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Reflecting on the Rooftops of the Eastern Uighur Khaganate: A Preliminary Study of Uighur Roof Tiles

by

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Reflecting on the Rooftops of the Eastern Uighur Khaganate: A Preliminary Study of Uighur Roof Tiles

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Introduction

There has been an increased focus on Eastern Uighur (744–840 CE) archaeology in recent years. Surveys (Ahrens et al. 2010, Moriyasu et al. 1999) and excavations (Arzhantseva et al. 2008: 886–898; Arzhantseva et al. 2011, pp. 6–12, Ta La et al. 2008 and Hüttel and Erdenebat 2010) of walled sites have added significant data to our growing knowledge of the Eastern Uighur Khaganate. The results of this work have contributed to an emerging picture of the Uighur Khaganate as a polity that embraced urbanization (or at least the construction of walled architectural complexes), although the nature of this development and the extent to which this was undertaken is yet to be fully understood (Arden-Wong 2012 and Arden-Wong forthcoming a).

Among the most abundant artifacts retrieved from these sites are roof tiles made with the use of Chinese technologies. This evidence has largely been neglected by archaeologists of Türk and Uighur archaeology, and thus only generalized statements have been made. In our view, the neglect in not better recording this evidence has potentially limited possibilities for enhancing knowledge of

¹ The authors would like to express their gratitude to Prof. Guo Qinghua (University of Melbourne), Dr. Imai Koki (Nara National Research Institute for Cultural Properties) and Dr. Svetlana Sarantseva (Far Eastern Branch of the Russian Academy of Sciences) for their reading of and suggestions towards this article. As noted within the body of this paper, the authors are grateful for the release of relevant archaeological data. Thanks specifically go to Prof. Hans-Georg Hüttel (the German Archaeological Institute [DAI]), Dr. Ulambayar Edernebat (Mongolian Academy of Sciences) and Dr. Odbataar Tserendorzh (National Museum of Mongolia).

architectural relationships between sites, chronological-typological studies and models of architectural exchange.

With this in mind, it is the purpose of this article to undertake an exploratory study of these Uighur roof tiles with the ultimate aim of making progress toward a typology of them. This article first contextualizes the evidence by providing a brief summary of Chinese roof tile technology and implementation. Further context is given in the description of the principal Uighur sites where ample roof tile evidence has been collected. A detailed exposition of the Uighur roof tile evidence is then provided, as well as notes on their production. Additional notes are provided on eave end tiles, as they offer the most detailed and thoroughly recorded data. The discussion section is given in two parts: first, a discussion on the Uighur roof tiles evidence presented and, second, a discussion on early Türk and Uighur roof tiles. The discussion will argue for the consistency of decorative Eastern Uighur roof tile designs found across Uighur sites, which therefore justifies the need for a developed roof tile typology. It also argues that roof tile evidence may be synthesized with other data to better comprehend Turkic sites that do not contain dedicatory inscriptions. It is hoped that this paper will demonstrate the benefit of roof tile evidence to Türk and Uighur archaeology and encourage further study in this field.

The scope of this paper is broad, yet the evidence put forward is both selective and limited. The Uighur Khaganate covered large expanses of the steppe, and its political core was situated in the Orkhon Valley, in present-day Arkhangai Aimag, Mongolia. The region of the modern Tuva Republic, in Russia, is said to be home to at least seventeen Uighur walled sites (Kyzlasov 1969: 59). Only three of these contain structures within their enclosures: Bazhyn Alaak, Shagonar III and Por-Bajin (Por-Bazhyn). Shagonar III and Por-Bajin have yielded roof tile evidence; however, only the excavations of Por-Bajin have produced a sufficient roof tile data set.² Uighur walled sites on the central Mongolian Plateau have received limited archaeological attention. The two most prominent are Bay Balıq and the capital city Ordu Baliq (Karabalgasun/Kharbalgas). However, only limited sections of Ordu Baliq have been excavated. Therefore the proportionate number of walled sites that have yielded roof tiles

² For the excavations at Bazhyn Alaak, see Schetenko 1983: 45–47 and G. V. Dluzhnevskaya and D.G. Savinov (2007: 138–9), and for Shagonar III see Kyzlasov 1979: 150–7. Por-Bajin is usually excluded from the 17 fortresses of Tuva — and thus it is the eighteenth fortress.

to those that have not is not reflected in this paper. Furthermore, there are some Eastern Uighur walled sites that have been excavated from which no roof tiles have been recovered. The types of roof tiles studied in this paper include barrel tiles, pan tiles, roof eave end tiles, spirit/beast mask tiles, roof ridge tiles and associated ornamentation.³

The focus of this paper is predominantly on decorative roof-eave-end tiles, primarily because the amount of data on and extracted from them is greater than with other types. This is not to say that other types of roof tiles should be considered as secondary data. On the contrary, it is hoped by the authors that this article may inspire future study of other Uighur roof tile types.

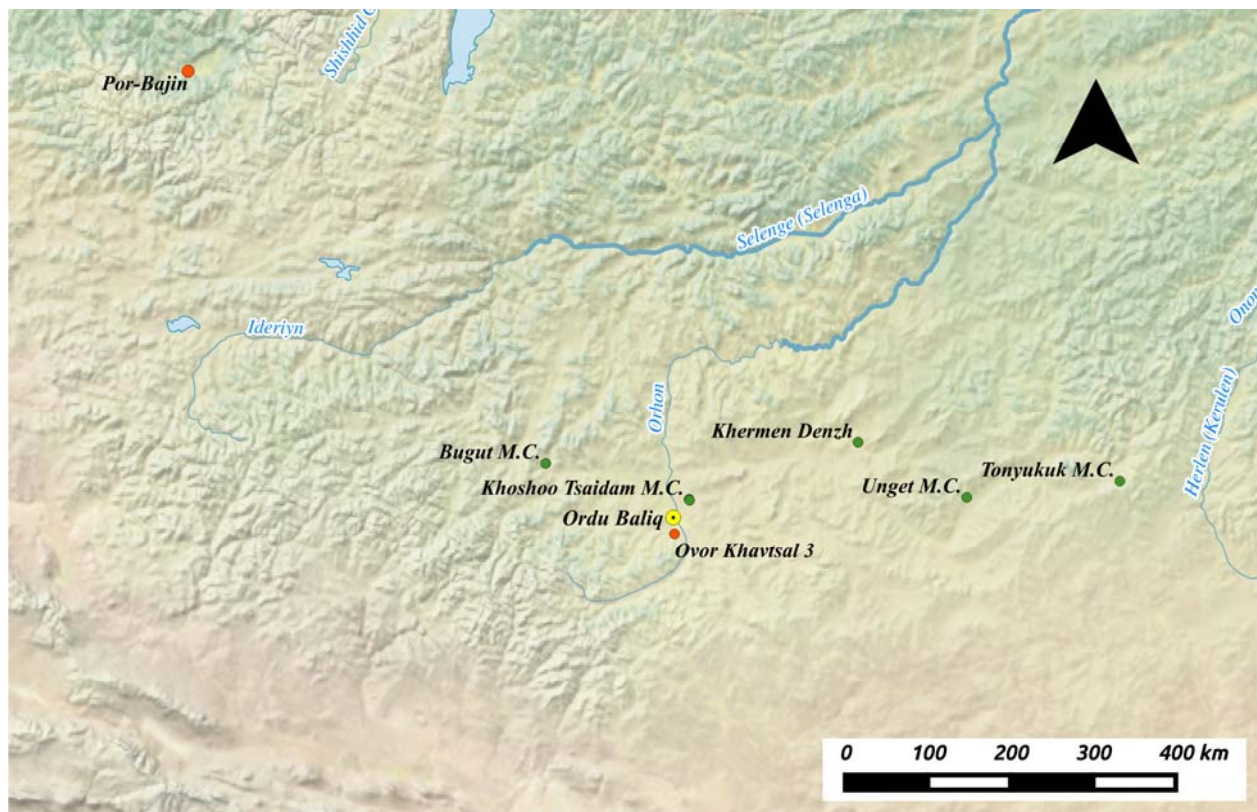


Fig. 1. Map of the sites referred to in this paper.

³ Evidence for Chinese roof tiles on the Mongolian Plateau (north of the Gobi) predates the Türk-Uighur period. The earliest roof tiles discovered on the Mongolian Plateau and in Southern Siberia date from the Xiongnu period and are analogous to those from the Han Dynasty, mainly characterized by *wadang* that display a central round relief and are decorated with herringbone designs, spirals and/or Chinese logograms of the Qin seal script (Kiselev 1959: 160). See Kiselev 1959: 159–64, Kyzlasov 2006: 179–85 and Danilov and Tsydenova 2011: 341–47. For a survey of the Xiongnu sites see Danilov 2004: 34–47.

