeological discoveries of the KAE in Karakalpakstan have confirmed the Zoroastrian character of the Chorasmian worship⁴⁰ and so the Zoroastrian quality of the Chorasmian architectural forms since at least the Ist century BC–Ist century AD.⁴¹ In the past the archaeologists and ethnographers of the KhAEE had already

35. On the region's canals and its rural landscape, see GULYAMOV 1957; ANDRIANOV 1969; NERAZIK 1976.

36. For further details on the conservative traits of the Chorasmian culture, see MINARDI 2013; MINARDI and KHOZHANIYAZOV 2015; MINARDI 2016b; BETTS *et al.* 2015; 2016.

37. MINARDI 2015; 2016a; 2016c.

38. Toprak-kala exemplifies this change in architecture and arts, although most of its material culture (e.g. the ceramic typology) is the same attested at Akchakhan-kala. For further details, see MINARDI 2016b; MINARDI forthcoming papers. On Toprak-kala, mainly RAPOPORT and NERAZIK 1984; RAPOPORT 1993; 1994; NERAZIK and RAPOPORT 1981.

39. As proven by the KAE investigations at the site of Akchakhan-kala. On this chronology, see BETTS *et al.* 2009; MINARDI 2015. On the "Kushan" ceramic typology, see TOLSTOV and VOROB'EVA 1959, p. 144-169.

40. BETTS *et al.* 2015; 2016.

41. As in the cases of the Central Monument of Akchakhan-kala and of the Main Fire Altar of the Ceremonial Complex of the same site (MINARDI and KHOZHANIYAZOV

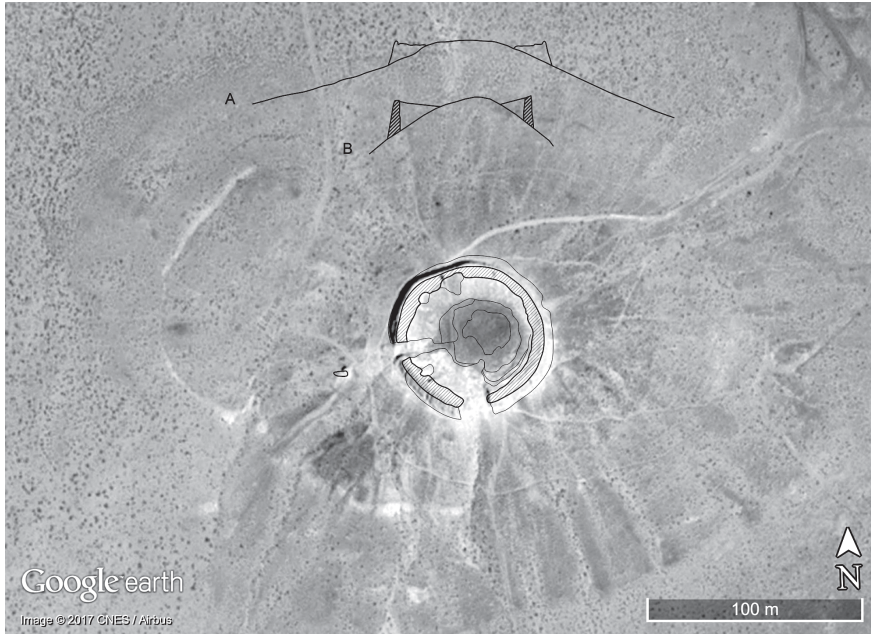


Fig. 13– Satellite view of the dakhma of Chil'p'yk with overlay drawings: general plan (redrawn after TOLSTOV 1948a, fig. 8) and sections: A - *ibidem*; B - schematic section after MAN'YLOV 1981, fig. 2.

correctly advanced this notion,⁴² but the final proof has only recently come with the discovery of the wall paintings of Akchakhan-kala depicting Avestan gods and dating from the 1st century BC–1st century AD.⁴³ These deities moreover, in the very specific context of the Ceremonial Complex of the royal and dynastic seat of Akchakhan-kala, express a complex ensemble of artistic and ideological elements which are related to an Achaemenid legacy still resilient in the culture of the polity at the time of their creation.⁴⁴

2015; MINARDI 2016b). See also BETTS and YAGODIN 2007; 2008, on the earlier Fire Temple of Tash-k'irman tepe. On the *dakhma* of Chil'p'yk, *infra*.

42. Following the onomastic evidence, burial practices and other sources (for further details, see MINARDI 2015 with lit.).
43. BETTS *et al.* 2015; 2016; see also MINARDI *et al.* forthcoming b.
44. *Ibidem*. They also show the adoption of new Asiatic-Hellenistic elements in Chorasmia (MINARDI forthcoming papers).

The Zoroastrian practices of the Chorasmians are witnessed by the most ancient *dakhma* (*daḵma*) of Asia and Iran, Chil'p'yk (*Fig. 13*),⁴⁵ and by the related practice of interment of bone repositories (*astōdāns*) on elevated places – being the Sultan-uiz-dag mountains⁴⁶ or vast necropolises on high ground⁴⁷ – common and widespread in the polity during the Antique 3 period.⁴⁸ The construction of Chil'p'yk is dated according to Man'yl'ov in the 1st century AD,⁴⁹ thanks to ceramic finds discovered inside the *dakhma*.⁵⁰ This isolated roughly circular enclosure (ca.

