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Columned Halls in Ancient Chorasmia

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ABSTRACT

Ancient Chorasmia in the period from around the sixth century BC to the second century AD was rich with large fortified sites, many containing monumental architecture. Some of these buildings were large halls, others smaller columned chambers. With particular reference to the site of Akchakhan-kala, this paper discusses the form, development and origins of Chorasmian columned halls.

KEYWORDS

Ancient Chorasmia; Central Asia; Akchakhan-kala; hypostyle halls; column bases; Achaemenid empire



1. Introduction

The hypostyle hall, an archetypal form of roofed monumental space, is most widely associated with temples and palaces in Egypt, the classical world, and Achaemenid Persia, and appears broadly across Asia, often in religious buildings. Smaller, and less formal, columned chambers are also found. What may be less well known is that a version of the columned hall occurs commonly in very humble vernacular architecture as a solution to the problem of providing a large enclosed and roofed space for the protection of animals in winter – the barn or byre. Such structures can be seen in use today across much of Central Asia and the Himalayas, especially among transhumant pastoral communities, and may well have very great antiquity.¹ The Ancient Chorasmian royal seat of Akchakhan-kala² includes among its monumental buildings a variety of columned halls and chambers. This paper concerns the development of columned halls in Ancient Chorasmia and, in particular, at Akchakhan-kala.

Ancient Chorasmia was located on the lower reaches of the Amu-Darya (the Greek and Roman Oxus), south of the Aral Sea (Figure 1). Its position at the north-western

edge of Central Asia, encompassed by deserts and between the nomads of the steppes and the more urbanised peoples to the south and east, created a unique developmental trajectory for its society and culture. The area was first studied by Soviet archaeologists of the “Khorezm Expedition” (KhAEE)³ and, since 1995, it has been the object of archaeological investigations of the Karakalpak-Australian Expedition to Ancient Chorasmia (KAE), with activities focused on the Tash-k’irman oasis and in particular on the site of Akchakhan-kala.⁴

Akchakhan-kala is one of the many fortified strongholds that characterised the area on the east bank of the Amu-Darya in the early historic period. It is one of the largest and has proved to be certainly among the richest of the sites known in the Chorasmian polity. Akchakhan-kala consists of two parts, the Upper and Lower Enclosures measuring c. 15 and 27 ha, respectively (Figure 2). The Upper Enclosure comprises various areas characterised by monumental architectural remains: the Ceremonial Complex (Area 10) (Figure 3), the Central Monument (Area 07)⁵ and the South-West Enclosure (Area 11). Based on present evidence,⁶ the site was

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¹Sharma, *The Bakkarwals of Jammu and Kashmir*; Jia et al., “Adunqiaolu.”

²In earlier publications the site of Akchakhan-kala (also spelled Akshakhan-kala) was called Kazakl’i-yatkan. This local name was changed to the name registered in the official heritage record of Uzbekistan.

³Tolstov, *Drevnii Khorezm*; Tolstov, *Po sledam drevnekhorezmiiskoi tsivilizatsii*; Tolstov, *Po drevnim deltam Oksa i Yaksarta*. For further references on the works of the KhAEE see Minardi, *Ancient Chorasmia*.

⁴The Karakalpak Australian Expedition, a joint project of the Uzbek Academy of Sciences, Karakalpak branch, and the University of Sydney, is supported by the Australian Research Council (DP130101268). Betts et al., “The Akchakhan-kala Wall Paintings”; Minardi, *Ancient Chorasmia*; Minardi and Khozhaniyazov, “The Central Monument of Akchakhan-kala”; Minardi, “The Hellenistic Chorasmian Ketos”; Minardi, “Elite, Wine Consumption and Status Symbols”; Minardi, “New Data on the Central Monument”; Kidd, “Complex Connections”; Kidd and Betts, “Entre le fleuve et la steppe”; Yagodin et al., “Karakalpak-Australian Excavations in Ancient Chorasmia”; Betts et al., “Karakalpak-Australian Excavations: Interim Report on the Fortifications of Kazakl’i-yatkan”; Kidd et al., “Ancient Chorasmian Mural Art”; Khozhaniyazov, *The Military Architecture of Ancient Chorasmia*; Helms et al., “The Karakalpak-Australian Excavations: The Northern Frontier”; Helms et al., “Five Seasons of Excavations”; Helms and Yagodin, “Excavations at Kazakl’i-yatkan.”

⁵Minardi and Khozhaniyazov, “The Central Monument of Akchakhan-kala”; Minardi, “New Data on the Central Monument.”

⁶Betts et al., “Karakalpak-Australian Excavations: Interim Report on the Fortifications of Kazakl’i-yatkan.”

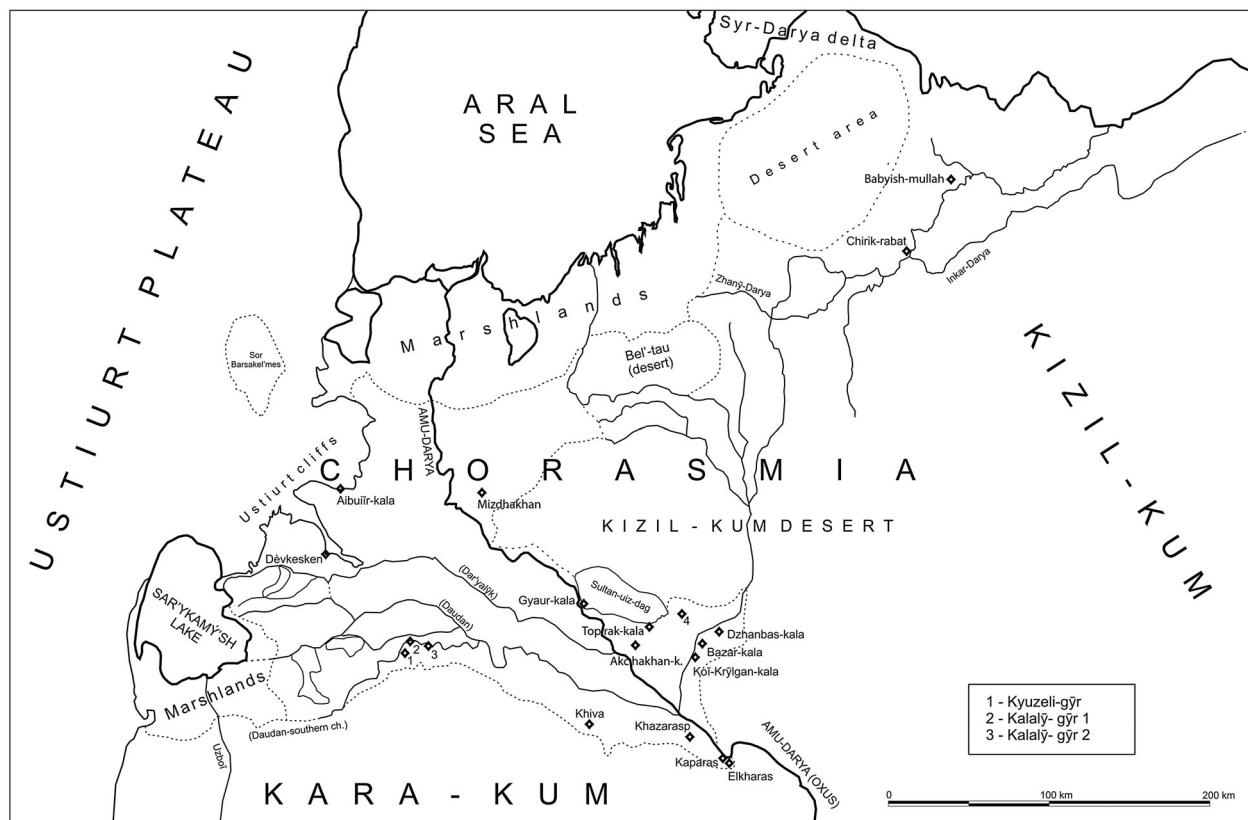


Figure 1. The geographical outline of Ancient Chorasmia with the location of the sites cited in the text.

founded around the end of the third century or early second century BC and was abandoned around the second century AD. At this time the site was looted for all reusable architectural fittings such as timber, ornamental stonework and probably metal fixtures. The site saw a partial reoccupation in the late fourth–fifth centuries AD when a *donjon* or keep was built among the standing ruins of the earlier site in the South-West Enclosure.

The focus of this paper is Area 10, the Ceremonial Complex (Figure 3). This consists of a Central Building some 3000 m² in area surrounded by a double wall with an internal corridor and rounded towers at the corners. Gates on the west, south and east sides are flanked by twin towers. The north flank has no gate. The architectural model echoes the local style of defensive fortifications but only in a decorative manner; it was not intended as a defensive structure. Around the Central Building are a series of chambers and open areas that form part of the same complex. Only the south-west corner of the Central Building has been excavated so far. Most of this is taken up by a hypostyle

hall 19 × 14 m, a total area of 266 m². To the north is an open courtyard and to the east is an extensively decorated altar complex. The Ceremonial Complex contains a number of columned rooms. The columns were supported on stone bases that vary in form and include single bases as well as bases capped with a separate torus.

The function of Area 10 is believed to be related to royal ceremony, particularly associated with dynastic and Zoroastrian cult practice.⁷ The whole area of the complex is rich with fire features of clearly ritual purpose. The main southern entrance is flanked by “burning doorways”, low walls on either side of the path into the building which were set with flaming torches. Traces of the burnt staves and fire reddened clay columns attest to these. The western corridor is decorated with murals that include over forty “portraits” of figures with elaborate headdresses and gold jewellery.⁸ Preliminary readings by Vladimir Livshits and Pavel Lurje (personal communications) of associated painted texts in Aramaic script and in the Ancient Chorasmian language mention the words “king” and “son” together with various names.

⁷ Betts et al., “Des divinités avestiques sur les peintures”; Betts et al., “The Akchakhan-kala Wall Paintings”; Minardi and Khozhaniyazov, “The Central Monument of Akchakhan-kala”; Minardi, “The Hellenistic Chorasmian Ketos”; Minardi, “New Data on the Central Monument.”