The authors are privileged to work with data from recent archaeological excavations at Por-Bajin, Ordu Baliq and elite Uighur *dörvölzhin/durvuljin* sites. The data supplied by the Por-Bajin Foundation is extensive and our knowledge of the roof tiles from this site is clearer than that obtained from most other Uighur sites. The German-Mongolian researchers (DAI and MAS) that have been undertaking field work at Ordu Baliq since 2008 have kindly permitted our study of photographs of roof tiles taken from the 2010 and 2011 excavations. We regret however that our team was refused access to illustrate and obtain measurements of these roof tiles — the lack of this data hampers our ability to produce a complete typology and subsequently generalizes our material. We also extend our thanks to the joint Chinese-Mongolian team that has been studying the Uighur *dörvölzhin* sites since 2005. Their permission for us to work with and republish their images of excavated roof tiles is greatly appreciated.

A brief introduction to Chinese roof tiles

Chinese roof tile technology is well known and, while it developed through time, the general principles of its use and implementation remained the same throughout. The earliest evidence of roof tiling in China dates to the twenty-second century BCE (Guo Qinghua 2005a: 108). Chinese roof tiling underwent gradual and mostly subtle developments but maintained general functional characteristics. The following types of tiles were in use during the Tang period: (1) the broad and relatively flat *banwa* 板瓦 (pan/quarter cylindrical tiles), under-tiles that were laid concave face up and were partly overlapping. These tiles were laid from the bottom outer row first and successively laid towards the ridge(s) of the roof. (2) *Tongwa* 筒瓦 over-tiles (barrel/semi-cylindrical tiles) were laid convex face up to cover the joints. *Tongwa* tiles often had a lip that served as a connector between a *tongwa* tile and the one behind it. Some *tongwa* had holes through which nails were inserted to secure their position. (3) The first course of tiles was shaped differently and often decorated, as this was the course of tiles that faced the viewer. These front tiles are known as *wadang* 瓦当 (pendant disc fronting a barrel *tongwa* tile) and sometimes were arranged alternately with the tiles that went under eaves, called (4) *dishui* 滴水 (drip tile pendants that adorned eave *banwa*). (5) Eave-end tiles were essentially *tongwa* with cap/disc decorative faces applied to the narrow front edge of pan tiles. (6) *Dishui* tiles often had a deltoid leaf shape and were usually arranged alternately with the pendant *wadang*. In addition to

providing a decorative face to the roof, the deltoid-shaped *dishui* were also designed to allow rain and snow to run off, protecting the roof structure. However, in our period of study, *dishui* had not yet become widely used and variously decorated eave *banwa* rims were employed for the purpose.

Roof ridges followed various formats and decorative styles in early medieval Asia. The number of ridges on a roof corresponded to what style of roof the building displayed. Overhanging gable (*bu xialiangtou zao* 不厦两頭造), hip (*wudian* 庑殿), gable-on-hip (*xialiangtou zao* 厦两頭造), and pyramidal (*doujian* 斗尖) roofs could each have multiple eaves and carry multiple ridges. Further, all but the pyramidal roof type bore a main ridge at the apex of the building. At the most basic level, we could expect at least two or three ridge types (1) the main/apex ridge (*zhengji* 正脊), (2) vertical ridges (*chuiji* 垂脊 [ridges that meet with the apex ridge]) and (3) hip ridges of a gable-on-hip roof (*qiangji* 戗脊, i.e., ridges that branch off vertical ridges at 45°). Ridges were usually protected by filler tiles (*dangou wa* 當溝瓦). Each *dangou wa* would be placed between two *banwa* at the main ridge, and another specialized type called *xie dangou wa* 斜當溝瓦 tiles were placed for the same purpose at the hip ridge. Interlocking flat tiles were stacked and secured on top of the joint to protect them, but also to create a powerful presence on the roof ridge. Another method of creating the desired raised ridge appearance and function was to place long rectangular ceramic blocks instead of the multi-layered flat ridge. For the elite *diantang* 殿堂 structures of China, ceramic *chiwei* 鸱尾 sea monsters (one of the mythical nine sons of the dragon) were placed at the ends of the main ridge, depicted with wide-open jaws swallowing the ridge in its mouth, and a tail flourished overhead (Guo Qinghua 2002: 24). *Chiwei* were believed to contain the spirit of water and thus protect the building from fire (Guo Qinghua 2005a: 110). "Owl tail" designs (probably representing the tail of a *chiwei*) were also used at the same as *chiwei*. The owl tail roof ridge ornament was popular in the early medieval period in east Asia and was particularly prevalent in Tang architecture. Rectangular beast/spirit/ogre mask tiles (Chin. *shoumian wa* 兽面瓦) were mostly used to cap/adorn hip ridges thus called *chuiji shou* 垂脊兽, although they were sometimes used as ends for the main ridge on lower ranked official and religious buildings for the *diantang* imperial building class.⁴ Ceramic beast heads (Chin. *shoutou* 兽头) were larger and rectangular, and they protruded from the roof structure much more than the flatter and

4 For a brief summary of the development of *shoumian wa*, see Portal 1990: 70.

smaller beast-mask tiles and were therefore more impressive. It should be noted that beast face designs were also used on *wadang*, although variations of the lotiform design were predominant in the Tang era.⁵

The sites

Uighur roof tiles were unearthed predominantly from three sites: Por-Bajin, Ordu Baliq and the dörvölzhin complexes. Here we shall briefly describe these three sites, their architecture and the discovery of Uighur roof tiles.

Por-Bajin

The archaeological site of Por-Bajin ("clay house" in Tuvan) occupies a 3.5 hectare island in Lake Tere-Khol, eight kilometers west of the Kungurtuk settlement in Tere-Khol kozhuun (region), in the southwestern part of the Republic of Tuva, Eastern Siberia.

The earliest mention of Por-Bajin may have been in 1701 by Semyon U. Remezov, the premier cartographer and ethnographer of Siberia, in his *Drawing Book [Atlas] of Siberia* (*Chertezhnaya kniga Sibiri, list 7* [15]). The site was investigated for the first time in 1891 by the ethnographer and archaeologist Dmitrii A. Klement's, during the Orkhon Expedition to Inner Mongolia (Klement's, 1895). He described the structure, classified it as a fortress and made a sketch-plan. Klement's was also the first to note its similarity to the ancient town of Ordu Baliq and to make a complete description of the condition of the site.

5 The *baoxiang* 宝相花 and lotiform floral designs can easily be confused. See Guo Qinghua 2005b.



Fig. 2. Laser scan image of Por-Bajin (produced by the company "Geoscan" in 2007).

Excavations, however, did not take place until 1957. These, carried out by the Tuvan Expedition of the Institute of Ethnography and the Academy of Sciences of the USSR, under the direction of Sevan I. Vainshtein, continued until 1963. Several areas of the site were investigated: a part of the central building, a construction in the northern inner courtyard, and structures in the row of courtyards on the south side. Based on his finds and a number of analogies with other sites, and following Klemenčs and other scholars, Vainshtein dated Por-Bajin to the middle of the eighth century CE (Vainshtein 1964: 104, 111). Its building materials and technology suggest that Por-Bajin was erected within the framework of the eighth-century Chinese building tradition, combining the features of the "ideal town" with those of the "ideal Buddhist monastery."



Fig. 3. Reconstructed top view of Por-Bajin by A. Schubert.



Fig. 4. Reconstructed view of Por-Bajin from the southeast by A. Schubert.

The first research on the tiles from Por-Bajin was carried out by S. I. Vaïnshteïn, whose excavations revealed significant insights into Uighur architecture (Vaïnshteïn 1964: 109–10). Vaïnshteïn published images and briefly described the two types of *wadang* unearthed at Por-Bajin, as

well as acknowledged the use of *banwa* and *tongwa*. In 2007 and 2008, extensive excavations undertaken by the Por-Bajin Foundation confirmed Vainshtein's findings and yielded valuable data for the study of Uighur architecture, while suggesting that it bore a close link to Tang Chinese architecture (Arzhantseva et al. 2009: 9–11, Aržanceva et al. 2012 and Zhang Jianlin 2012: 31). Recovered roof tile artifacts include *banwa*, *tongwa*, *wadang* and *shoumian wa* types.

Por-Bajin consists of a rectangular fortress (215 × 162 m) enclosing a complex of buildings and courtyards, dominated by a central building complex. The fortress walls are elongated along the east-west axis, with the entrance at its eastern end. The inner arrangement consists of two large adjoining yards, a monumental building on the central axis and a chain of adjoining yards along the northern, western and southern walls, forming a "U" shape that frames the core architectural arrangement. The outer courtyard was devoid of all structures, but excavation showed that the connecting gate had been wider in its first phase, possibly during the building of the site, and was later made narrower and fitted with a gate house in the pavilion style, with wooden doors and a tiled roof. Roofs of structures within the inner complexes were tiled (see figs. 2–4).