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45. Described in TOLSTOV 1948a, p.71-74; MAN'YLOV 1972, p.76-86; 1981; GRENET 1984, p.229; 2012; 2013.
46. Preliminary surveys conducted by the authors as members of the KAE in 2015 has revealed the presence of Zoroastrian ossuary burial grounds not exclusively contemporary with the main Chorasmian settlements of Akchakhan-kala and Toprak-kala, along with more recent kurgans with an extended chronology that needs to be clarified (AMIROV *et al.* forthcoming); these surveys confirm and integrate what was first observed by Man'yl'ov (1972; 1981).
47. E.g. Mizdakhkan (YAGODIN and KHODZHA'OV 1970) and Porl'y-tau (KHOZHANIYAZOV and AMIROV 2005). Also in abandoned buildings (e.g. Kalaly-g'yr 1: TOLSTOV 1962, p.114-117; RAPOPORT 1971, p.90-95) or *naus* cemeteries in Late Antiquity (e.g. Tok-kala: GUDKOVA 1964). On the burial practices of Central Asia, see GRENET 1984; see also LITVINSKIĬ and SEDOV 1984.
48. In the Antique 1 period inhumation is attested in the “Right Bank” Chorasmia, i.e. the area of Angka-kala. This is witnessed principally by the Bazar-kala necropolis (GUDKOVA and MAN'YLOV 1981) and by the “Alabaster Tomb” of Dingil'dzhe, both sites not far from Angka-kala (for further considerations, see MINARDI 2015, p.81, with note 402: these tombs have no burial mounds). Inhumation does not seem to concern the ensuing Antique 2 and 3 periods although further investigations are needed in order to ascertain this chronology. Gudkova and Man'yl'ov dated the Bazar-kala necropolis in the “IVth-IIIrd or Vth-IIIrd” centuries BC (GUDKOVA and MAN'YLOV 1981, p.166). They also reported on other isolated discoveries of inhumations in the area of Kof-kr'ylgan-kala, in that of Berkut-kala, near Bol'shoi K'yrk-k'yz and in “Left Bank” Chorasmia at Kunya-Uaz (*ibidem*, p.167). Therefore, these data are subject to two possible interpretations: a – in Chorasmia the burial custom changed from inhumation to ossuary burial in the course of the V-IVth or even IIIrd century BC, or, b – these entombed individuals belonged to a different ethnos/had a different burial custom (as hinted in GUDKOVA and MAN'YLOV 1981). On the possible shift from inhumation to ossuary burial practice of the Eastern Iranians “later enjoyed by the Avesta”, see BOYCE 1975, p.109-110; SHAHBAZI 1987 with references; see also BOYCE 1979, p.57-60; 1982, p.25-26; 210-211. For further considerations, see MINARDI 2017.
49. Cf. TOLSTOV 1948b, p.83, the hill of Chil'p'yk was transformed into a proper *dakhma* “at the begging of our era”.
50. MAN'YLOV 1972, p.80-81; 1981, p.54. As expected from a “tower of silence”, no buildings were discovered inside, nonetheless some potsherds of “Kushan” type were found along with some specimens of the VII-VIIIth centuries AD (MAN'YLOV

75 m diameter) is built of *pakhsa* blocks with a maximum elevation of 15 m and a width at the basement of 4.8 / 5.5 m while bricks are used exclusively inside to substructure the entrance.⁵¹

At this point, it is important to advance a hypothesis on the function of Angka Malaya has to be advanced, on the background of the elements belonging to the specific historical and religious context of Ancient Chorasmia.

Hypotheses on the function of Angka Malaya

Angka Malaya rises in a rural enclave dominated by the small *gorodishche/krepost* of Angka-kala which, according to Nerazik, had the same function of a fortified manor as control/defensive centre of the inhabited surroundings.⁵² South of the Angka sites, the easternmost of the main canals of the Chorasmian “Right Bank” irrigation network divided into two branches, an eastern one dominated by the *gorodishche* Bazar-kala, and a western one controlled by Dzhanbas-kala, another fortified site located more to the north.⁵³ A third branch possibly of this

1981, p.55). The presence of pottery finds might be related to ceremonial feasts (cf. BOYCE 1993). This *dakhma* shows how the “tower of silence” is an architectural type already developed well before the known examples of Iran built in the Islamic period. It is true that antique examples in Iran are scarce if not absent (on this purpose see RAHBAR 2007, *contra* GIGNOUX 2008). For further considerations on these structures in Central Asia, see the recent GRENET 2015, p. 142-144, with references.

51. MANYLOV 1972, p. 80-81; 1981, p. 54.
52. NERAZIK 1976, p. 14-15. 100/200 meters to the west and north-west of Angka-kala the remains of a “compact small open settlement” composed of no more than a dozen large unfortified dwellings at a distance of 50-60 m from each other were recorded by the KhAEE. To the south of this village, between Angka-kala, Koï-Krÿlgan-kala and the later Adamli-kala, traces of the individual habitation units were noted “widely scattered in the fields”. Thus, since the mid-Ist century BC this area is determined to be a “widespread dispersed settlement type” and Angka-kala might have sheltered an elite residence, barracks or it may have just been a shelter for the local population (and livestock) in case of need (*idem*, p. 22).
53. TOLSTOV 1962, archaeological map; TOLSTOV and VAINBERG 1967, p. 9, fig. 3. According to TOLSTOV and VAINBERG (1967, p. 10) a first major restructuring of the “Kel’teminar” area (a.k.a. the Bazar-kala canal) irrigation system in the area occurred in the IVth century BC in relation to the beginning of the “Kangyui” period and the Chorasmian emancipation from the imperial Achaemenid power. This argument and chronology are superseded (MINARDI 2015). If, as it seems, an enlargement of the canal network in the area occurred in parallel with the construction of Koï-krÿlgan-kala, this might have happened not earlier than the IIIrd century BC. Anyhow this canal system seemed to have been already developed in the Antique 1 period (mid-VI–late IVth centuries BC) and the whole network covered an area of ca. 2000 hectares (ANDRIANOV 1969, p. 116-121, 126; see also VOROB’EVA 1973).