⁸ Kidd et al., “Ancient Chorasmian Mural Art”; Yagodin et al., “Karakalpak-Australian Excavations in Ancient Chorasmia”; Kidd, “Complex Connections”; Kidd, “The Procession Scene at Akchakhan-kala”; Kidd and Betts, “Entre le fleuve et la steppe.”

Takir surfaces with canals and structures

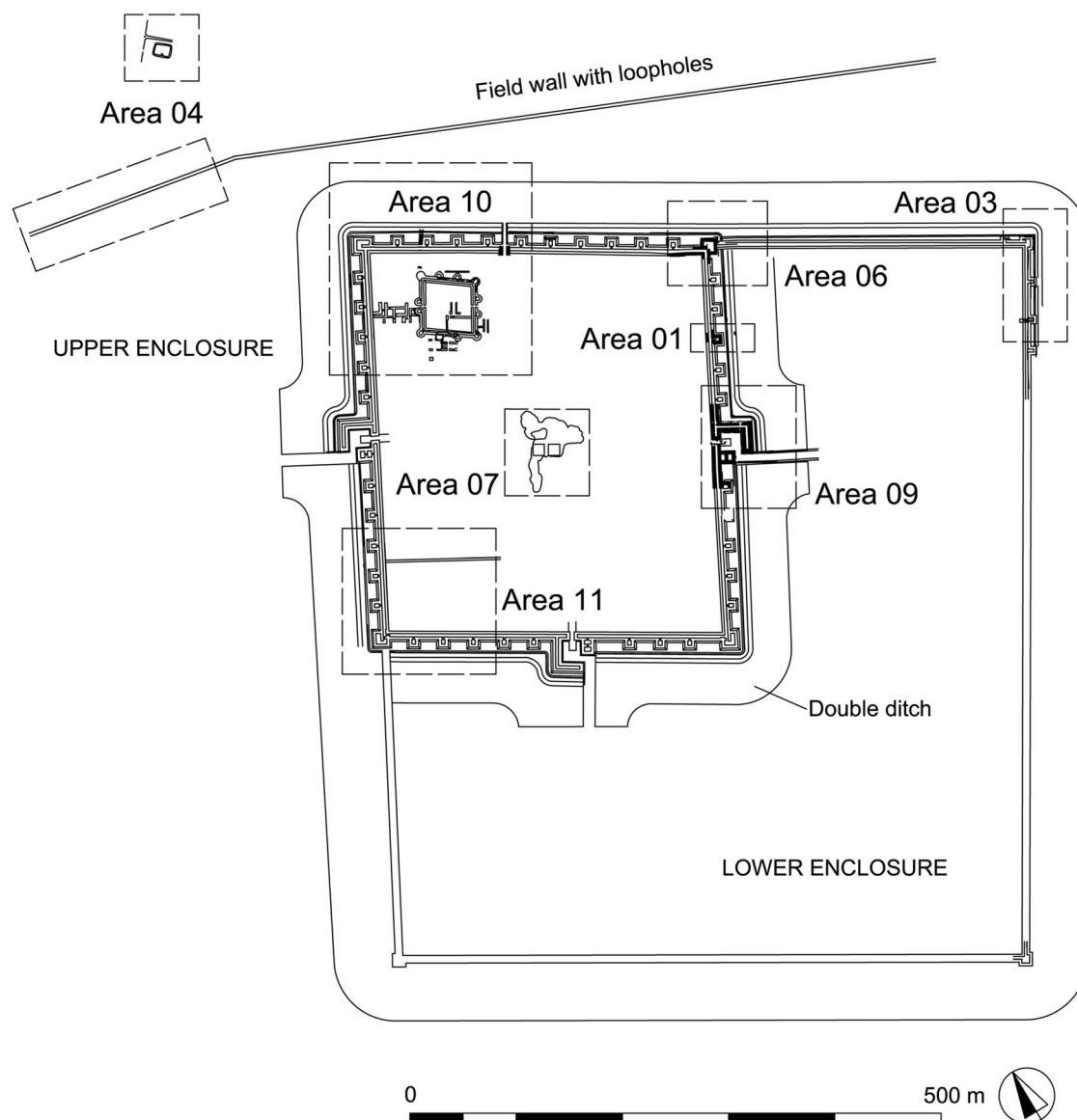


Figure 2. A plan of Akchakhan-kala with its main monumental areas.

A fire altar complex in the south-east quadrant of the Central Building was decorated with painted modelled sculptures of unbaked clay⁹ and a carved ivory prop found beside the altar is similar to an Achaemenid throne leg.¹⁰ Similar forms are also depicted flanking fire altars on Sasanian coins. The walls of the main hypostyle hall in the Central Building (Figure 4) were covered in murals depicting Avestan deities.¹¹ Detailed cartoons representing embroidery on their costumes

show explicit details of Zoroastrian themes including figures of bird-priests wearing the *padām* and carrying the *barsom* (the mask and ritual bundle of twigs used by Zoroastrian priests). This wealth of imagery and structured pathways through the complex can clearly be linked to various practices of royal ceremony, intended to stress the close connections between the king and the divine and the durability of the royal dynastic heritage.

⁹Minardi, "The Hellenistic Chorasmian Ketos."

¹⁰Kidd, "Complex Connections"; Minardi, *Ancient Chorasmia*; Minardi, "The Hellenistic Chorasmian Ketos"; Minardi, "Elite, Wine Consumption and Status Symbols"; Betts et al., "A Carved Ivory Cylinder from Akchakhan-kala."

¹¹Betts et al., "Des divinités avestiques sur les peintures"; Betts et al., "The Akchakhan-kala Wall Paintings."

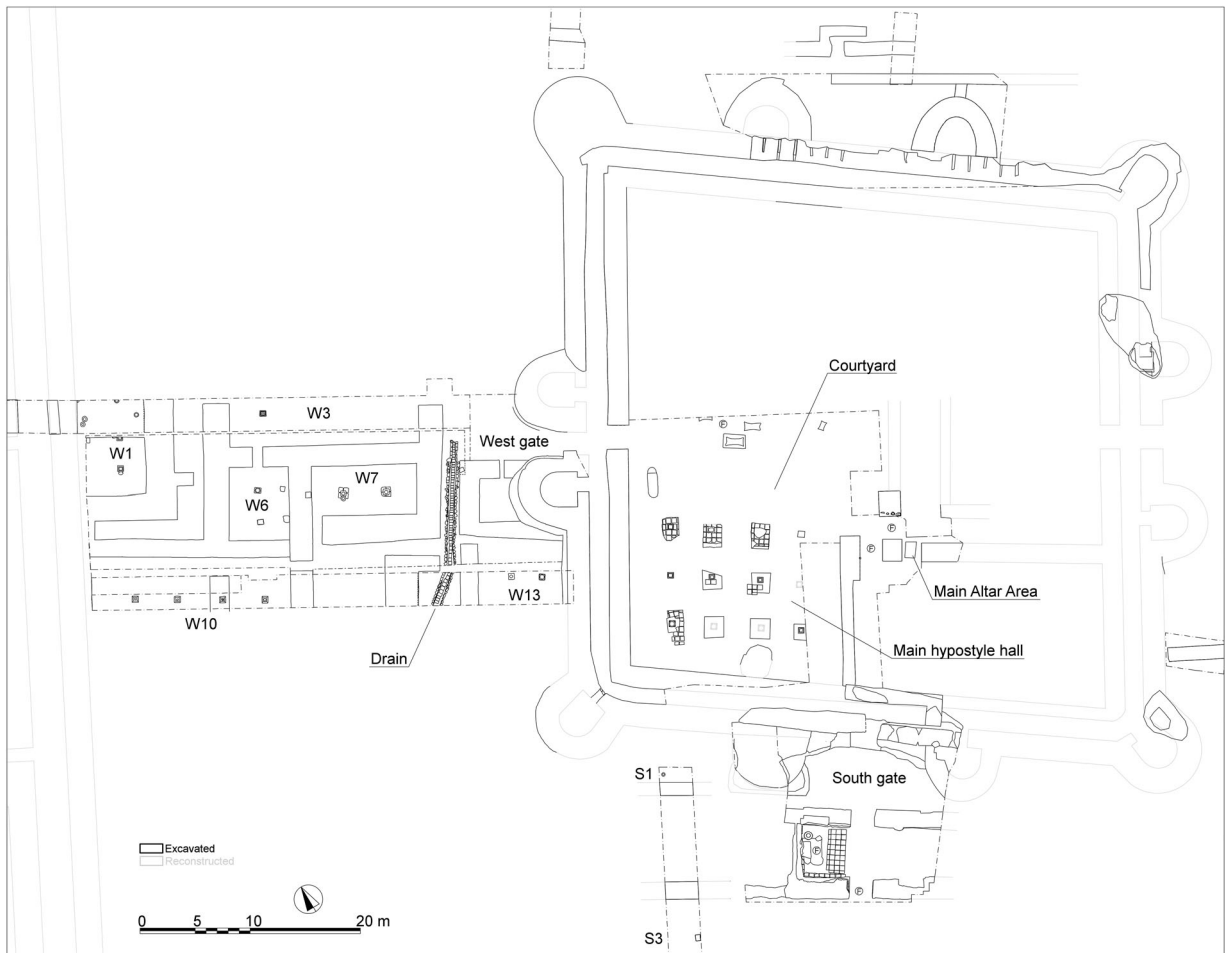


Figure 3. Akchakhan-kala. A plan of Area 10: the Ceremonial Complex.



Figure 4. Akchakhan-kala: the main hypostyle hall in the Central Building viewed from the north.

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2. Architecture of Area 10

2.1. The architecture

The main hypostyle hall is located in the Central Building (Figure 4). The hall is walled on three sides and opens to the north. The massive beams of the timber roof were supported on 12 columns arranged in 3 rows of 4 running east–west. The wooden columns stood on two-part stone bases. With one exception, these were provided with additional support by a single layer of mud-brick foundations set into the sand underlying the floor. The exception is the base at the north-east corner which was set into a pit cut into the floor, reinforced by mud bricks. This is presumably because the base is higher than the other 11 and so was lowered to match the height of the others, although it is possible that a more substantial arrangement was made to support a larger column required for holding up more massive beams at the corner. The stone bases, apart from their structural and ornamental functions, also served the important purpose of protecting the columns from termites, which are a major problem in the region.