Two buildings on the main east-west axis constituted Por-Bajin's focal architectural complex. The eastern building was square in plan (23 × 23 m) and raised upon a rammed earth platform accessed by a pair of brick-faced staircases on its eastern (front) side. Excavations of the building revealed an inner arrangement of two halls placed along the central axis flanked by square rooms. This was clearly indicated by the remnants of a 36-column base network and wattle-and-daub walls that were built on a post-and-lintel timber frame. A covered gallery extended from the eastern to the western buildings. The western building was also square in plan (15 × 15 m), and raised on a rammed earth platform. The building contained an eight-column network and was built from the same architectural materials as the eastern structure.

During the excavation of the central building, a large number of wall-painting fragments bearing red paint traces on lime plaster came to light. Some fragments show scratched lines marking the original drawing; based on this, the painting seems to have been an ornamental border that reflected the *renzi gong* 人字拱 that forms a "人" shaped pattern (formerly "Λ" shaped). This was once a timber intercolumnar bracket set that consisted of two slanted struts that met together and supported a bearing block (Guo Qinghua 2002: 67). With the development of more supportive bracket

sets, the *renzi gong* became a decorative architectural aesthetic — to the point that it was used as an ornamental border (fig. 5).

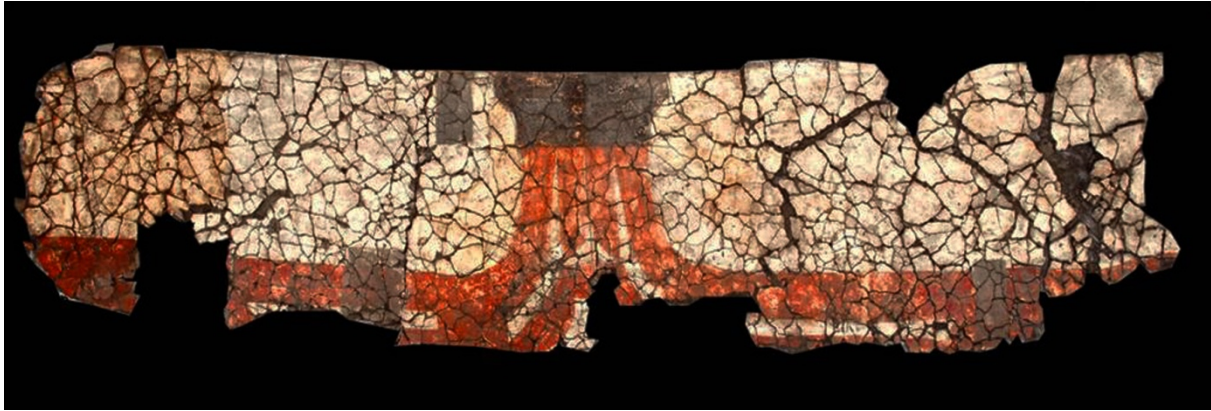


Fig. 5. *Renzi gong* mural recovered from the central building of Por-Bajin. Restorers are N Kovaleva and G. Veresotskaya (Moscow Institute of Restoration). The image was first published in Panin and Arzhantseva 2010: 19.

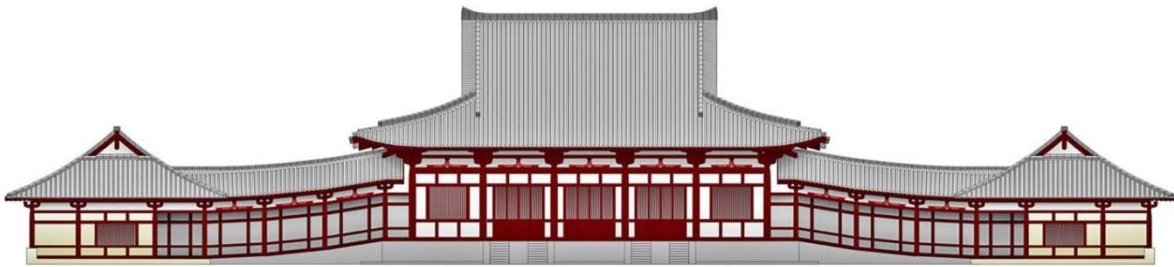


Fig. 6. Reconstructed frontal elevation view of the central complex's eastern building by R. Vafeev.

The structures of the inner courtyard that frame the ceremonial courtyard on its northern and southern sides seem to have belonged to the same architectural ensemble as the central building complex. The north and south façades of the central eastern building were connected by covered ramped galleries, or *feilang* 飛廊 “flying galleries” (also seen in Ordu Baliq; see Arden-Wong 2012: 34).⁶ These monumental buildings had been erected on a low platform directly on virgin soil, built with timber post-and-lintel construction and supported by an inner column network. The buildings consisted of three spacious halls and a portico at the front. The design of this area shows that the

6 For the use of this term in relation to Tang architecture, see Fu Xinian 2002: 101, 102, 105 and 131.

eastern and western buildings with the two flanking galleries constituted a single architectural complex (fig. 6).

The analysis of the excavated Por-Bajin buildings has made it possible to identify some of the site's areas by function and to suggest the reconstruction for some (reconstruction was done by the architects R. Vafeev and [subsequently] A. Schubert).⁷ The central functional planning zone, which comprises the Central Building, is flanked by two structures with ramped *feilang* (covered galleries) at the front facing the inner ceremonial yard.

A gate complex connected the ceremonial courtyard with an external (eastern) courtyard. The gate itself was furnished with a four-columned gate house and to the south of this was another structure that was tiled. The main gate was found to have three gateways in heavy timber construction, much of it burnt. The main eastern gate probably supported a structure above it.

The peripheral courtyards each consisted of an inner yard that enveloped a central building. Clay buttresses with wooden poles were set in the building's corners. The structure was two-chambered, and the lack of evidence of tiling within suggests the use of organic materials (wood and reed) as ceiling materials (fig. 7).



Fig. 7. Reconstruction of outer courtyards. 3-D graphical reconstruction by R. Vafeev
(Panin and Arzhantseva 2010: 15).

⁷ Note that the 3D reconstructions were undertaken prior to the commencement of our roof tile study and therefore do not necessarily reflect the results of our research.

Geophysical prospection of Por-Bajin

Geophysical work (Khmelevskii 2007) included the geomagnetic investigation of the interior of Por-Bajin island on a grid of profiles with distances of 1 m between them, undertaken with gradient meters POS-2 and G-858 (Geometrics).⁸

Magnetic survey results have shown that there were no ancient hearths on the island, suggesting that Por-Bajin was possibly the summer residence of the khagan. As a result of magnetic survey work two significant anomalies were discovered alongside a courtyard near the palace, which were not visible on the surface. During excavation, the anomalies seemed to correspond to a concentration of roof tiles from galleries that had collapsed during a catastrophic fire (fig. 8).

⁸ Geophysical prospecting carried out by scholars and students led by Prof. Dr. I. Modin (Geology Faculty of Moscow State University). See Arzhantseva et al. 2010: 428–33.



Fig. 8. Topographical plan of Por-Bajin (above) and plan indicating magnetic anomalies of the central courtyard complex (below).

As has been observed in other studies of Por-Bajin, the complex's architectural details and layout resemble the Buddhist Paradise often encountered in Tang painting (Arzhantseva et al. 2009,

Arzhantseva et al. 2008: 886–898 and Arden-Wong forthcoming b). The kind of function of the Uighur complex — whether palace or temple — will be the subject of future specialized research.⁹

Ordu Balıq

The Uighur settlement of Ordu Balıq ("royal city" in old Turkic) is located in the Orkhon Valley, Arkhangai Aimag, Mongolia, and is approximately 35 kilometers north-northwest of the Mongol period capital Karakorum. Although the site has been archaeologically studied since the late twentieth century, few early excavations of the site provided detailed reports on the discovery of roof tiles. Archaeologist S. V. Kiselev excavated here and at Karakorum, and no doubt the numerous roof tiles unearthed from these sites prompted him to begin his preliminary typological study of the region's roof tiles (Kiselev 1959). A primary goal of the recent (aforementioned) German-Mongolian excavations of Ordu Balıq was to clarify the previous excavations undertaken at the site. Among their achievements is the successful location of some of the trenches excavated by Maskov and Kiselev (see Dähne and Erdenebat 2012). Thus we may synthesize their results with ours to confirm Kiselev's findings on Ordu Balıq Uighur roof tiles, particularly *wadang*.