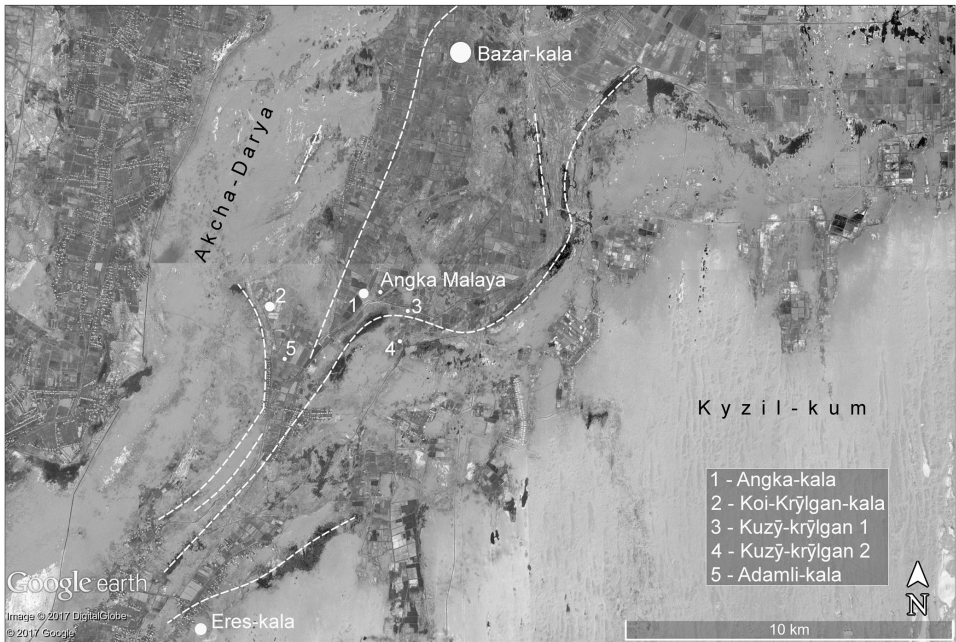


Fig. 14– Satellite view of the southeastern borders of the Chorasman territory with location of Angka Malaya and the other sites cited in the text. The dotted-lines outline the principal Antique 2-3 canals of the area (redrawn and repositioned after TOLSTOV 1962)

canal is attested at a distance of less than 3 km east of Angka-kala, along which rises the round fortified site of Koi-Krylgan-kala.⁵⁴ These canals which occupy the upper course of the Akcha-Darya (a dry branch of the river Amu) are the easternmost axis of development of irrigated agriculture in Chorasmia (*Fig. 14*).

The area under scrutiny was abundantly developed during the Antique 2 and 3 periods, when settlements spread within its rural landscape, up to the IV/Vth century AD when eventually it was deserted.⁵⁵ The partially explored *gorodishche* Bazar-kala, located at a distance of only 8 km to the north of Angka-kala, seems the most ancient site of the area, perhaps the main one.⁵⁶ Toward the south, at

54. TOLSTOV and VAĬNBERG 1967.

55. *Supra* note 29.

56. As suggested by Helms in KHOZHANIYAZOV 2005, p.51, note 163. On Bazar-kala, see TOLSTOV 1948a, p.112-113; 1948b, p.113, fig. 25; 1962, p.104; GULYAMOV 1957, p.76-77; ANDRIANOV 1969, p.116-118; VOROB'eva 1986. The first stage of Bazar-kala is connected with the Antique 1 period. Also Bazar-kala, according to Vorob'eva (1986, p.28) was deserted after the "Kushan" period (cf. *supra* note 29). Bazar-kala chronologically precedes the two royal seats of "Right Bank" Chorasmia

approximately the same distance (ca. 11 km) we found another Antique 2 and 3 *gorodishche*, Eres-kala⁵⁷ while the eastern “flank” of the irrigated territory was secured by other minor fortified settlements (such as Kuz̄y-kr̄ylgan-kala 1 and 2).⁵⁸

Within this rural context, in an area of villages dominated by the stronghold of Angka-kala and defended by other minor forts, Angka Malaya, with its enigmatic and peculiar – for the moment unique in Chorasnia – layout, has certainly served a specific purpose which was different from that of the other nearby sites. This small-sized but considerable building did not have a defensive function, for the absence of direct access to its sole unroofed space indicates that it was evidently not meant to shelter people or animals (and there is no water reservoir or well inside, unlike for instance at Angka-kala or Ayaz-kala 1). This building cannot be considered as fortified and it is clearly neither a stand-alone military installation nor a watch tower (which have a rather different architecture).