The Central Building is surrounded by a complex of walls, passageways and chambers on all sides. Those on the western side up to the fortifications have been most fully exposed. For convenience of description they have been numbered by area W1–13 (see Figure 3). Several are rooms with roofs supported by columns.

W1 is a chamber set against the fortifications, forming an elongated room a little over 9 m long and 5 m wide. The full length cannot be confirmed as it continues under the northern baulk. A row of two-part stone column bases ran north–south along the main axis, of which three have been uncovered. The bases were placed directly on the floor with no underlying support and began to sink into the floor during the period of their use. The western wall of the chamber was formed by the fortification wall. To solve the problem of supporting the ceiling in this area against the height of the inner fortifications, stone blocks were set in pits against the base of the walls. One was a torus turned upside down and another was a rectangular stone block. Based on the presence of three central columns, it might be assumed that there was also a third support set against the fortification walls but it was not found. It might have been robbed out or possibly some other architectural solution was found. The blocks against the walls were designed to be functional, not ornamental, and may originally have been plastered over.

W3 appears to be a large open area that extends into the north baulk, with a single column base apparently

in situ at the western end. The column base is in an awkward position to support roof beams and there is no sign of any others.

W6 is a small rectangular chamber aligned north–south with a doorway on the north side. The architecture is curious. There are two rectangular column bases roughly aligned along the north–south axis, indicating that the chamber was roofed in its final form, but there are also two coarser column bases more roughly aligned with the eastern wall, one abutting it and the other some 25 cm away from it. The best explanation for these is that they were used in the same way as the irregular bases in W1 to shorten the span of the roof from the centre to the eastern wall.

W7, adjacent to W6, is slightly larger and aligned east–west. Two column bases remain *in situ*, set on prepared mud-brick plinths cut into the clay floor. There is a third rectangular column base set at the same distance as the others but right up against the east wall above the mud-brick footings. It was placed there after the construction of the walls so must have been a functional architectural support for the roof of the chamber.

W10 was a secondary, potentially large, hypostyle hall set against the western fortification wall (Figure 5). Only the northern part of this has been exposed, revealing a line of four massive column bases. Initially the hall was open to the north but at a late stage a wall was built

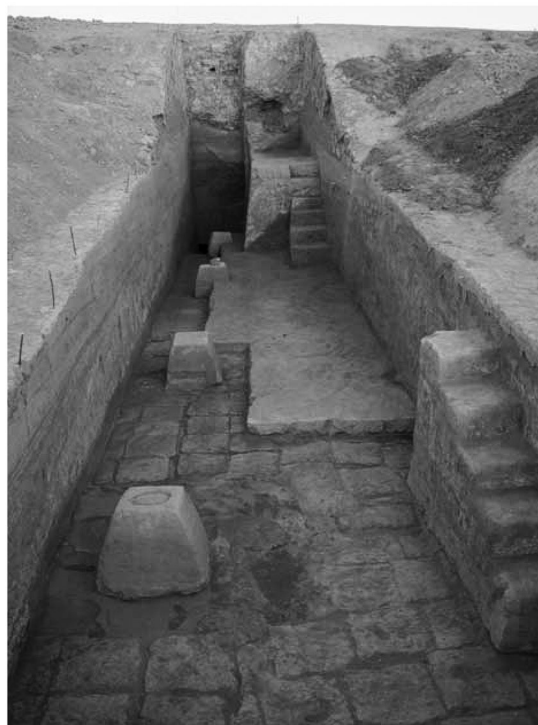


Figure 5. Akchakhan-kala: W10 hypostyle hall.

along this flank. Later, probably in the last stage of use of the western area, a wall was built enclosing the east central column base and dividing the hall into two. The wall created two smaller chambers, one with two central column bases and one with only one visible column base. Both extend southwards into the baulk.

Column bases were also found along the exterior of the walls of the Central Building, either forming a colonnade constructed in the final stages of use of the building or supporting roofs for later constructions against the outer wall. Few of the column bases survive but their positions can be traced by the pits cut for their foundations. These foundations were substantial, containing around four layers of mud bricks. In W13 there was one foundation cut close to the south side of the tower and a second one further to the south, with a column base *in situ*. A second column base was placed and is apparently still *in situ*, with mud-brick foundations c. 4 m to the west, suggesting a roofed structure against the wall rather than an open colonnade.

2.2. The column bases

The sandstone column bases of Akchakhan-kala Area 10 are both of composite and simple type. The composite type has a base surmounted by a bowl-shaped torus, while the simple form consists only of a base without a torus. The bases can be classified into four different types:

- (1) Large trapezoid base (c. 60 × 50 cm, [Figure 6\(C\)](#));
- (2) Smaller trapezoid base (c. 30 × 30 cm, [Figure 6\(B\)](#));
- (3) Three-stepped base (on average 50 × 50 × 30/40 cm, [Figure 6\(A\)](#));
- (4) Simple parallelepiped block (50 × 50 × 30 cm);
- (5) Irregular block (various sizes).

The four column bases in W10, which was initially a large hall before later subdivision, were of Type 1. The hall in its original form falls early in the stratigraphic sequence at the site. Only one example of Type 2 has been found, in the trench south of the Central Building (S3). It was in a disturbed context and cannot be associated with any particular structure. The Type 3 form of base is the most common and is generally also topped by a torus. It is likely that all the column bases in the main hypostyle hall of the Central Building were of Type 3, although only eight have survived *in situ*. One had the torus also *in situ* and there is at least one displaced torus within the hall, so it is reasonable to assume

that all the column bases there had two parts. The column bases in W1 are also of Type 3 and each of the three uncovered had a torus lying beside the base. The Type 4 simple block base was used in W7. There are three *in situ* in a row, the third set against the west wall. The central base had a torus lying beside it. The two central bases in W6 are also of Type 4; there are no obvious signs that these were topped by a torus. The bases to the east are roughly shaped rectangular blocks of Type 5. There are two more Type 4 bases in W13 and here the eastern one has traces of the base of a torus on the upper surface.

Types 1 and 4 have an *anathyrosis* on the top. The shape of the three-stepped bases, Type 3, is variable, probably due to their manufacture in different batches at different times and for different purposes.¹² This variability is mainly characterised by the relative height of the uppermost step. The eight examples from the Central Building are all of the same sub-type with a pronounced top step ([Figure 6](#)). The bowl-shaped tori have been found mainly in association with base Type 3, and to a lesser extent with base Type 4. Three variants of torus are recorded at Akchakhan-kala:

- (A) A large type: tall (height 36.4 cm) with a double top moulding and a maximum diameter of 51 cm ([Figure 6\(D\)](#));
- (B) An intermediate shape quite similar to A but shorter (height 29.6 cm) and with a maximum diameter of 45.5 cm ([Figure 6\(E\)](#));
- (C) A smaller type (height 27 cm), with a maximum diameter of 43.6 cm and a lower double moulding ([Figure 6\(F\)](#)).

The associations of the different types of bowl-shaped tori with the different three-stepped and other bases are unclear since almost none of them were found *in situ*. It can be seen from marks on the column bases that the tori were levered off to bring down the columns during the looting that followed the abandonment of the site. Some of them were then removed; others were left lying near or at some distance from their original bases.

2.3. Halls and chambers

A distinction can be made between the two hypostyle halls and the other rooms (W1, W3, W6, W7), which might more properly be described as columned chambers, although the full extent of the secondary hypostyle hall of W10 is not known. In both the main hypostyle hall in

¹²A single Type 3 specimen of exceptional dimensions (70 × 70 × 50 cm) was found not *in situ* within the fill of the rectangular chamber in front of the southern gate of the Central Building.