The settlement was divided by a slanted 26° (approximately) north-south avenue, which dictated the settlement's axis (Arden-Wong 2012: 30). As was the ancient Turkic custom, the entrances of major complexes were located on the eastern side of the complex (see fig. 9). Researchers have mainly focused on the so-called palace or temple complex (fortress walls 360 × 404 m and presently 8 m high) in the northeast of the settlement (site code HB2) and the so-called Manichaean temple complex (HB1) within the 32 km² large settlement. As early as 1885, Klementz noted that HB2 looked remarkably similar in layout to Por-Bajin. In the 2010 campaign, a building within the 1 × 1 km walled inner city complex was excavated (HB3). Due to the noticeable surface concentration of ceramic sherds within this region, it is believed that the inner city had a residential and/or craft industrial function (Arden-Wong 2012: 37, Danilov 2004: 58 and Kiselev 1957: 94).

9 S. G. Klyashtorny (2012) has suggested that Por-Bajin was the western summer headquarters of the early Eastern Uighur khagans (750s and 760s), which was recorded in historical sources as Qasar-Qurug.

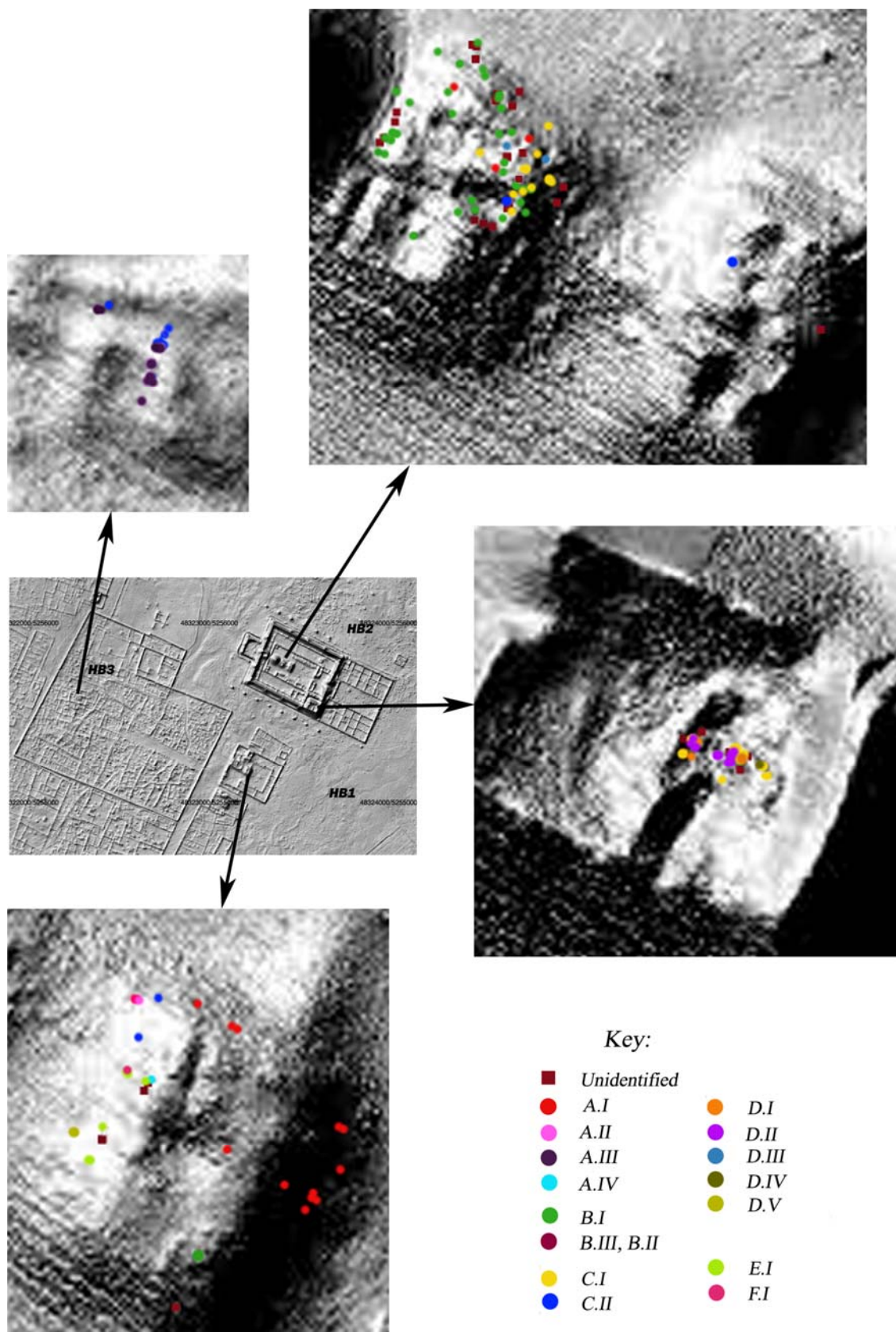


Fig. 9. Ordu Baliq *wadang* distribution. See fig. 16 below for Ordu Baliq *wadang* types.

All three areas excavated by the German-Mongolian project — the so-called Manichaean Temple (HB₁), palace or temple complex (HB₂) and a building within the inner city (HB₃) — have yielded a significant quantity of roof tiles. Although our team is not privy to the measurements and drawings of these tiles, we can confirm the discovery of *banwa*, *tongwa*, *wadang*, *xuanpingwa* (軒平瓦), and some ornamental pieces.

Despite the almost uniform implementation of Chinese roof tile technology, the actual structure of the buildings varied. The HB₃ building had a network of columns resting on granite plinths, and the eastern structure of HB₁ contained a high rammed earth platform with some facings of mud brick (possibly indicative of repair). The eastern structure of HB₁ was seemingly without inner rooms (Dähne 2010: 69–70).

The architectural layout of HB₂ is very similar to that of Por-Bajin. Its eastern orientation, tall fortifications, axial central courtyard, hall scheme arrangement, and peripheral courtyards scheme all bear a striking resemblance to Por-Bajin. However, in addition to its larger size, the HB₂ complex contained other significant differences: large front and small rear annexes, a citadel in the southeast of the complex, a monumental 8 m tall “stupa” at the rear of the central axis and a flanking set of smaller rammed earth “stupas” on the northern and southern outer walls. In addition, preliminary results from the western building of Ordu Baliq show differing unique interior features: slab box constructed central room, only one row of plinths on its eastern side and possibly a surrounding corridor/ambulatory (see Arden-Wong 2012 forthcoming a).¹⁰ Although the western building has received the lion’s share of attention, none of these structures have been excavated in full, and a clear picture of their complete architectural format is yet to be produced (Dähne and Erdenebat 2012: 257–260). Importantly, stratigraphical information is also yet to be published; it may provide evidence for construction, destruction and renovation phases as well as possible multiple habitation layers.

Uighur Dörvölzhin

Uighur funerary archaeology has revealed various tomb construction methods (Evtukhova 1957,

¹⁰ These results were presented at the workshop “East and West: Past and Future,” which took place 16–18 May 2012 at the University of Sydney, Australia (Arden-Wong forthcoming a).

Kyzlasov 1969: 63–79 and Crubézy et al. 1996). However, the most relevant to our study are the elite walled *dörvölzhin* complexes in the Bayan Gol region of the Orkhon Valley, Khotont county, Mongolia. Scientists believe that these structures are Uighur because they are analogous to the one associated with the Moyanchuo Khagan (second khagan of the Eastern Uighur Khaganate r. 747–759 CE) inscription in the Selenge region. Furthermore, the unearthed funerary goods seem consistent with funerary objects found at other Uighur sites (Ochir et al. 2010: 25).¹¹

Recent Mongolian-Chinese research into these structures, which are known as *dörvölzhin* (Mongolian lit. “square sites”), has revealed that they are very different from the preceding Turkic period memorial sites in ritual, appearance and function. *Dörvölzhin* sites also evidence considerable variation among them. By the publication of the team’s 2010 report, six *dörvölzhin* had been excavated out of the over forty recorded in their survey. Two *dörvölzhin* contained no burials, two had one burial, and one had six burials.

The architectural plan of *dörvölzhin* sites usually consists of a rectangular-shaped earthen wall enclosure (0.5–1 m high with an opening at the east end) and a water channel outside the enclosing wall. An earthen mound is usually located centrally within the enclosure.

The full excavation report of Óvör Khavřsal site no. 3 (henceforth UH₃) has yielded detailed architectural data, particularly in relation to the discovery of roof tiles on the site. Thus evidence from UH₃ will be the cornerstone of this paper’s understanding of roof tiles used in *dörvölzhin*, while incorporating data published from overview publications of the other Uighur *dörvölzhin*.¹² In particular, published images and brief notes on the roof tiles from the nearby Khundyn Khooloin *dörvölzhin* sites will also be referred to.