Angka Malaya was not a dwelling either and it cannot be interpreted as a domestic unit for the total deficiency of data regarding any household use (on the function of the khoums lodged on top of its walls – *infra*), for the absence of access and for the lack of any internal partition in its only wide courtyard. The presence of pottery (outside the courtyard), does not contradict this assumption (cf. Chil’p̄yk) and most of that is very likely intrusive. The vestiges of Angka Malaya can be neither the remains of a platform nor a substruction (that had lost its mud brick structures), by reason of the existence of an interior artificially raised floor level fitted with (not structural) benches and for the total absence of any internal partitions or further infill material which would have been necessary to sustain elevating structures. Further, the existence of a mud-brick elevation above the perimetral *pakhsa* walls of Angka Malaya is uncertain but the width of the *pakhsa* structure and some remnants of mud bricks suggest its existence. So the idea of a possible relinquishment of the construction works at the building must

(*Fig. 1*), Akchakhan-kala (Ist century BC–IIInd century AD) and Toprak-kala (IIInd–IVth centuries AD)

57. Dated between the IVth/IIIrd century BC (more likely late IIIrd) and the VIth century AD (KHOZHANIYAZOV 2005, p.47-49).
58. More in general, according to Gulyamov and Andrianov (conveniently cited in NERAZIK 1976, p.14) “near the source of each canal was a large fortified point and the border of the oasis [i.e. the whole Akcha-Darya watered area] was protected by a series of fortifications, erected on the spurs of the Sultan-uiz-dag or on separate hills [...]. A system that had apparently already flourished in the Early Kangyuī period (IVth-IIIrd centuries BC) [...] and that has improved and expanded in the first centuries of our era”. On “Early Kangyuī” (i.e. Antique 2) and its chronology, see MINARDI 2015, p.87-102 with references. On Kuz̄y-kr̄ylgan-kala 1 and 2, see YAGODIN and MALIYAROV 1986, p.99. nos. 120-121. The last stage of Kuz̄y-kr̄ylgan-kala 1 belongs to the Antique 3 period, while that of Kuz̄y-kr̄ylgan-kala 2 to the following “Afrigid” one (*ibidem*).

be discharged: the khoums (lodged on an elevated floor level and C14-dated) definitely sanction the fact that Angka Malaya was built, completed and used for a certain period of time during the Ist/IInd century AD before and definitive abandonment in the IV/Vth century AD probably after a change of function and partial deconstruction in the IIIrd century AD.

As already seen, it is difficult to conceive a systematic robbing of the mud bricks of Angka Malaya for their reuse in another edifice. If, on the one hand, we should exclude both a sudden destructive event and a prolonged despoiling process (during the excavation no signs of such activities have been recorded), on the other hand, a structural deconstruction might be considered⁵⁹ as mainly indicated by the almost perfectly clean state of the courtyard left in such condition when the building ceased its Stage 1 (and Stage 2) use. No squatter occupation interested the interior of the structure in the time span between Stage 2/3 and 4 (relative to the complete abandonment of the building) most likely by reason of the different factors such as the general depopulation of the area at that epoch, difficulties to gain access to the structure without the assistance of a ladder (or similar device) and perhaps due to other cultural reasons (*infra*). In Stage 3 some minor works occurred in the already emptied structure, deprived of its walls and partially ruined, probably in connection with the previous stage, although only after a certain period of time. Only in Stage 4 someone found shelter from the gusts of the northern Siberian winds outside the ruins of Angka Malaya, a squatter occupation that did not affect the courtyard because it occurred after a hiatus long enough to permit the formation of abundant alluvium inside the building. Hence, it is more than reasonable to assume that the activities for which the courtyard of Angka Malaya was intended missed to leave a clear archaeological trace because of their peculiar nature and because voluntarily obliterated.

The archaeological excavation proves that Angka Malaya was built on a flat natural surface out of nothing. In a succession of constructive phases, after the erection of the perimetric walls, its interior was filled (009) and sealed (003) with clay. The homogeneous fill context 009 was intentionally laid to raise the floor level of its central and only room, a courtyard. Consequently, we have a raised space shielded by a massive *pakhsa* enclosure characterized by the absence of access at ground level. Moreover, some activities – involving the use of fire – were performed on a raised upper floor located at the top level of the structure's *pakhsa* walls. Unlike those actions performed inside the main space of the building (except for the bench) these activities left an archaeological trace.

Considering a different perspective, we may now reflect on the possibility that this non-military “enclosure” was not supposed to guard its content but

59. In Chorasmia this seems to be a pattern, as the examples of the Ceremonial Complex of Akchakhan-kala, the columned hall of Kyuzeli-g'yr 1 (MINARDI 2015, p. 100 and 122-124 with references) and the palace of Toprak-kala (RAPOPORT and NERAZIK 1984, p. 17-18) show.

that, on the contrary, it was meant to protect the external environment from it: what was held inside Angka Malaya must have been isolated from the rest of the rural inhabited area in which it was built and from the ground. What it is argued here, with due caution but on the tracks of the archaeological evidence, a precise religious context and the discussed *ex-silentio* arguments, is that Angka Malaya was built with the specific purpose of sheltering human cadavers as customary in Zoroastrianism. According to the precepts of this religion “the corpse (*Av. nasu-*, Pahl. *nasā*) of a righteous believer was held to be the greatest source of pollution in the world, as the death of such a one represented a triumph for evil, whose forces were thought to be gathered there in strength”.⁶⁰

Conclusions – Zoroastrian funerary architecture and the possible function of Angka Malaya as a *dakhma*

Zoroastrian funerary/ritual architecture is interrelated with the cult precepts and the praxis of this religion as transmitted to us by the Avestan *Vīdēvdād* (“The Law repudiating the Demons”) a text belonging to different periods and localities⁶¹ and resulting from an earlier oral tradition.⁶² As prescribed in *Vd.* 5. 14; 6. 44-46 and 8. 1-2 to prevent pollution of the earth, fire and water,⁶³ the corpses must be exposed to the sun for a preliminary excarnation of the bones in *dakhmas*, an Avestan term originally used to designate a “grave or tomb” (as likely hinted in *Vd.* 7. 45-51)⁶⁴ but which has changed its designation to that of place for exposure of the corpses apparently between the VIth and the IIIrd century BC.⁶⁵ Less clear is the archaeological evidence related to this matter (especially for western Iran): in certain cases abandoned structures were conveniently re-employed for this funerary use or man-made structures were even unnecessary.⁶⁶ During winter, when the natural and ideological conditions prevented the immediate transportation of

60. BOYCE 1993.

61. BOYCE 1975, p.325; 1993.

62. KREYENBROEK 1996; 2013; 2015. On the *Vīdēvdād* see also SKJÆRVØ 2007. English translation: DARMESTETER 1880. For a recent French translation of the Avesta, see LECOQ 2016 (on the *Vīdēvdād* in particular, p.867-1047).