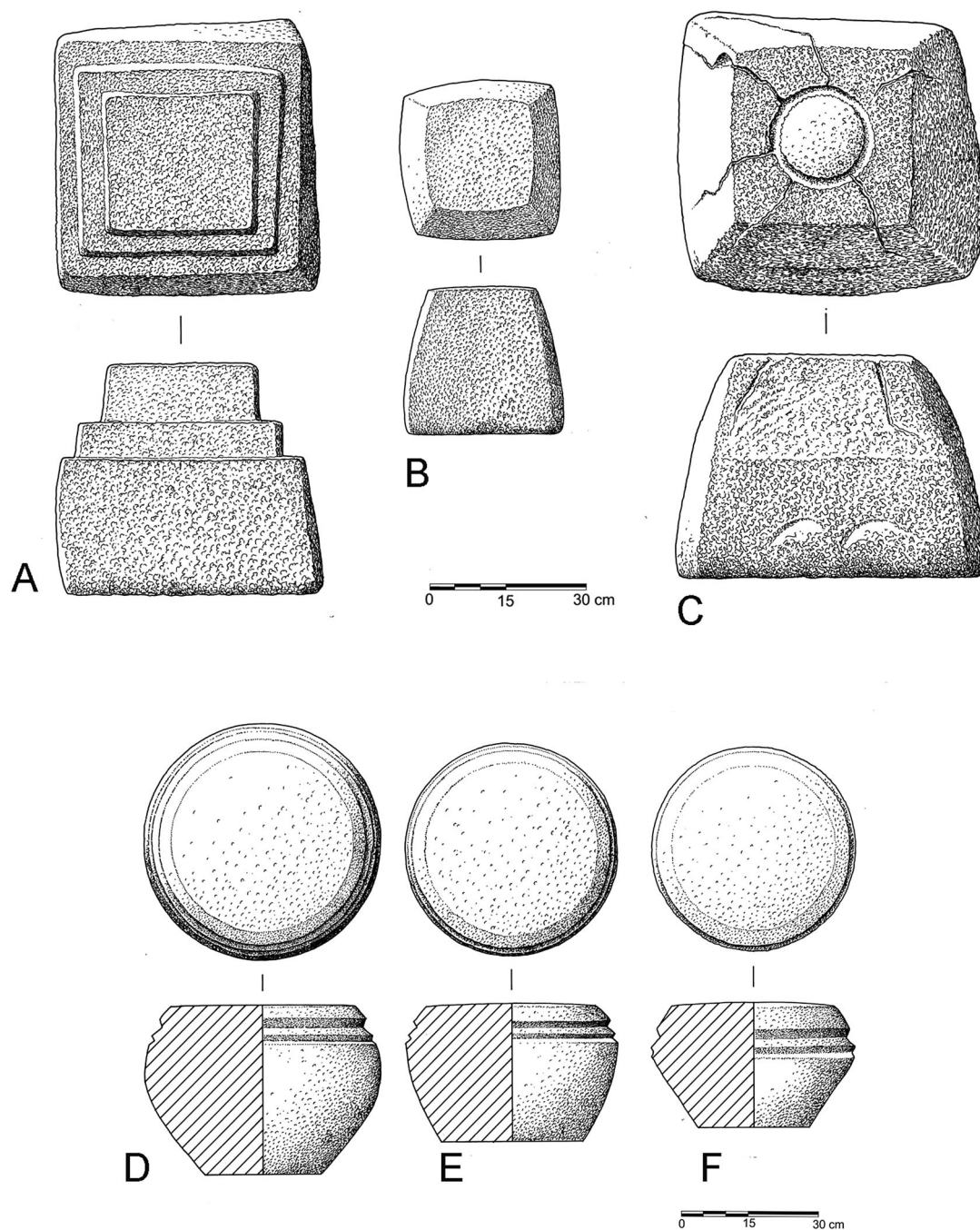


Figure 6. Akchakhan-kala: types of stone column bases.

the Central Building and in W1, there is clear evidence that the wooden columns were covered in gypsum plaster¹³ (Figure 7), although no traces of paint have been found so far. It is possible that they were left intentionally white. Plaster impressions of the roof beams and of coffered ceilings have been found in the main hypostyle hall (Figure 8). The distance between the columns in the main hypostyle hall was c. 4.4 m. In the secondary hall of

W10 it was slightly smaller at c. 3.7 m. In the columned chambers it was even smaller, averaging c. 3 m. Suitable timber for the main beams could have been obtained from the *tugai* forest along the banks of the Amu-Darya where poplar, along with willow, grew profusely. While poplar is not a hardwood, the trunk grows long and straight, and is the timber most commonly used in construction in the region today. Willow is too soft for

¹³Cf. Schmidt, *Persepolis I*, 175, fig. 72.



Figure 7. Akchakhan-kala: chamber W1 showing column bases and plaster from a fallen column.

architectural use and the trunks tend to be stunted and irregular in form.

On the basis of parallels with later forms of this type of architecture in Khorezm (Figure 9), the capitals were almost certainly of wood, but no trace remains of their form. Apart from the painting of a horned animal in W1,¹⁴ there is no obvious sign of decoration in the other columned chambers and in the W10 hall. The main hall in the Central Building, however, was sumptuously decorated with paintings on all the walls. A cluster of ornamental items was found in the south-west corners. These included a fragment of mud plaster covered in gold leaf¹⁵ and a heap of broken pieces of moulded gypsum plaster with holes, suggesting that they were pinned onto a structure of some kind. A very early radiocarbon date of 1451–1296 cal BC (OZE939) from this area can perhaps only be explained by the presence of some heirloom item that could be associated with the ornamental plaster.

Three main stages of construction and use have been identified in the Central Building.¹⁶ It is a little hard to relate these precisely to the architectural developments in the surrounding areas. In all stages the Central Building had approximately the same form. In Stage 1, it had only a single exterior wall. In Stage 2, a second outer wall was added, forming the corridor. In Stage 3, the structure was modified and took its final fortified aspect with the addition of the perimetral towers. It was at this stage that the main hypostyle hall was constructed in the south-west corner and the walls of the corridors and the hall painted. In the western area, the secondary hypostyle hall in W10 is the earliest, later subdivided into chambers. In its first form, it may date to either Stages 1 or 2 in the Central Building. The columns and



Figure 8. Akchakhan-kala: traces of plastered roof beam in the main hypostyle hall, Central Building.



Figure 9. The interior of the Friday Mosque at Khiva.

the painting in W1 may very likely date to Stage 3 and were put in place when the Central Building was renovated for the final time. W3, W6 and W7 are hard to date, but were probably not part of the very first architectural plan that, with the exception of W10, seems to have been a largely open paved area. The columns against the

¹⁴Minardi et al., "A New Wall Painting from Akchakhan-kala."

¹⁵Kidd and Betts, "Entre le fleuve et la steppe," fig. 16.

¹⁶Betts et al., "The Akchakhan-kala Wall Paintings."

outer wall of the Central Building are late and may date to Stage 3.

Thus the use of columns to facilitate roofing was common, but the large hypostyle hall as an architectural feature is likely to have been present from the foundation of the site. It appears in its most elite form in the late stage with the hypostyle hall in the Central Building. The Type 1 base may be an early form and it seems possible that the three-stepped base of Type 3 was a later introduction.

3. Hypostyle halls and columned chambers in Ancient Chorasmia

In Ancient Chorasmia, the hypostyle hall is attested as early as the mid-sixth century BC on the west bank of the Amu-Darya at the site of Kyuzeli-g'yr,¹⁷ and in the mid-fifth century BC on the east bank at Dingil'dzhe. In both cases simple wooden columns were used in the main halls of the two sites, apparently without stone bases at Dingil'dzhe, and with sandstone bases at Kyuzeli-g'yr. In the late fourth/third centuries BC¹⁸ the first hypostyle hall with three-stepped bases surmounted by bowl-shaped tori is attested at Kalaly'g'yr 1 (not far from Kyuzeli-g'yr), while this type, recorded at Akchakhan-kala since the first century BC, appears later in the sites of Gyaur-kala (from the second century AD)¹⁹ and Toprak-kala (c. from the second century AD)²⁰ on the east bank. Some three-stepped bases, spolia from older unknown monuments (from Kyat?),²¹ were also used in the Friday Mosque of Khiva and are attested among the ruins of Mizdakhkan.²²

Kyuzeli-g'yr is the Ancient Chorasmian *gorodishche* best known for its association with the first stages of the polity's socio-political transformations that occurred

during the sixth century BC, most likely due to an Achaemenid intervention in an area previously characterised in its early Iron Age by the presence of agricultural village communities in relations with their semi-nomadic neighbours.²³

Kyuzeli-g'yr was set on a hilltop with visible monumental architecture,²⁴ and heavily fortified around its perimeter along the Chermen-yab canal of the Daudan branch of the Amu-Darya.²⁵ It had an "acropolis" on its highest point (Figure 10) on which what seems to have been a ceremonial complex was built:²⁶ a main building with a layout composed of different chambers, one of which was columned (c. 18.5 × 15 m, 277.5 m²), and courtyards open towards two altars accessible through steps. The columned hall had two rows of three columns and small mud-brick platforms, a feature also attested at Dingil'dzhe, which Soviet archaeologists considered typical of this initial period of Chorasmian history ("Archaic", seventh–fourth centuries BC).²⁷ It seems that the column bases rested on parallelepiped sandstone bases (1/1.2 × 0.4 m), and that on top of one of these were preserved traces of the mortar that once connected the base to the column with a diameter of 0.44 m.²⁸

Dingil'dzhe (mid-fifth–fourth centuries BC) is not a *gorodishche* but a walled rural manor built in a densely cultivated plain surrounded by other minor and similar-sized houses.²⁹ This site is located on the Akcha-Darya, a dry branch of the Amu-Darya that goes north round the eastern side of the Sultan-uiz-dag range. Parallel to this the Chorasmians developed – and garrisoned – an elaborate canal system.³⁰ The manor of Dingil'dzhe has two main construction stages, and during the first one a room of the house (no. 8, 77 m²) was furnished with eight columns.³¹ The architectonic character of

¹⁷Minardi, *Ancient Chorasmia*, 66–9. The chronology of Kyuzeli-g'yr was first elaborated by Tolstov ("Raboty Khorezmskoj arkheologo-étnograficheskoi ékspeditsii," 143–53; *Po drevnim deltam Oksa i Yaksarta*, 96–104; see also Vishnevskaya, "Raskopki na gorodishche Kyuzeli-g'yr"), and more recently it was challenged without a solid argument by Vishnevskaya and Rapoport, "Drevnie tsivilizatsii: novye otkrytiya" (seventh–sixth centuries BC).

¹⁸On this chronology contra the one established by the KhAEE (fifth century BC), see Minardi, *Ancient Chorasmia*, 97–103.

¹⁹Tolstov, "Raboty Khorezmskoj arkheologo-étnograficheskoi ékspeditsii," 192 – second/third centuries AD; Rapoport and Trudnovskaya, "Gorodishche Gyaur-kala," 366 – second century AD; Rapoport, "Svyatilishche vo dvortse na gorodishche Kalaly'g'yr," 143 – "The Beginning of our Era."

²⁰On Toprak-kala see below. A bell-shaped torus is held in the museum of Ellikala, allegedly from the site of Burly-kala (pers. obs.).

²¹Pugachenkova, *Termez, Sharh-e Siabz, Khiva*, 115–16. The wooden columns were transported from an older mosque located in Kyat; for the stone bases this is more uncertain.

²²In Chorasmia, however, three-stepped bases were also carved during the Middle Ages, see e.g. Kd'yrniyazov, "Remeslo Khorezma v XIII–XIV vv."

²³On the west bank of the Amu-Darya this culture has been named Kuyusa'i by the KhAEE. On the opposite bank the local Iron Age (Iron Age 2) was the late Amirabad. For further references, see Minardi, *Ancient Chorasmia*, 61–4, 71–2.

²⁴Tolstov, "Raboty Khorezmskoj arkheologo-étnograficheskoi ékspeditsii," 143–53.

²⁵Andrianov, "Arkheologo-topograficheskie issledovaniya drevnei."

²⁶Area/excavation site VI; Vishnevskaya and Rapoport, "Drevnie tsivilizatsii."