¹¹ Incidentally, the square site associated with the Moyanchuo stele is the only confirmed square site outside the Orkhon Valley. Ochir et al. 2010: 16.

¹² To the best of our knowledge Óvör Khavřsal no. 3 is currently the only excavated *dörvölzhin* to have been published in full, whilst the other excavations of *dörvölzhin* have been accorded brief summaries in overview articles by the Chinese-Mongolian team.

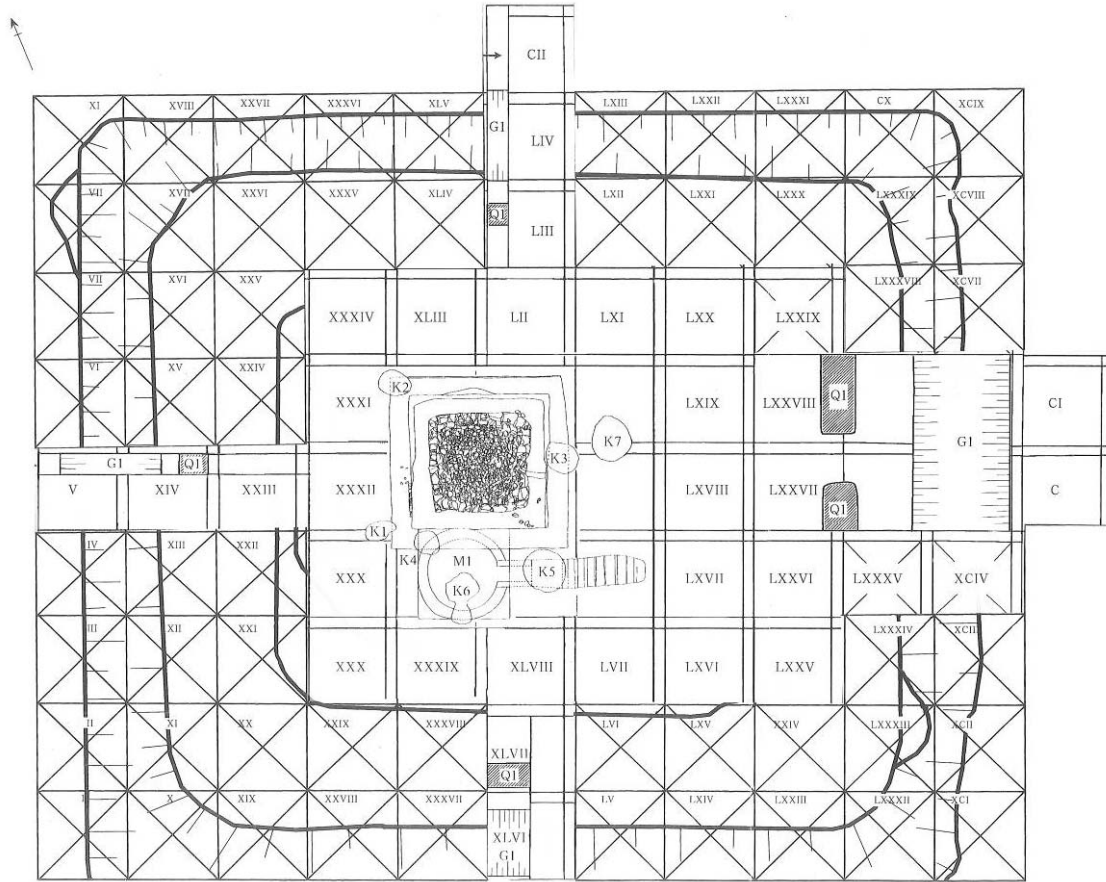


Fig. 10. Site plan of Övör Khavṣal no. 3. This image merges the pre-excavation plan (unexcavated grid squares marked “X”) and the architectural plan of excavated squares (adapted from Ta La et al. 2008: 31–35, figs. 15 & 17).

UH₃ does not have a deep trench outside its walls, and its 0.4 m ruined enclosure walls (31 m E-W × 34 m N-S) are relatively short (see fig. 10). The gate of UH₃ is 3 m wide, and the approximately square rammed earth mound in the center of the complex is 1.5 m high and 12 m wide. Excavations of the central mound revealed that it was faced with fired brick and numerous fragments of fired brick, and gray and buff colored roof tiles, including *wadang*, were unearthed. Fragments of beast mask tiles were also discovered (Ochir et al. 2010: 21). One subterranean round, brick, chambered tomb (diam. 4.3 m, height 2.3 m) was located on the southern side of the mound. It had a staircase that could be used to enter the chamber from its eastern side.

The roof tiles

Let us now examine the roof tiles unearthed from these sites. In this section we will study *tongwa*, *banwa*, *wadang* and *shoumian wa* and their production.

Tongwa and banwa

Tongwa and *banwa* tiles comprise the greatest quantity of roof tiles unearthed from roof-tiled sites of Chinese technology, simply due to their role as the primary roofing material. As explained earlier in this article, the network of *tongwa* and *banwa* provide the fundamental sealing and sheltering to protect the structure. For this reason, *banwa* and *tongwa* tiles have been unearthed from all roof-tiled Uighur sites.

Uighur pan tiles/*banwa* from dörvölzhin UH₃ are of a light gray color and molded to conform to the typical tapering quarter-tile shape, one end being wide while the other is narrow, with an arced body (Ta La et al. 2008: 47). The upper, concave face shows clear marks of textile patterns that indicate that a piece of fabric was used to lift up the partially finished product. Based on the two *banwa* presented in the excavation report, we can approximately reconstruct the length as 35 cm, narrow end 18 cm, wide end 22 cm, with 2 cm-thick walls.

Uighur eave pan tiles were relatively simple in design, and no attachments such as the aforementioned decorated eave pan tiles have been found. One decorative pan type tile has been discovered.

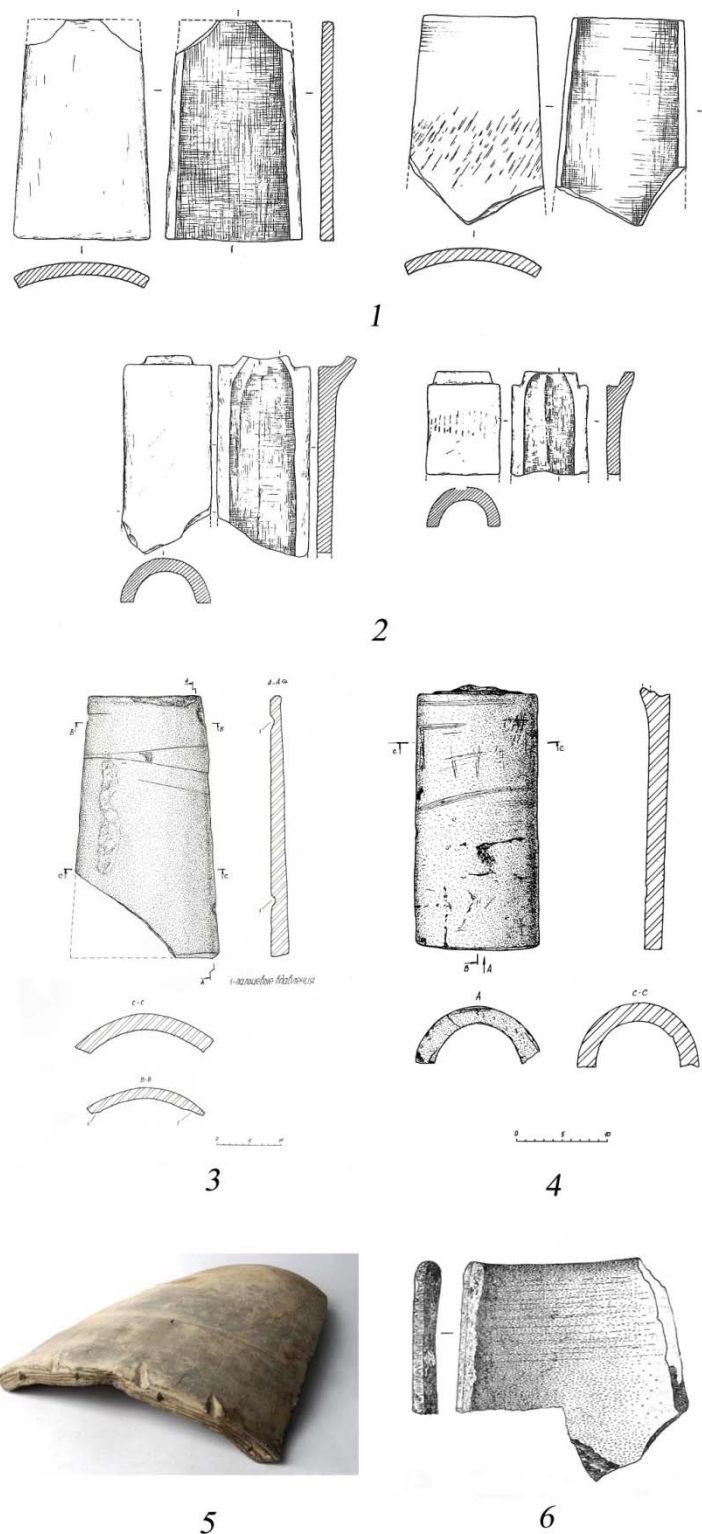


Fig. 11. Uighur barrel and pan tiles: 1. UH3 pan tiles, 2. UH3 barrel tiles, 3. Por-Bajin pan tile, 4. Por-Bajin barrel tile, 5. Por-Bajin eave pan tile and 6. Shagonar III pan tile fragment (after Ta La et al. 2008: 48, figs. 25.5–8 and Kyzlasov 1979: 151, fig. 106.1).