63. On the Zoroastrian concepts of purity and pollution, see BOYCE 1975, p.92-138; CHOKSY 1989; DE JONG 2013; WILLIAMS 2015, with relevant literature; see also HUTTER 2009.

64. BOYCE 1975, p.325-326.

65. HOFFMANN (1965) in CHOKSY 2015, p.396.

66. HUFF 2004; CHOKSY 2015; see also SIMPSON 2014; SIMPSON and MOLLESON 2014.

the deceased to the *dakhma* – care and celerity were essential in corpse disposal⁶⁷ – another subsidiary structure was required, the tripartite “*kata*” (*Vd.* 5. 10-13, the Parsis/Iranis *nasā-ḵāna/zādmarg*⁶⁸; cf. 8. 4-10) and other ancillary buildings of various and different functions are known for modern times.⁶⁹ In Central Asia, two are the archaeologically documented types of *dakhmas*: the “tower of silence” and the free-standing tower-like *dakhma* (henceforth tower-*dakhma*).⁷⁰ Perhaps in Central Asia there is also evidence regarding *katas* although this is uncertain for Chorasnia.⁷¹

The human bones, once cleaned by birds or/and dogs, were afterwards collected and secured in portable ossuaries and then sheltered in *naus* or placed in sterile/non-cultivated ground.⁷² According to the *Vr̥dēvdād* it seems that *dakhmas* were not always necessarily built on high ground⁷³. This is certainly the case of the tower-*dakhmas* attested in modern times near Zoroastrian inhabited areas that

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67. Cf. SNEZAREV 1969, p.92. On the funerary (and other) rituals of the Zoroastrians as we know them today, see STAUSBERG 2004a and 2004b; see also MODI 1937 (1986); BOYCE 2003.
68. On the *nasā-ḵāna/zādmarg*, see BOYCE 1993; 2003. On the interim care of corpses before exposure on the *dakhma* and on the *kata*, see CANTERA 2002 with literature.
69. HUFF 2003; 2004, p.622-630; CHOKSY 2015. See also GRENET 2013 on the written sources relative to ancient supplementary buildings such as the enclosures for human flesh-eating dogs.
70. For convenience, see GRENET 1984, p.227-231; 2012; 2013; 2015.
71. Kampyr-tepe: RTVELADZE 1987; see criticism in CANTERA 2002. With regard to Ancient Chorasnia, Tolstov identified one of the rooms (ca. 5 x 5m) of the Late Antique *usad'ba* no. 36 in the area of Berkut-kala as a domed *kata* (see TOLSTOV 1941, p.174-176; 1948a, p.145-150); RAPOPORT 1971, p.110, argued that the house no. 50 recorded by Nerazik in the same area was likewise a *kata*. On these interpretations, see criticism in GRENET 1984, p.155-157. If house 50 is clearly a *naus*, more interesting is the supposed *kata* of *usad'ba* no. 36 which has no accesses (it was found breached); it is fitted with a bench and presents a central depression cut into the floor. At Pendjikent another small building of similar dimensions (ca. 7 x 7 m) interpreted as a *kata* seems again a *naus*, albeit a peculiar one (GRENET 1984, p.163-165, with plate XIV). Angka Malaya is a much bigger and unroofed structure. On the *kata* in Central Asia, see also REMPEL 1987 with references.
72. At least this seems to be the case of Ancient Chorasnia. Studies to ascertain traces of excarnation by animals on human remains are still limited. On this, see SIMPSON and MOLLESON 2014; BENDEZU-SARMIENTO and LHUILLIER 2015; see also PILLOUD *et al.* 2016.
73. As already pointed out in BOYCE 1993 with regard to *Vd.* 8.4 ff.

were located in plains too far from natural, elevated places of exposure.⁷⁴ Before the discovery of the VII/VIIIth century AD Sogdian tower-*dakhma* of Durmentepe in Sogdiana,⁷⁵ this kind of structure appeared not to have existed before the Xth century AD.⁷⁶

The above-mentioned site of Chil'p̄yk, somehow ignored by specialists,⁷⁷ is an outstanding and early “tower of silence” that testifies to the existence of such specific structures codified already in the first half of the 1st millennium AD among the Eastern Iranians. In a pre-Islamic and fully Zoroastrian context such as that of Chorasmia, the enclosing wall of Chil'p̄yk was not intended as a protection against non-Zoroastrian defilers⁷⁸ but more likely it was used to isolate this most polluted place (*Vd.* 3. 9; 7. 56-58) from the external environment (cf. e.g. *Vd.* 6. 44-46)⁷⁹ and to keep away undertaker animals other than birds.⁸⁰ Chil'p̄yk, which is situated at a distance of more than 100 km from Angka Malaya in a straight line (and even more if we consider the use of waterways to reach the site),⁸¹ could not serve as the only *dakhma* for the whole “Right Bank” Chorasmia where, as evidenced by the presence of extended and contemporary ossuary necropolises, the treatment of cleaned bones and their deposition in ossuaries was compulsory or at least widely observed by the local population since the Antique 2 period up until the Islamisation of the area occurred in the course of the VIIIth century AD.⁸²