²⁷Vorob'eva, *Dingil'dzhe usad'ba seredinj i tysyacheletiya do*, 111. This period is now called Antique 1 (Minardi, *Ancient Chorasmia* – since c. the mid sixth century BC).

²⁸Vorob'eva, *Dingil'dzhe usad'ba seredinj i tysyacheletiya do*, 103; Vishnevskaya and Rapoport, "Drevnie tsivilizatsii," 155.

²⁹Vorob'eva, *Dingil'dzhe usad'ba seredinj i tysyacheletiya do*.

³⁰Andrianov, *Drevnie orositel'nye sistemy Priaral'ya*, 116–24. This territory was defended and controlled by some of the main Chorasmian historical sites such as Bazar-kala (perhaps the main centre of the area during the fourth century BC), and the chronologically following Ko'i-Krylgan-kala and Dzhanbas-kala (both sites contemporary with Akchakhan-kala). On these sites, see conveniently Khozhaniyazov, *The Military Architecture of Ancient Chorasmia* with references. No column bases are recorded for these sites although Tolstov inferred that pieces of stone found during the excavation of Ko'i-Krylgan-kala might have been stone bases from the upper storey of the complex (see Tolstov and Vainberg, *Ko'i-Krylgan-kala*, 40).

³¹Vorob'eva, *Dingil'dzhe usad'ba seredinj i tysyacheletiya do*, 33–34, fig. 12.

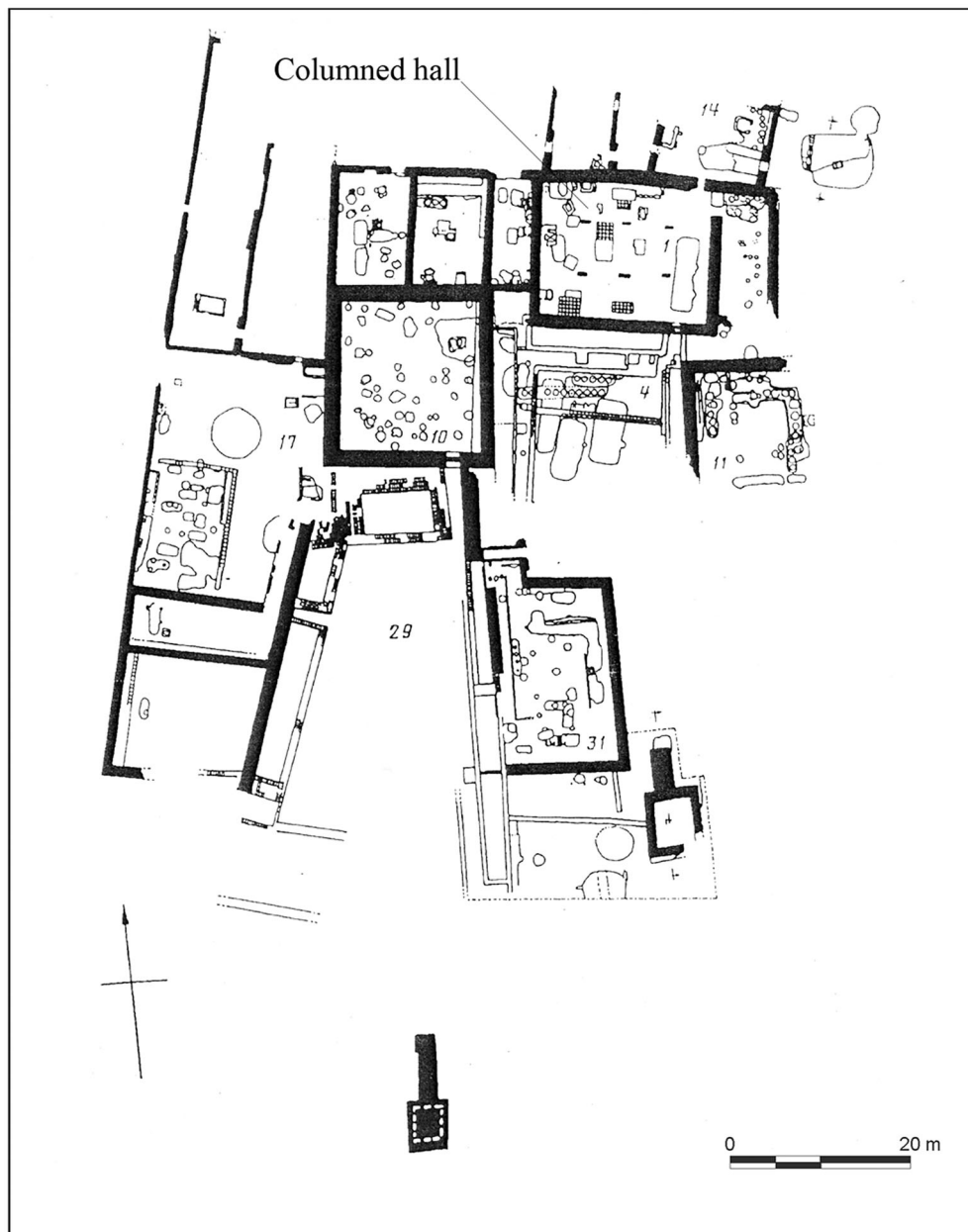


Figure 10. The structure of the “acropolis” of Kyuzeli-g'yr (after Vishnevskaya and Rapoport, “Drevnie tsivilizatsii: novye otkrytiya,” fig. 3).

this room is not comparable with the hall of Kyuzeli-g'yr but nonetheless its features and the other finds from the manor indicate that it was most likely inhabited by a lesser member of the local elite.³² Columns here were composed of plastered bundles of reeds directly set into post-holes, and the room also had a central mud-brick platform and another semi-circular platform supported by poles on its western side.³³

The first Chorasmian multipart column bases composed of a three-stepped base and a torus came from the KhAEE excavations of the c. third-century BC palace of Kalal'g'yr 1 (Figure 11). This partially investigated site³⁴ lies c. 16 km north-east of Kyuzeli-g'yr and its main architectural element is an elite residence – the palace (c. 80 × 80 m) – defended by a rectangular enclosure that surrounds the whole site. In the palace the

³²As highlighted by the finds from the manor and the nearby area (Vorob'eva, *Dingil'dzhe usad'ba serediny i tysyacheletiya do*, discussed in Minardi, *Ancient Chorasmia*, 75–81).

³³Vorob'eva, *Dingil'dzhe usad'ba serediny i tysyacheletiya do*, 35. A stone block (33 × 26 × 5 cm), not *in situ*, from the manor has been tentatively interpreted as a possible stone base (*Dingil'dzhe usad'ba serediny i tysyacheletiya do*, 92–3, with fig. 30).

³⁴Tolstov, “Raboty Khorezmskoi arkhologo-etnograficheskoi ekspeditsii,” 153–67; Rapoport and Lapirov-Skoblo, “Raskopki dvortsovogo zdaniya na gorodishche,” 141–56. For further references, see Minardi, *Ancient Chorasmia*.

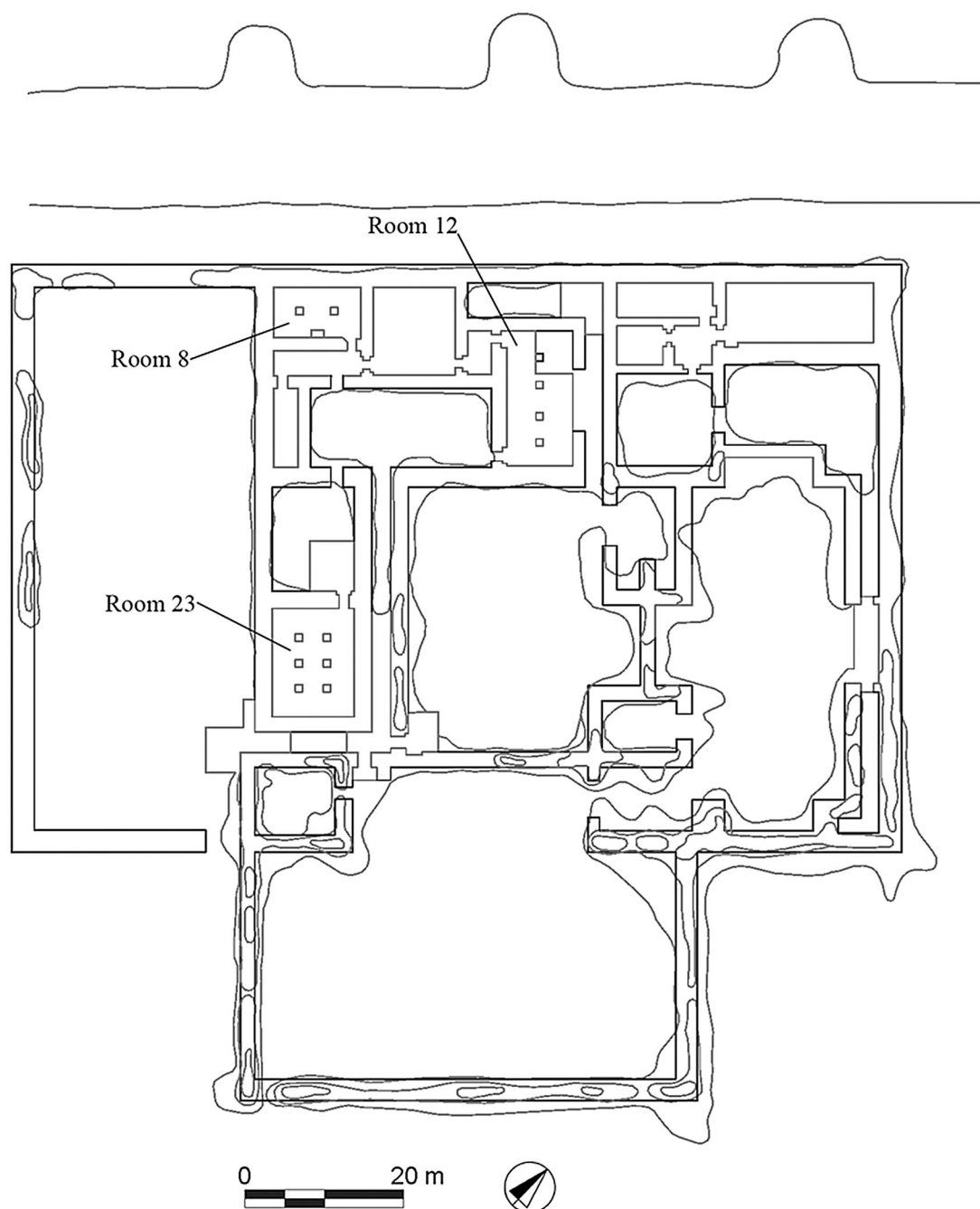


Figure 11. The palace of Kalalī-gīr 1 (redrawn after Tolstov et al., “Raboty Khorezmskoj arkeologo-etnograficheskoj ekspeditsii AN SSSR v 1958–1960g,” 145, fig. 2).