Uighur eave pan tile Type I: Two fragmentary sets from Ordu Baliq reflect the limited use of these tiles. Both sets were unearthed from the central section of the eastern (front) face of eastern building complex HB1. Four horizontal grooves along the face of the pan tile remained from the impression of a stamp. Generously interspersed crescent-shaped notches of approximately 1 cm diameter were made into the outward face of the pan tiles after the mold impression had been made. Alternate notches were made: one in the center and another on the upper and lower edges of the face, creating an alternate notch pattern. A complete example from Por-Bajin (fig. 11.5 [pictured upside down]) demonstrates exactly the same design: four central notches interspersed with upper and lower grooves. This was the desired decorative face design for a Uighur eave pan tile.

Barrel tiles/*tongwa* from UH3 are gray and molded and have a connecting lip on the inner side (Ta La et al. 2008: 47). The inner face of the *banwa* has impressions of textiles. As the tiles are quite damaged, no complete length was presented (longest recorded was 27.5 cm). The width is 10.7–12.8 cm, and the tiles were 2 cm thick. One barrel tile was noted as showing several cord patterns on its convex (outer) side.

The authors noted an almost complete barrel tile on the surface of HB2 at Ordu Baliq, which was light gray and exhibited a textile pattern on its concave side. It was 29.5 cm long, 12.8 cm across at the narrow end and 13.5 cm across at the wide end. When laid flat, the tile was approximately 7.2 cm in height at the end that had the lip. Its walls were 1.6 cm thick.

Fragments of barrel and pan tiles were discovered at Shagonar III by Kyzlasov (Kyzlasov 1979: 151, fig. 106.1). No measurements were provided, but Kyzlasov noted that the tiles did not have textile markings; he published an illustration of a pan tile fragment (fig. 11.6).

Eave end tiles/wadang

Eave end tiles were produced in two forms: (1) the eave ends of barrel tiles and (2) pan tiles. As discussed above, surprisingly few of the pan type have been found at Uighur sites. Conversely, barrel eave end tiles/*wadang* have been found in significant quantity on Uighur sites and are one of the most distinguishable features of Uighur roof-tiled sites. Uighur *wadang* all appear to be variants of the lotus design that was widely implemented in East Asian architecture in the early medieval period. Based on the reports published thus far, we are aware that excavations of Por-Bajin and UH3 have unearthed

two types of *wadang* each. Seventeen different *wadang* designs have been unearthed from Ordu Baliq thus far.

Uighur *wadang* mostly follow the typical Tang period lotiform style employing three decorative zones/sections: a core, middle and periphery. These zones are sometimes divided by low-relief concentric circles. The core usually contains a collection of rounded hemispherical protrusions that represent the stigma of a flower. Some examples display a rounded five-pointed star shape or a single dominant rounded knob. The middle band is the main decorative region of the *wadang* and thus serves as the reference point for categorizing Uighur *wadang* motifs: single petal, triangle wedge, seed, tripetalous, bipetalous and horizontal board. All Uighur *wadang* discovered thus far contain a single row of pearl roundels, which was a highly popular framing motif for medallion designs in Tang China, with strong Sogdian/Iranian connotations (Comparetti 2003, Zhao Feng 1997 and Arden-Wong forthcoming a).

Por-Bajin wadang

Two types of eave end tile have been unearthed from the ruins of Por-Bajin; each has a diameter of approximately 12.5–13.5 cm and is arranged with three embossed concentric circles.

Por-Bajin Type I: Seed motif. The central circle of the design comprises six (seven?) small rounded projections (stigma) surrounding a larger focal one. The middle band comprises eight larger convex bulbs interspersed with inward-pointing triangles. The outer band consists of twenty-eight small pearl roundels. This design has a relatively wide rim. In profile, the mold design does not allow for any part of the decoration to protrude beyond the level of the outer rim (fig. 12.1).

Por Bajin Type II: Wedge dominant. The central circle contains four stigma projections surrounding a central stigma of similar size. The middle band allows generous space for four single elongated petals to be interspersed by bulbous T-shaped wedge projections radiating from the central circle. The outer band contains twenty-nine pearls. An interesting detail is that there is a fourth embossed circle beyond the ring of pearl roundels, creating a defined outer border for the entire medallion and a narrow undecorated band on the outer region of the impression. The rim is wide and the impression is shallow, allowing for the bulbous parts of the middle band to protrude beyond the level of the outer rim (fig. 12.2).

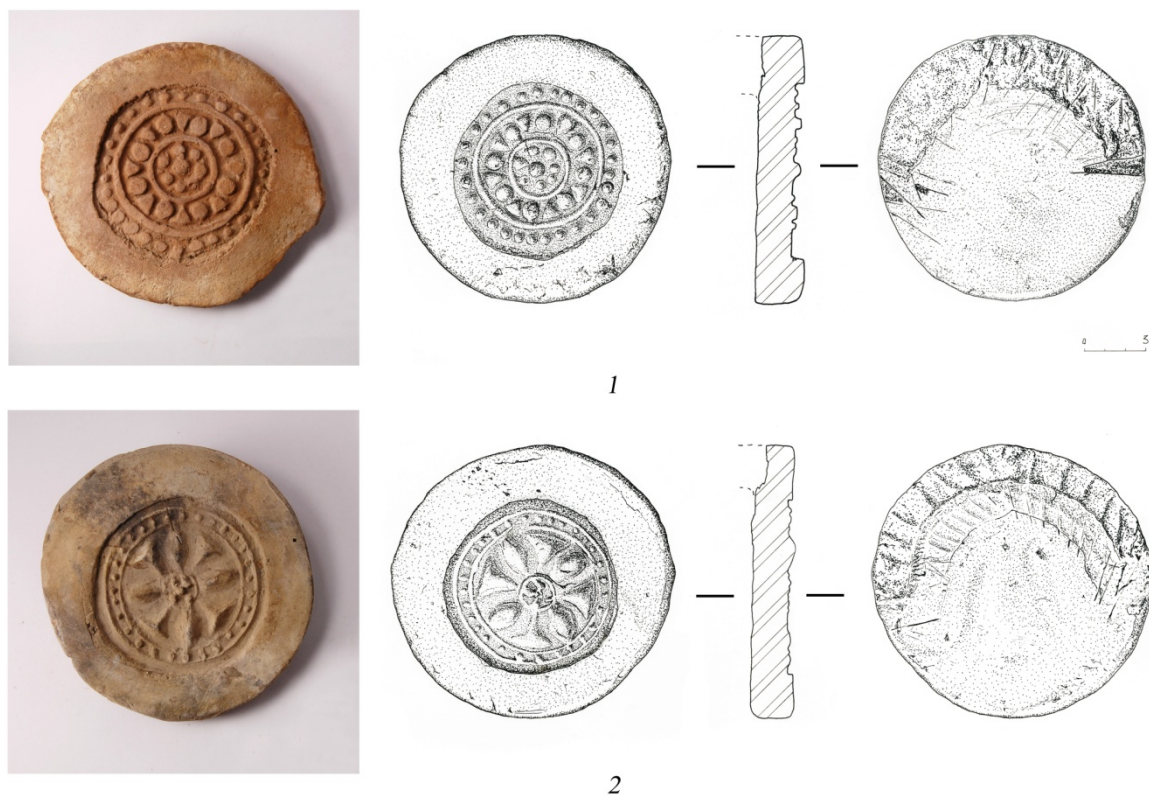


Fig. 12. Por-Bajin *wadang*. 1. Por-Bajin *wadang* Type I: (left) photograph of PI7A279, (right) illustrations of PI7A278. 2. Por-Bajin *wadang* Type II (left) photograph of PI7A266, (right) illustrations of PI7A124.