Angka Malaya, which can be considered neither a domestic unit nor a construction with a military purpose (nor an unfinished edifice), shares some of

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74. BOYCE 1974, p.4. For a complete analysis of specimens of modern tower-like *dakhmas*, see SHOKOOHY 2007.
75. SHISHKINA 2005; SHISHKINA and INEVATKINA 2012; KURKINA 2005; see also GRENET 2012.
76. BOYCE 1974, p.4 with references.
77. On this, see GRENET 2012.
78. The polity was subdued by the Arabs in 712 AD. On Chorasmia's Late Antiquity, see MINARDI 2013; 2015 with references.
79. Cf. CHOKSY 2015, p.396 on the low walls enclosing the cliff summits above the royal tombs at Naqsh-i Rostam.
80. Cf. BOYCE 1974, p.4.
81. As noted by MANÝLOV (1981, p.55) the *dakhma* of Chil'p̄yk rises north of the Amu-Darya in quite an isolated position. It was very likely customarily reached by boat (*idem*, p.56). Cf. with the boat depicted on the neckband of the Akchakhan-kala's Srōsh (BETTS *et al.* 2015, fig. 9; 2016). This Avestan god plays a central role as the protector of the departed souls and of those who deal with corpses. Accordingly, he is invoked repeatedly when a new *dakhma* is built (BOYCE and KOTWAL 1971, p.307).
82. Cf. *supra* note 47; MINARDI 2013.

the peculiar features of modern tower-*dakhmas*⁸³ and those of the Late Antique Sogdian example of Durmen-tepe: Angka Malaya has no ground-level entrance, and to gain access to its two floor levels, a ladder or a rope was necessary (Durmen-tepe has a stairway). On the upper floor level – on the NE flank of the building – an upturned khoum filled with ashes and charcoals has been recorded (*Fig. 8*), and this feature, clearly associated with a fire, might be related to the necessary device to scare off demons and cast a constant light on the corpses as recorded in other *dakhmas*.⁸⁴ In Ancient Chorasmia such vessels are recurrent in ceremonial complexes (e.g. Tash-k'irman tepe and Akchakhan-kala) and they were used to store the embers and ashes of fires that were not thus dispersed but instead collected.⁸⁵ The building, moreover, has an internal courtyard raised above the natural soil surface to avoid the pollution of the earth as in the other known existent free-standing *dakhmas*⁸⁶: two layers (009 and 003) separate the floor surface from the humid and fertile ground and 003. It is essentially a coating of dry compact clay. Stone is not the only mean useful to ensure that the body does not come into contact and pollute the earth (*Vd. 8. 5-8*). If at Angka Malaya stones were used to pave its courtyard, these did not leave any traces. The internal bench might have a function related to some now lost equipment.

As well as at Chil'p'yk and Durem-tepe⁸⁷, Angka Malaya does not have a central shaft for the casting of bones, which were prepared by other means and

83. SHOKOOHY 2007.

84. CHOKSY 2007; 2016, p.396; BOYCE 1968. A *sāgri* has been also noticed by Grenet (2012) at Chil'p'yk. On the modern Zoroastrian praxis of kindling fires in the three days plus one after death at the home of the departed, at the *zādmarg* and at the *dakhma*, see also BOYCE 2003, p.47-49. These three fires, after the fourth day, after having exhausted their purpose to aid the soul of the dead, were allowed to grow cold and their embers and ashes collected and brought to a fire temple.

85. Perhaps some water was poured/sprinkled on the residuals of fire in the vessel to extinguish their heat, which would explain its upside-down position. Cf. previous note. We may hypothesize the existence of a small aperture or a niche correspondent to the khoum, but no traces of this are left on the eroded clay wall. Considering that Angka Malaya was abandoned approximately in the IIIrd century AD, the 14C date given by the sample taken from the embers discovered within what was left of the bottom of the khoum, suggests that these residuals belong to the first material there extinguished. We may then infer that the ashes were kept *in situ* and not transported/stored elsewhere. That the khoum was clearly used for a prolonged period of time is observable by its state of preservation (see its fired remains in *Fig. 8 B*). The khoum is at a distance of ca. 2.5 m from the interior of the courtyard so more than three paces away from the corpses as prescribed in the Avesta (on this, see BOYCE 1992).

86. SHOKOOHY 2007, p.68; BOYCE 1974, p.5-6.

87. And in some other modern *dakhmas*, see BOYCE 1974, p.5-6. With regard to the other possible ancient *dakhma* of Sogdiana, that of Erkurgan, see GRENET 1984, p.230-231; BOYCE and GRENET 1991, p.191-192; SULEIMANOV 1991; 2000, p.115-

carried away in ossuaries. Likewise, its plan is not circular as instead are the plans of the modern tower-*dakhmas* known. But this last characteristic is evidently not necessarily a ritual obligation: in general, the design of tower-*dakhmas*, as M. Boyce noted in 1974,⁸⁸ has no architectonic standard, a fact confirmed by the *dakhma* of Durmen-tepe and especially true in Chorasmia where architecture is extremely heterogeneous.⁸⁹

Furthermore, the circumstance that sees the site of Angka Malaya possibly despoiled/deconstructed of its elevation and equipment – as documented in other Chorasmian complexes⁹⁰ – may be an additional datum in support of our hypothesis. The very low number of still existent *dakhmas* is mostly due to religious reasons: in Iran they were destroyed with the spread of Islam but they were also razed by Zoroastrians themselves when a new structure was necessary or an obsolete one was abandoned.⁹¹ According to the *Vīdēvdād* (7. 49-51) to destroy a *dakhma* (apparently either a tomb or a built-up place of exposure) is a good cleansing deed for a Zoroastrian believer and, as recorded by G. P. Snezarev, in the XXth century the term *dakhma* was still understood as “bewitched place” among the Khorezm Uzbeks whose Muslim funerary rituals were still imbued with Zoroastrian elements.⁹² Thus Angka Malaya was likely deconstructed already in antiquity because it had ceased to be necessary.