presence of columns is recorded for three rooms: a main rectangular hall with two rows of three columns (Room 23), a secondary room of private character with two columns standing in front of a niche (Room 8) and a third rectangular room with a single central row of four columns (Room 12).³⁵ The sandstone bases of Room 12

measure $70 \times 70 \times 40$ cm and the tori, found not *in situ* in a nearby room but probably belonging to this columned hall, have a height of 41 cm, a maximum/top diameter of 65 cm and a minimum/lower one of 35 cm.³⁶ The larger Room 23 (13.5×10.3 m, 139 m²) presents bases slightly different in size ($70 \times 70 \times$

³⁵For their location, see the plan in Rapoport and Lapiro-Skoblo, “Raskopki dvortsovogo zdaniya na gorodishche,” 145, fig. 2.

³⁶Rapoport and Lapiro-Skoblo, “Raskopki dvortsovogo zdaniya na gorodishche,” 146. No traces of the wooden columns were found (“Raskopki dvortsovogo zdaniya na gorodishche,” 146) and the reconstruction of the columned spaces of the palace by the excavators is biased by speculative parallels with Achaemenid architecture.

50 cm) and no associate tori were found *in situ*.³⁷ Finally, the two bases from the smaller chamber 8, of which only traces were left, were resting on mud-brick platforms overlaid by the plastering of the floor (cf. Akchakhan-kala, above).³⁸

East bank Gyaur-kala and Toprak-kala, the other two sites with three-stepped column bases surmounted by bowl-shaped tori, are not earlier than the second century AD. The KhAEE excavation at Gyaur-kala (c. second century AD) brought to light a room with a niche (6.05 × 8.05 m) and two columns quite similar to the chamber with a niche at Kalal̄y-ḡyr 1 (Figure 12), but here the stepped bases measure 53 × 53 × 33 cm and their tori are 30 cm in height with a maximum diameter equal to 0.45 cm.³⁹

Toprak-kala (c. second–sixth centuries AD), one of the major east bank Chorasmian sites, has a strongly fortified palace (the “High Palace”) elevated on an artificial platform overlooking an enclosed settlement, with an additional external complex (the “Lower Palace”) to the north, outside the fortifications. Three-stepped column bases with bowl-shaped tori were used in all these site areas although the only examples of columned halls are those of the High Palace (c. second–fourth centuries AD).⁴⁰ According to the KhAEE the palace had all the eight major rooms furnished with this type of column base. The tori had a diameter of 30–40 cm, with the exception of one fragmentary specimen from the “Throne Room” (the largest room of the palace, c. 371.5 m²), which had a maximum diameter of 55 cm.⁴¹ The layout of these columned halls is, however, quite different in conception and organisation of space in comparison with those at Akchakhan-kala, and particularly with the main hypostyle hall. This might be expected in light of the cultural shift that Toprak-kala has represented for Ancient Chorasmia since its foundation.⁴² Typologically, the Akchakhan-kala column bases find almost a match with the pair discovered at Gyaur-kala, whereas those from Kalal̄y-ḡyr 1 are definitely larger. On the other hand, the multiple solution approach regarding the use of columns adopted for different spaces at Kalal̄y-ḡyr 1 (from a single row within

a narrow elongated space, to a two-row hall) is comparable with the variety of their use at Akchakhan-kala.

The variety in type and chronology of the hypostyle halls and columned chambers at Akchakhan-kala places it as the most complex set of columned buildings in Chorasmia before the foundation of Toprak-kala, and the main hypostyle hall in the Central Building the largest of its kind. Kyuzeli-ḡyr, Kalal̄y-ḡyr 1, Akchakhan-kala and Toprak-kala were all major centres, probably capitals (regional or not) of the Chorasmian polity, and it is not incidental that they illustrate the adoption and development of monumental columned halls in the polity, structures employed by the elite to show and administrate their power. The evidence from Kyuzeli-ḡyr, a monumental sixth-century BC centre marking the new emergence of monumental construction in Chorasmia, seems to underline the fact that an architectonic model was directly imported into the area. This came packaged with a new material culture and an administrative system exemplified by the great canalisation works that also appeared in the area at this time.⁴³

4. The origins of the Chorasmian columned halls

What are the archetypes of the Ancient Chorasmian columned halls? Despite the likely use of upright timbers supporting cross-beams in houses of the Eurasian Bronze Age,⁴⁴ the appearance of a package of advanced material and technological elements, of which monumental architecture is only one, suggests that the vernacular model might be dismissed in favour of one from the realm of the elite. Due to the historical and archaeological data regarding the integration of the polity in the sphere of influence of the Achaemenid Empire, and thence the beginning of its historic age, it would be reasonable to assume that the archetypes were Persian. On the other hand, it is also necessary to consider the part played by the Achaemenid satrapies of Central Asia, for instance Bactriana, a polity with its own centuries old cultural tradition that seems even to precede Cyrus’ conquest over Central Asia, but of which not

³⁷Tolstov, *Po drevnim deltam Oksa i Yaksarta*, 113, fig. 54; Rapoport and Lapiro-Skoblo, “Raskopki dvortsovogo zdaniya na gorodishche,” 150, with fig. 6. The palace was probably deconstructed during the first century BC (Minardi, *Ancient Chorasmia*, 101).

³⁸Rapoport, “Svyatilishche vo dvortse na gorodishe Kalal̄y-ḡyr.”

³⁹Rapoport and Trudnovskaya, “Gorodishche Gyaur-kala,” 359–61, illustrated with figs. 6 and 7.

⁴⁰Palace: Rapoport and Nerazik, *Toprak-kala*, 47, with fig. 21; main building excavated within the settlement/gorodishche (block A, a straight-axis structure assumed to be a fire temple): Nerazik and Rapoport, *Gorodishche Toprak-Kala*, 4–45, with figs. 22 and 23 and p. 20 for block B first stage (for mud-brick platforms in the same domestic block, *Gorodishche Toprak-Kala*, 22, 30–1, 38); column structures outside the enclosure: Rapoport, “Zagorodnye dvortsy i khramy Toprak-kaly,” 170, fig. 4 (Building I, Room 40 with two columns).

⁴¹Rapoport and Nerazik, *Gorodishche Toprak-Kala*, 46; the rooms of the palace supposedly with columns were nos. 5, 6, 10, 11 (the “Throne Room”), 14, 29, 32 (the “Hall of Kings”, c. 258 m²), and 86. Few of them were actually recorded.

⁴²Tolstov, *Po drevnim deltam Oksa i Yaksarta*, 226; Minardi, *Ancient Chorasmia*.

⁴³Minardi, *Ancient Chorasmia*.

⁴⁴Kuzmina, *The Origins of the Indo-Iranians*, 40–8.

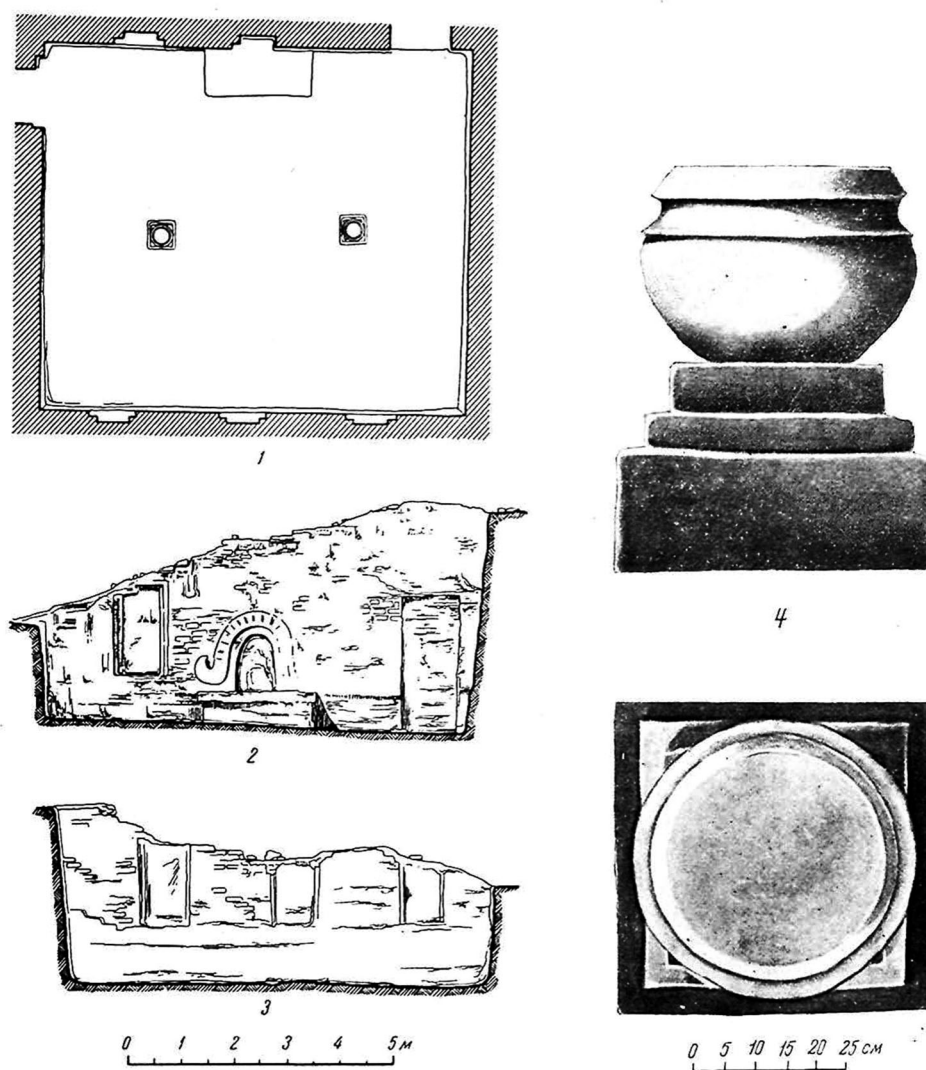


Figure 12. Gyaur-kala: columned chamber and column base (after Rapoport and Trudnovskaya, "Gorodishche Gyaur-kala," figs. 6 and 7).