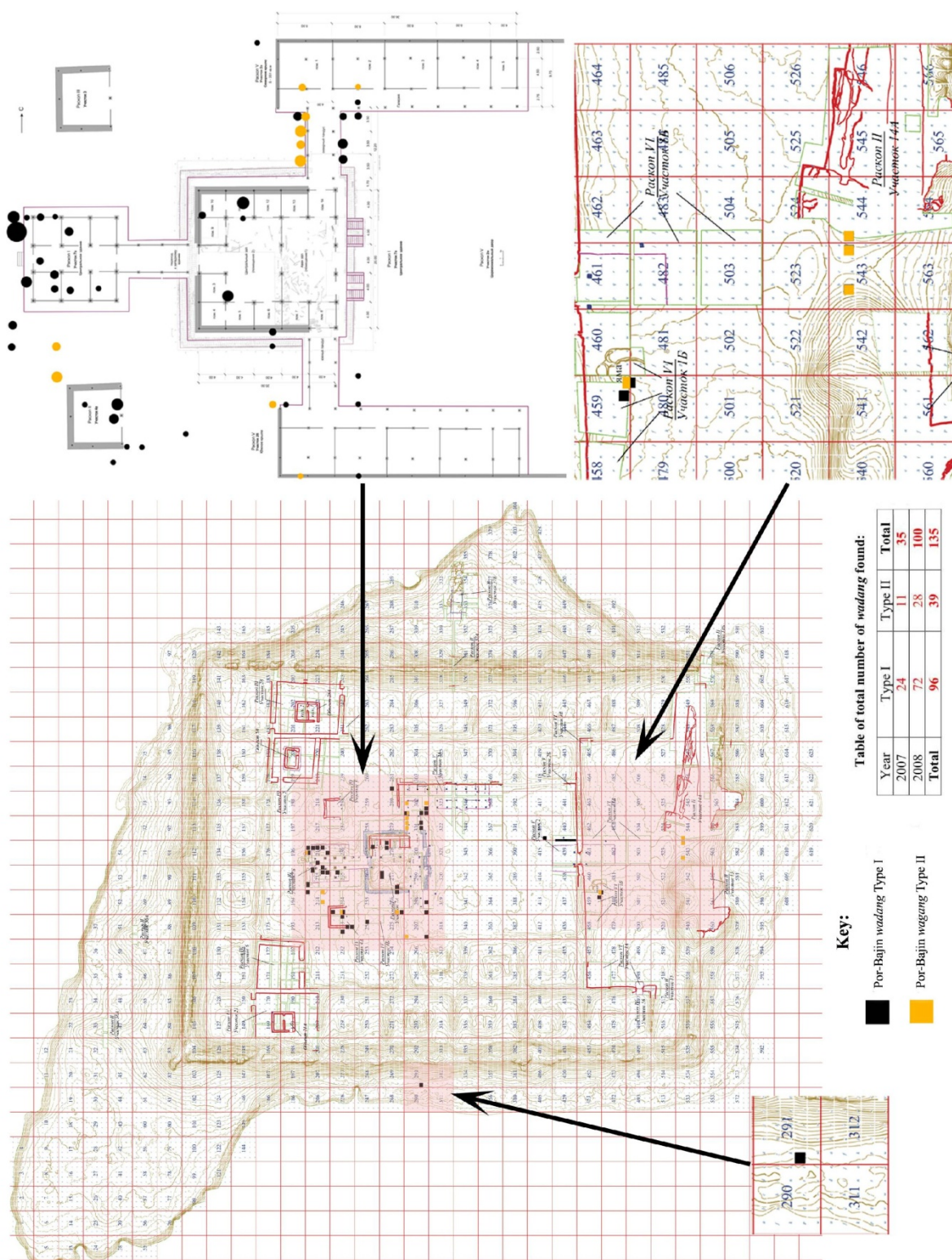


Fig. 13. Plan of Por-Bajin with wadang distribution.

Óvör Khavřsal 3 wadang

The two types of *wadang* from UH₃ have been categorized as lotus bud and lotus seed designs (Ta La et al. 2008: 47). *Wadang* from this site measure approximately 13–14 cm in diameter and are 1.5 cm thick.

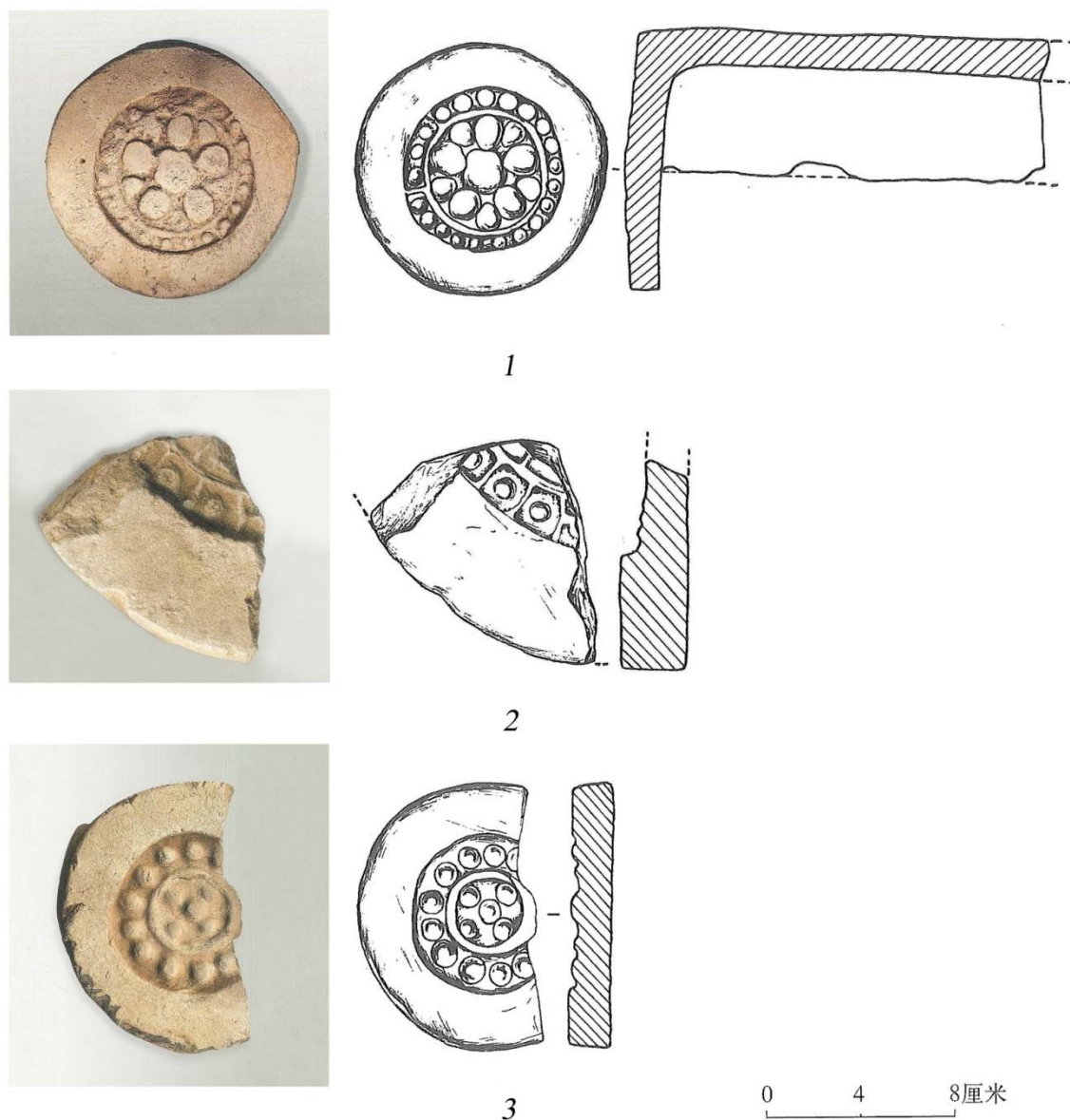


Fig. 14. UH₃ *wadang*. 1. UH₃ *wadang* Type I (115), UH₃ *wadang* Type II.1 (68), UH₃ *wadang* Type II.2 (220) (after: Ta La et al. 2008: 49, figs. 26.1–2 & 4 & pls. 22.2 & 23.1–2.).

UH3 Type I: Single petal type. This type of *wadang* was more commonly unearthed from the site; all *wadang* of this type were poorly manufactured. One embossed circle segregates the outer pearl roundels from the inner decoration, thus dividing the impressed design into two distinct areas. The central inner decoration of stigma is vaguely outlined as a rounded star-shaped protrusion. Four petals, interspersed by rounded inward-pointing triangles, radiate from the stamen. Twenty (twenty-one?) small pearl roundels are located on the outer periphery. Small partitions separate the pearl roundels at irregular intervals, banding the beads into irregular groups, and the partitions appear different among *wadang* of this type (indicating the use of multiple molds). On better preserved examples it is visible that the flattened stigma design protrudes from the center of the *wadang*.