All these data ought to be considered in light of the religious and historical context of Zoroastrian Ancient Chorasmia with its characteristic strong traditional

125. This building, consisting of a rectangular platform (ca. 34x23 m) on which a monumental structure rises (maximum reconstructed height: 11/12 m) is dated by Suleimanov in the IIIrd/IIInd century BC. The top part of the monument used to be accessible by a steep staircase. Always according to Suleimanov (2000, p. 115), the *dakhma* of Erkurghan has already ceased to function as such in the IIInd century BC. The original intended purpose of this monument as a *dakhma* is not wholly clear and its interpretation and phasing is problematic due to the lack of published exhaustive documentation.

88. “It is evident [...] that in studying the design of Zoroastrian tower-*dakhmas* one must be prepared to allow for local variations, depending on time, money, climate, and physical and social conditions, rather than seeking to trace a regular and standard development” (BOYCE 1974, p.9). See also SHOKOOHY 2007, p.66.

89. As already observed in MINARDI 2015; 2016b.

90. *Supra* note 59.

91. DARMESTETER 1880, p.25; BOYCE 1974, p.5-6; SHOKOOHY 2007, p.65-66. In the case of Chorasmia the scant evidence regarding tower-like *dakhmas* might also be considered accidental due to the fact that in the area thorough archaeological activities mostly focused on large sites.

92. SNEZAREV 1969, p.110-112.

cultural traits.⁹³ Zoroastrianism itself is renowned for its resilient traditional praxis. Thus, in the background of these elements, to link a non-domestic/non-military structure with particular features such as Angka Malaya with the cults and beliefs of a polity such as Chorasmia seems today more than a reasonable hypothesis. Based on the available evidence and on the specific characteristics of the building, it is here assumed that Angka Malaya might have been a free-standing *dakhma* or a *kata* used by the villagers of the Angka-kala area during winter, although considering the lack of characteristics to relate the structure with a *kata* as described in the Avesta, we are definitely more inclined toward the first hypothesis, also considering the fact that the *kata* was apparently an establishment of more private character (cf. *Vd* 5. 10).⁹⁴ It is not yet known if any subsidiary building existed in the area. The close proximity of the Angka Malaya *dakhma* to the fortress of Angka-kala does not detract from our hypothesis, as shown by later examples of Zoroastrian funerary buildings erected close to settlements, such as for instance the Sogdian *dakhma* of Durem-tepe – which was built in front of the southern gate of the settlement⁹⁵ – and the Chorasmian cemetery of Tok-kala.⁹⁶

According to the *Vīdēvdād* (8. 2) for the Zoroastrians the availability of *dakhmas* is an essential religious requirement because it is “a pressing duty to dispose of the polluted corpse with care and celerity, according to strict rules, and to do everything possible to help the disembodied soul to reach heaven and be blessed”.⁹⁷ The disposal of the body has to be fulfilled within a day and *Chil’pŷk*, the only *dakhma* known in Chorasmia up to this moment, was not at walking/carriage distance from the area of Angka-kala. Thus Angka Malaya could serve a necessary religious/funerary purpose for the sparse rural settlement type of its surroundings and it was probably not the only funerary structure of its kind in the Chorasmian countryside.

If our hypothesis on its function as a *dakhma* is correct, the absence of a central shaft and lack of evidence regarding human remains at Angka Malaya reflects on the Chorasmian society in the Antique 3 period: the human remains once collected were individually buried in ossuaries and not anonymously

93. For further details, see MINARDI 2013.

94. As noted in CANTERA 2002, p.429.

95. SHISHKINA 2005, p.755.

96. GUDKOVA 1964, p.85. Also the cemetery of Mizdakhkan is close to the site of Gyaur-kala Khodzheĭlinskaya.

97. BOYCE 1977, p.139.

amassed in the funerary structure.⁹⁸ The treatment of the cleaned bones, it seems thus confirmed, was not optional.

Like Angka-kala and Angka Malaya, almost all the Antique 2/3 period Chorasmian sites east of the Sultan-uiz-dag mountains are oriented on a NW-SE axis toward the eastern peaks of these mountains, including Bazar-kala, Koï-Krylgan-kala, Toprak-kala and other centres, while the northernmost sites of Karakalpakstan, such as for instance Dzhanbas-kala, Ayaz-kala 1 and Kurgashin-kala, although oriented on the same axis, because of their northern location have the mountains on their SW side. Akchakhan-kala, on the west of the Sultan-uiz-dag, is conveniently oriented on an opposite NE-SW axis, while the temple of Tash-k'irman, south of the ridge has a N-S orientation. Hence these alignments might be related to the position of the Sultan-uiz-dag and also to the direction of the dawn in summer which corresponds to the geographical NE.⁹⁹