much can be said for lack of archaeological data (see below).⁴⁵ It must also be noted that the excavated Chorasmian columned halls do not reach the degree of monumentality that can be found in the Achaemenid architecture of Pasargadae, Susa or Persepolis, thus in comparison they appear different, as in the cases of Kalal̄y-ḡyr 1 and Akchakhan-kala, and in the case of Kyuzeli-ḡyr somewhat archaic. Therefore, although the evidence is limited, the inspiration for Chorasmian

architecture might be found on a pathway from Persia through Central Asia.

As regards Iran, whether the archetype of the multi-rowed columned halls of Achaemenid Persia is a local innovation or not,⁴⁶ it appears to have originated in the north-western part of the country in the second-first millennium BC (Hasanlu Period V-IV).⁴⁷ In the Median Period columned halls were a typical architectonic feature, as attested by Tepe Nush-I Jan

⁴⁵For a preliminary consideration of the sources and archaeological data regarding the relation of Chorasmia and its south, see Minardi, *Ancient Chorasmia*; Minardi, "The Hellenistic Chorasmian Ketos"; Minardi, "Elite, Wine Consumption and Status Symbols."

⁴⁶See Muscarella, *Bronze and Iron*, 208-9; Gopnik, "Why Columned Halls?" The use of columns in the Ancient Near East was not extensive. On the use of columns in Mesopotamia in pre-Achaemenid times see Collon, "Mesopotamian Columns"; on other areas (Egypt, Phrygia, etc.), in which columned spaces formed a consistent element in the architecture of the first half of the first millennium, see the considerations by Stronach and Roaf, *Nush-i Jan I*, 188-9 with references (also to Ozbaki Tepe). On the peculiar/experimental use of columned spaces at Baba Jan III (ninth/eighth centuries BC), see also Goff, "Excavations at Baba Jan."

⁴⁷Perrot, *Le Palais de Darius à Suse*, xix. On Hasanlu, see the recent Dyson and Voigt, "A Temple at Hasanlu"; Muscarella, "The Excavation of Hasanlu", and the review of the excavation data by Roaf, "The Iron Age Architecture of Hasanlu" with references.

(c. eighth–second half of seventh/beginning of sixth centuries BC)⁴⁸ and by the assembly halls of Godin Tepe II (750/700–500 BC).⁴⁹ In Anatolia, the Urartian centres of Altintepe⁵⁰ and Bastam (destroyed in the second half of the seventh century BC)⁵¹ are also evidence of pre-Achaemenid monumental columned halls, as is the late seventh-century BC Phrygian site of Kerkenes Dağ (destroyed in the mid-sixth century BC).⁵² The same evidence for a parallel development of pre-Achaemenid columned halls outside Iran is documented in south-eastern Arabia during the Iron Age Period II⁵³ (e.g. Muweilah late ninth–early eighth centuries BC), where the connection with Iran is only apparent and where these structures are the output of their “local economic and symbolic context”.⁵⁴

In Central Asia in the mid-first millennium BC, within the Dashlī area of Bactriana, a columned “portico-iwan” composed of 28 brick columns on mud-brick platforms (2.5 × 2.5 m) opening onto 2 courtyards is the essential element of the “Summer Palace” at the site of Altyn-10 (also known as “Object II”, 80 × 55 m).⁵⁵ The “Temple” of Tillya tepe (27.7 × 36 m), on the other hand, seems to be the first pillared structure attested in Bactriana.⁵⁶ This fortified building, raised on an artificial platform, had a parallelogram perimetric design with four corner towers and two other towers on its east and west sides. In stage Ib (mid-ninth century–c. 600 BC)⁵⁷ inside its enclosure there was a “columned” hall consisting of nine mud-brick plastered pillars (three pillars in three rows) and additional pilasters. It also had an external – but still within the enclosure – pillared portico on the opposite side of its main northern entrance. Hence, in the light of the available data it seems that in Bactriana

columned, or at least pillared, halls existed in pre-Achaemenid times, although the evidence for columns on bases appears only in the mid-first millennium BC and not, so far, associated with hypostyle halls.

In Achaemenid Persia the use of multiple rows of columns in order to roof large enclosed spaces dedicated to societal events seems to mark a distinctive aspect of imperial Achaemenid self-representation and is not only an architectonic solution.⁵⁸ The main hypostyle hall of Akchakhan-kala, opening onto a courtyard and decorated with wall paintings of religious significance⁵⁹ confirms that in Chorasmia columned spaces had a similar ceremonial character.

5. Column bases in Persia and Central Asia

The composite column bases of Akchakhan-kala are without a clear parallel outside the Chorasmian territory. As already noted elsewhere,⁶⁰ the closest type of stone base from Iran comes from a post-Achaemenid monument, the “Frataraka” temple north-west of Persepolis.⁶¹ This structure has two rooms with plain three-stepped plinths, the only examples in Persepolis, and not comparable with the similarly three-stepped column bases attested at Pasargadae,⁶² although their models were most likely Achaemenid.⁶³ Whether a column or a torus was erected above these stepped bases is not entirely clear, increasing the difficulty of this typological comparison.⁶⁴

Considering that the composite base is not recorded in Chorasmia before the third century BC, in addition to the fact that in the sixth/fifth centuries BC three-stepped bases are not yet documented in the polity, it

⁴⁸Stronach and Roaf, *Nush-i Jan I*, 213–17; three rows of four columns.

⁴⁹Young, *Excavations of the Godin Project: First Progress*; Young and Levine, *Excavations of the Godin Project: Second Progress*; Huff, “From Median to Achaemenian Palace”; Stronach and Roaf, *Nush-i Jan I*, 188.

⁵⁰Karaosmanoğlu and Korucu, “The Apadana of Altintepe in the Light”: the “Apadana”, in its second stage (“Urartian Period, Late Stage”) composed of six columns in two rows for an area measuring 44 × 25.3 m. Summers (“Archaeological Evidence for the Achaemenid Period”) suggested an Achaemenid date for this structure.

⁵¹Keiss, *Bastam II, Ausgrabungen in den urartäischen Anlagen*; for the location of the pillar halls see in particular the plans on pp. 32–7.

⁵²Summers, “Phrygian Expansion to the East”; Summers, “Between Urartu and Phrygia”; Summers, “Connectivity and Cultural Isolation at Kerkenes”; Summers and Summers, “The Kale at Kerkenes Dağ.”

⁵³Magee, *The Archaeology of Prehistoric Arabia*, 226–35; for other examples and further considerations, see Boucharlat and Lombard, “Le bâtiment G de Rumeilah”; on the significance of the Arabian columned halls, see also Magee, “Authority, Legitimation and Columned Halls.”

⁵⁴Magee, *The Archaeology of Prehistoric Arabia*, 232.

⁵⁵Sarianidi, *Drevnie zemledel'tsy Afganistana*, 121–8. See also Pugachenkova 1982 (sixth–fourth centuries BC). In north Bactriana the same scheme consisting of a central courtyard surrounded by a columned portico is attested in the Kizylcha 6 fortified manor (Sagdullaev, “Raskopki drevnebaktrijskoj usad'by Kizylcha 6” – “horizon 4”, perhaps 3, i.e. according to the excavator, c. fifth–fourth centuries).

⁵⁶Sarianidi (*Khram i nekropol' Tillyatepe*, 7) even hypothesised the use of wooden columns for Stage Ia due to the architectural layout of the original chamber encompassed by the walls of the fort.

⁵⁷Sarianidi, *Khram i nekropol' Tillyatepe*, 37–9.

⁵⁸As suggested by Gopnik, “Why Columned Halls?”

⁵⁹Betts et al., “The Akchakhan-kala Wall Paintings.”

⁶⁰It is erroneous to consider the columned hall of Kalaly-gyr 1 as Achaemenid by reason of its three-stepped type bases (Minardi, *Ancient Chorasmia*, 101–2).

⁶¹Schmidt, *Persepolis I*, 56, 50–1, with figs. 16–17; for analysis, see Bernard, “Quatrième campagne de fouilles à Ai Khanoum,” 337, n. 1; Schippmann, *Die iranischen Feuerheiligtümer*, 177–80; Boucharlat, “Monuments religieux de la Perse achéménide,” 130–2; Boucharlat, “Le destin des résidences et sites perses d’Iran”; Boyce and Grenet, *A History of Zoroastrianism*, 117–18; Callieri, “Some Notes on the so-Called Temple”; Callieri, *L’archéologie du Fars à l’époque hellénistique*, with references.

⁶²Francochovich, “Problems of Achaemenid Architecture”; contra Stronach, “On the Evolution of the Early Iranian Fire Temple,” 616, n. 41.

⁶³Callieri, *L’archéologie du Fars à l’époque hellénistique*, 91.

⁶⁴Tilia, *Studies and Restorations at Persepolis*, 86–7; Callieri, *L’archéologie du Fars à l’époque hellénistique*, 91, with fig. 61 (one base with traces of *anathyrosis*).