The Sultan-uiz-dag (also known as *Karatow*, “the Black Mountains”) is the only ridge rising from the flat landscape of Karakalpakstan and its peaks was certainly deemed sacred (cf. *Vd.* 6. 45). Not accidentally, its rocky and sterile terrain was a favoured burial place for Zoroastrian ossuaries – so it appears – in the same period of the function of Angka-Malaya and of Chil'p'yk. More investigations of these mountains are needed in order to better comprehend the chronology of its burials which certainly occurred over a prolonged period of time. It is unlikely that, due to the distance of the Sultan-uiz-dag from the Angka-kala area, the ridge was used as a natural *dakhma* for the exposure of the dead of the Angka area. It cannot be ruled out, however, that they might have served this purpose for the closest settlements such as Toprak-kala and Toprak-kala Malaya.¹⁰⁰

On the original appearance of Angka Malaya, unfortunately not much can be said, and its reconstruction can be only cautiously attempted due to the loss of all its elevations and relative material. In this regard, we must also cope with the lack of other ancient tower-*dakhmas* that might have been of help as *comparanda*. As already seen, the Sogdian specimen of Durem-tepe belongs to a later horizon and to a different private context while the full understanding of the Sogdian building of Erkurgan is still problematic. However, with regard to their appearance, it appears

98. Cf. Chil'p'yk where some ossuaries were buried on its slopes (MANÝLOV 1981). Ossuary burial occurs in the vicinity of the *dakhma* of Chil'p'yk (*ibidem*) and also on the whole Sultan-uiz-dag range (AMIROV *et al.* forthcoming).

99. In relation to Akchakhan-kala and Toprak-kala, with opposite orientations toward the same point on the eastern slopes of the Sultan-uiz-dag, see MINARDI 2016b. At the summer's solstice –and for all the season– the direction of the dawn in the region corresponds exactly to the geographical NE (<http://suncalc.net/#/41.77,60.67,73,15/2017.06.21/02:00>).

100. NERAZIK 1976, p. 15.

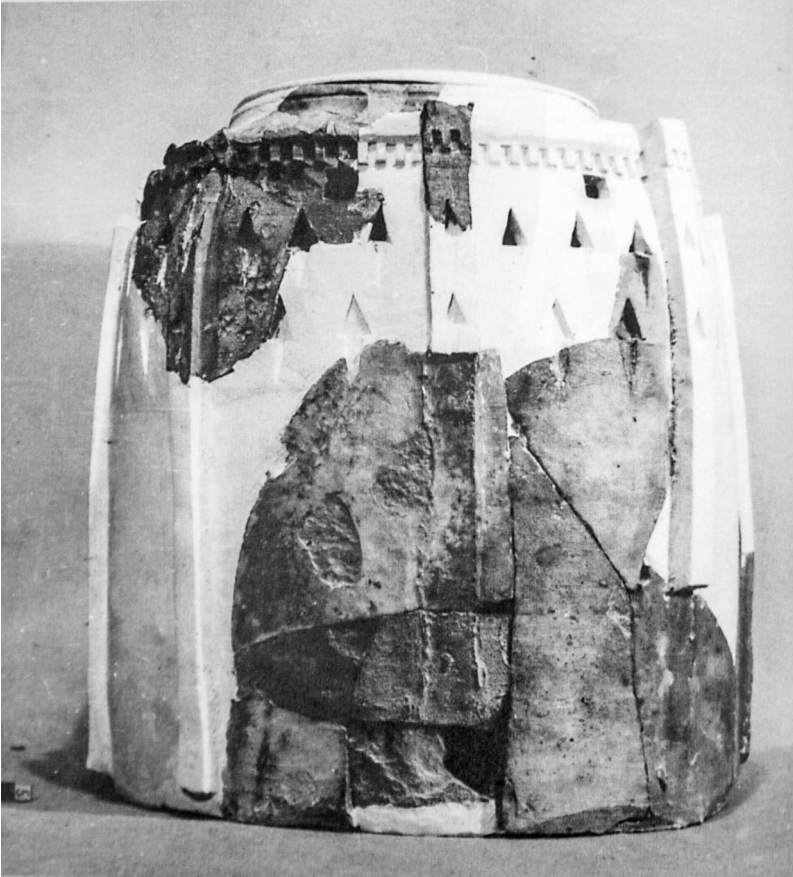


Fig. 15– Architectonic ceramic ossuary from the area of Dzhanbas-kala
(after RAPOPORT *et al.* 2000, table 24).

that both these two edifices had a top crowning.¹⁰¹ The structure of Erkurgan was apparently additionally decorated with a stone “modillion” (or rather dentils), running under its battlements.¹⁰²

This type of decoration is similarly witnessed in Ancient Chorasmia by evidence nearly contemporary to Angka Malaya: dentils appear in some architectonic ceramic ossuaries –such as that found near the *gorodishche*

101. SHISHKINA 2005; KURKINA 2005; SULEĪMANOV 1991; 2000.

102. SULEĪMANOV 2000, p. 120: “small rectangular blocks”.

Dzhanbas-kala (*Fig. 15*)– and in the mural crown worn by the painted colossal Srōsh of Akchakhan-kala.¹⁰³ As already noted for instance by Rapoport, Grenet and Suleĭmanov,¹⁰⁴ these ceramic *astōdāns* may represent afterlife-related funerary edifices, possibly even *dakhmas* (in the example here illustrated at *Fig. 15* with a circular plan and a remarkable height perhaps not realistic). Be that as it may, the finding of the two small rosy sandstone parallelepipeds in the debris of Angka Malaya could be the feeble indicator of the existence of decorative dentils installed in the top part of a lost parapet of the Chorasmian tower-*dakhma* of Angka Malaya. With regard to battlements, no evidence corroborates their existence.

In conclusion, archaeology in Ancient Chorasmia has yet again revealed its outstanding potential to cast a new light on one of the most ancient and major religious traditions of the world and its relevant contribution to the history of Central Asia.

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