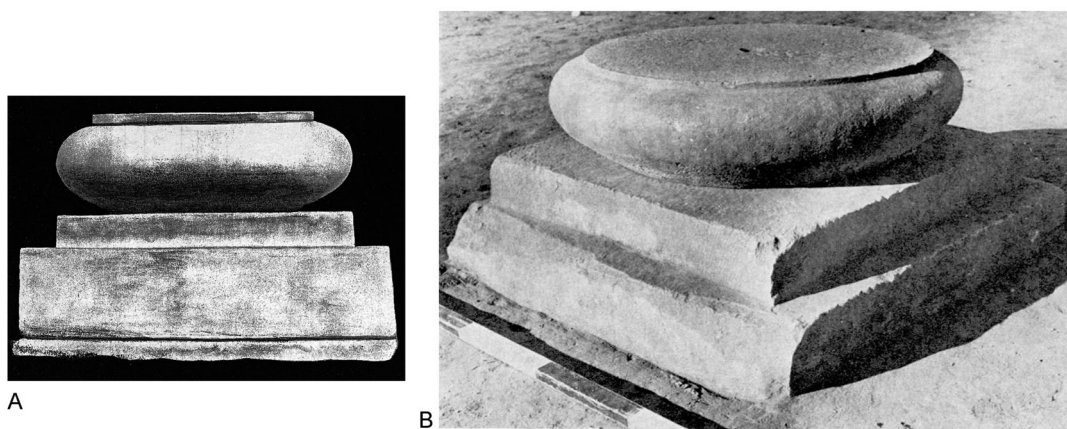


Figure 13. A column base from the Temple of the Oxus (A – after Litvinskii and Pichikyan, *Éllinisticheskii Khram Oksa v Baktrii*, pl. 40) and Ai-Khanoum (B – after Bernard, “Campagne de fouilles 1969 à Ai Khanoum,” fig. 25).

is difficult to relate any Achaemenid hypothetical models with the Chorasmian output. Thus, the bowl-shaped elements of Akchakhan-kala might well have also derived from (post-)Achaemenid types⁶⁵ locally developed. This interpretation suits the fact that from the third-century BC Chorasmia absorbed some elements of the Hellenistic material culture that predominated in its surroundings.⁶⁶ Thus the Achaemenid/post-Achaemenid models from which the Chorasmian bases come might have been developed in Central Asia and further in Chorasmia during the third century BC.

Indeed, if we compare the Chorasmian three-stepped/ bowl-shaped torus bases with the contemporaneous columned bases of Central Asia, where the use of columnar architecture further developed after the Hellenisation of the area, what emerges is, on the one hand, the singularity of the Chorasmian specimens, and on the other, the fact that Chorasmian bases find their best parallel with others such as those of the Temple of the Oxus.⁶⁷ Here the column bases are composite and have a trapezoidal two-stepped base surmounted by a flattened version of the bowl-shaped torus (Figure 13(A)).⁶⁸ At Ai-Khanoum the column bases of the south-east portico of the “Sanctuaire du temple à redans” (Figure 13(B)) are

of the same “Oriental” type (as defined in contrast with the Greek specimens of the polis).⁶⁹ In the palace of Khalchayan similar column bases were also found,⁷⁰ for example in Old Nisa, with a three-stepped plinth, although associated with a more “traditional” torus with an elliptic section.⁷¹

Hence, it may be inferred that in Chorasmia the composite column bases were a further local interpretation/adaptation of the Near Eastern/Achaemenid Hellenistic-influenced stone column bases of Central Asia (and Parthia).

6. Conclusions

The small mud-brick platforms in architectonic association with courtyards and pillared halls as seen at Kyuzeli-gŷr (and on a lesser scale at Dingil'dzhe) may be connected with the early examples of columned halls in north-western Iran where it is assumed that, as regards Achaemenid architecture, this type of hall with official purposes had its roots. In light of the fact that no Bronze Age examples are attested in Chorasmia, and because columns, since their first use in the polity at the beginning of the Chorasmian historical Iron Age

⁶⁵See for instance the undecorated column base from Dārābgird (eastern Fars) with “*cyma reversa* profile” (Morgan, “Some Remarks on a Preliminary Survey,” fig. 11; uncertain dating); see also the less similar specimens from Tal-e Zohak (Pohanka, “Zu einigen Architekturstücken von Tell-i Zohak bei Fasa”; uncertain dating, “Parthian”); for further references see Callieri, *L’archéologie du Fars à l’époque hellénistique*. Cf. also with the column bases from the megaron of Kerkenes Dağ (Summers et al., “Megarons and Associated Structures at Kerkenes Dağ,” figs. 24–5).

⁶⁶Minardi, *Ancient Chorasmia*, 87–113; Minardi, “The Hellenistic Chorasmian Ketos”; Minardi, “Elite, Wine Consumption and Status Symbols”; Betts et al., “The Akchakhan-kala Wall Paintings.”

⁶⁷Litvinskii and Pichikyan, *Éllinisticheskii Khram Oksa v Baktrii*, pls. 40–1; *Taxt-i Sangin*, 64, pl. 25; see also note 69.

⁶⁸The rounded/elliptic torus on a plinth appears first at Khorsabad (monolithic in this case, Loud and Altman, *Khorsabad. Part II*, Palace F, pl. 41; see also Collon, “Mesopotamian Columns”); it is also attested during Achaemenid times in Fars (Tilia, *Studies and Restorations at Persepolis*, 73–83), at Persepolis (Schmidt, *Persepolis I*, 175, fig. 72), at Susa (Shahur palace, Boucharlat in Perrot, *Le Palais de Darius à Suse*, 419, fig. 484) and later at Old Nisa (Pugachenkova, *Puti razvitiya arkhitektury yuzhnogo Turkmenistana*, 62), Ai-Khanoum (Bernard, “Campagne de fouilles 1969 à Ai Khanoum,” 336, fig. 28), Khalchayan (Pugachenkova, *Khalchayan*, 48, fig. 25); see also Pugachenkova, “Novye dannye o khudozhestvennoi kul'ture Baktrii,” 37–8 on Khatŷn-Rabat.

⁶⁹Bernard, “Campagne de fouilles 1969 à Ai Khanoum,” 333, fig. 25; for a three-stepped specimen from the *Propylée* of Ai-Khanoum, see Bernard, *Fouilles d’Ai Khanoum I*, pl. 24a. On the column bases of Ai-Khanoum and their ascendancy, see also Bernard, “Les traditions orientales dans l’architecture gréco-bactrienne” with references.

⁷⁰Pugachenkova, *Khalchayan*, 132, fig. 79, no. 3.

⁷¹Pilipko, *Staraja Nisa*, 240, fig. 176. See note 66.

marked elite spaces (even of the lesser aristocracy), a vernacular origin of the use of columns within the local Chorasmian architecture is probably to be excluded. On the other hand, in sixth–fourth-centuries BC Chorasmia there is nothing comparable with the contemporary Achaemenid columned halls. An echo might be seen in the main hypostyle hall of Akchakhan-kala but only from the point of view of its historical and archaeological context, and the recent discovery of wall paintings of religious (Zoroastrian) subject with some Persian iconographic traits.⁷²

At Akchakhan-kala the first-century BC composite columned bases, which in Chorasmia have seemingly been used since the third century BC, are probably a local adaptation/interpretation of the Central Asian column bases with stepped plinths and rounded torus of the early Hellenistic period with Near Eastern archetypes. The fortress-like monumentality⁷³ of the Central Building in the Ceremonial Complex with its constituent elements (courtyard, columned hall open onto the latter, *sancta sanctorum* with fire altar, and an as yet unknown area perhaps of private character) is perhaps unique⁷⁴ and is a further mark of the architectonic heterogeneity in the polity. Its parallelogram plan with perimetric towers is reminiscent of the Bronze Age fortifications of Margiana and Bactriana (as seen for the “Temple” of Tillya Tepe),⁷⁵ but a chronological gap and the lack of data point to the fact that this ought to be incidental, a cultural convergence within a common Iranian substratum (and for religious/symbolic purposes).

Being aware of the Zoroastrian character of the Ceremonial Complex of Akchakhan-kala we should consider the idea that the choice of using the three-step configuration for the column bases of the main hypostyle hall and also for W1, again with elaborate painted decoration, might be related to the symbolic meaning of the stepped element.⁷⁶ Stepped fire altars are known in Iran, Central Asia and India, and the Achaemenid stepped altars depicted on seals featuring ritual scenes are well known.⁷⁷ The stone fire altars of Pasargadae,⁷⁸ for instance, as well as the one of Kuh-e Khwaja,⁷⁹ show a three-stepped base not dissimilar to the lower element of the Chorasmian stone bases.⁸⁰

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⁷²Betts et al., “The Akchakhan-kala Wall Paintings.”

⁷³The complex is fortified but it is not a fortress; cf. e.g. Tepe Nush-I Jan “Central Temple’s tower-like appearance” (Stronach and Roaf, *Nush-i Jan I*, 211).

⁷⁴The unexcavated site of Bazar-kala has two similar enclosures and nothing is known about the architecture within them (see Khozhaniyazov, *The Military Architecture of Ancient Chorasmia*, 203, fig. 11).

⁷⁵As preliminarily considered in Helms et al., “The Karakalpak-Australian Excavations: The Northern Frontier.”

⁷⁶In this regard, on the Chorasmian temple of Tash-k’irman, see Betts and Yagodin, “The Tash-k’irman Tepe Cult Complex.” On the three steps, see also Stronach, *Pasargadae*, 141–2.

⁷⁷On the origin, typology and iconography of the stepped altars, see Yamamoto, “The Zoroastrian Temple Cult of Fire (I)”; Yamamoto, “The Zoroastrian Temple Cult of Fire (II)”; Genito, “Altari a gradini nell’Iran antico”; Houtkamp, “Some Remarks on Fire Altars”; see also Haerincck and Overlaet, “Altar Shrines and Fire Altars?”

⁷⁸Stronach, *Pasargadae*, fig. 72.

⁷⁹Yamamoto, “The Zoroastrian Temple Cult of Fire (I),” pl. 34.

⁸⁰In this regard, we even might consider the possibility that the big three-stepped base found outside the Ceremonial Complex in a disturbed context could be an altar base.

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