UH3 Type II: This so-called lotus seed design was divided into two categories by Ta La et al. UH3 Type II.1 is evidenced by a sole fragmentary *wadang* that bears only a portion of a rim, a few outer pearl roundels and a fragment of the decorative zone. The two regions are divided by a protruding circle, and it appears that every outer roundel is divided by a partition. Although no complete sample of UH3 Type II.2 has been reported, it is clear that one inner circle relief divided the core receptacle design (consisting of one central stigma and four surrounding beads) from the outer ring of fourteen pearl roundels, thus only having two zones: core and periphery. The impression appears worn, but it is clearly deeper than UH3 Type I.

Ordu Baliq wadang

The data we analyze here comes from five structures at the Ordu Baliq settlement. It is probably not surprising therefore that the widest variety of *wadang* designs have been found here. Uighur *wadang*, such as the Por-Bajin and UH3 types, are 12.5–14 cm in diameter, although Kiselev has reported that the *wadang* he excavated were all 12.5 cm in diameter (Kiselev 1959: 166). Ordu Baliq *wadang* generally conform to abstract lotiform designs described above, some in a more orthodox manner and others more abstract than those presented above. Ordu Baliq *wadang* are also organized into three sections and, as with the UH3 types, there is a clear differentiation between the *wadang* designs that are partitioned by one, two or three concentric circle reliefs. Further, the lack (or indistinguishable abstraction) of petal or sepal on the *wadang* in preference for protruding roundels in the middle section created the so-called lotus seed design, or it may be that a completely new floral design was undertaken. Our *wadang* classification for Ordu Baliq (and subsequent Turkic period types that have

not been classified) follows six decorative themes of the middle zones: A = single petal, B = tripetal, C = seed, D = triangle/wedge-dominated, E = bi-petalous and F = horizontal line/board. All finds noted below from HB1 were recovered from the eastern building of that complex. Data for roof tiles excavated from the northern building in the 2009 campaign have not been provided.



Fig. 15. Kiselev's excavated *wadang* from Ordu Baliq (after Kiselev 1959: 167, fig. 6).

Ordu Baliq Type A.I.: fourteen samples, twelve from the eastern building of HB1 and three from the western building of HB2. One surface find from HB1. One complete sample has been recovered (HB1 1061). Three samples were recovered from the western building of HB2 and twelve from the eastern building of HB1 (one surface find). Two concentric circles partition the *wadang* design into three parts. The core consists of six protruding hemispheres surrounding a central bead. Outside of the core area, an alternating radial pattern of nine short ovular petals is interspersed with inward pointing triangles. Some of the triangles were poorly formed and resemble tear drops. The outer band contains a ring of 34(?) pearl roundels.



HB1_1061
A.I



HB1_3184
A.II



HB3_2133b
A.III



HB1_3017
A.IV

Fig. 16-1. Ordu Baliq *wadang* Type A.

Ordu Baliq Type A.II: One fragment from the eastern building of HB1. The decorative format is the same as Type A.I, although both the impression and the *wadang* shape are clearly ovular. This fragment is 14.2 cm wide and 11.4 cm tall. The decorative elements, although elongated, hold to the same pattern as type A.I, which includes two concentric circles, a six-stigma core, nine alternating single petals and triangles, and thirty-four outer pearl roundels.

Ordu Baliq Type A.III: eleven fragments: ten from HB3 and one surface find from the citadel of HB2. There are three nearly complete samples. One embossed circle separates the outer ring of pearl roundels from the rest of the inner design. A poorly formed bulbous set of stigma, probably consisting of a central bead with five densely placed beads around it, creates a rounded, bulbous star shape. Radiating from this core are five rounded petals. Rounded triangles are snugly wedged into the spaces between the petals and the outer circle. The outer band consists of twenty pearl roundels. The outer rim is afforded generous space. Kiselev and Iu.S. Khudīakov published images of this type (Kiselev 1959: 167, fig. 6, and Khudīakov 1990: 87, fig. 3.3 [although Khudīakov's illustration contains only eighteen roundels]).

Ordu Baliq Type A.IV: One complete sample from HB1. This is a design parallel to UH3 Type I. It is divided by one circle relief separating the periphery from the rest of the medallion, and it has a poorly formed five-pointed star with a rounded shape at its core. Four large petals surround the core, and these petals are interspersed with rounded triangles that are located toward the outer periphery of this area. The periphery consists of twenty pearl roundels. Vertical partitions divide the peripheral zone roundels into six groups of three and one pair.

Ordu Baliq Type B.I.: thirty-three samples: thirty-two from HB2 and one surface find from the same complex. Two embossed concentric circles partition the *wadang* design into three areas. The core consists of six small round protrusions surrounding one central protrusion of similar size. Outside the core region, four wide inward-pointing bulbous triangles with rounded bases are interspersed with elongated ovular protrusions. The outer periphery consists of twenty-six pearl roundels.

Ordu Baliq Type B.II: One fragment from HB1. Only the core and decorative zone remain. It is possible to determine that two borders, or a deformed circle or quadrangle and an outer circle(?) divide the ornament space. The core of this tile depicts four roundels surrounding a central bead. The

inner band (crudely circular or rectangular in shape) has four beads at its corners, within the middle region of decoration. Four outward-pointing large triangles are separated by smaller peripheral inward-pointing triangles that are aligned with the corner beads.

Ordu Baliq Type B.III: One fragment from HB1. Most of the decoration of this *wadang* type (assuming it pertained to a repetitive design) can be reconstructed. Two circular reliefs partitioned the three decorative zones. The core contained five(?) flat and poorly molded circular stigma. The main decorative zone displayed a repeated single petal and wide triangular wedge ornament, four of each. The three points of the triangle wedges touched both relief circles. The outer band was decorated with evenly spaced pearl roundels. This *wadang*, although poorly molded, bears a very similar design to Por-Bajin Type II. The significant difference between the types is that Por-Bajin Type II has a third relief circle outside the peripheral band of pearl roundels. In addition the wedges and petal design on Por-Bajin Type II appear to be more angular than Ordu Baliq Type B.III. Thus they are closely related, but a different type.



HB2_4522
B.I



HB1_3185
B.II



HB1_3186
B.III

Fig. 16-2. Ordu Baliq *wadang* Type B.



HB2_1254
C.I

HB3_2161
C.II



surface find
C.III

Fig. 16-3. Ordu Baliq *wadang* Type C.

Ordu Baliq Type C.I: twenty-three samples, thirteen from the western building of HB2, eight recovered from the HB2 citadel, and two surface finds from the citadel. Two embossed circles divide the impressed ornament into three regions. The core comprises seven similarly sized round protrusions arranged with six protrusions surrounding a central one. The middle band displays crescent-shaped protrusions that serve as parentheses for a rounded trefoil projection containing a slight tip pointing toward the core of the *wadang* (thus the protrusion has an almost quatrefoil shape). There are four sets of parentheses and trefoils, and each set is separated by a small roundel located toward the outer region of the band. The peripheral band was quite damaged on the fragments we were privy to, but we estimate that it probably contained twenty-four pearl roundels. Kiselev also

published an image of this type (1959: 167, fig. 6). Two illustrations of *wadang* of this type from dörvölzhin Khundyn Khooloin 3 have also been published (Ta La et al. 2008: 339, fig. 12).

Ordu Baliq Type C.II: eleven samples, including six complete specimens, all poorly formed. Two samples from HB1, one fragment each from the eastern and western buildings from HB2 and eight samples from HB3. Two noticeably thick protruding circle reliefs divide the area into three regions. The core contains six stigma surrounding a central one, of which none are touching, and there is ample space for definition. The middle region displays an elegant tripetalous/trefoil design. The bases of the eight trefoils are interconnected by a stem that skirts around the periphery of the inner circle, creating a “人” design. A ring of thirty pearl roundels makes up the outer periphery design.

Ordu Baliq Type C.III: A surface find recorded by the authors (2007) from the HB2 complex. Although this tile has been broken, enough of the design remains, with an impression that is quite clear and distinct, for us to discern the design of the main ornament. Two circles divide the round ornament into three parts. The core consists of four roundels surrounding a central bead of approximately the same size. Four bulbous trilobed petals form a crucifix pattern, leaving generous undecorated space between them. The outer band contains well-spaced pearl roundels that do not touch each other or their boundaries.

Ordu Baliq Type D.I: Four fragments of this “seed” type were reported found in the HB2 citadel during the recent German-Mongolian excavations, three from excavated contexts and one surface find. No circular bands are present on the *wadang* and the entire design consists of round protrusions. The central protrusion, a large round knob, is surrounded by medium-sized roundels. The periphery of the design is made up of smaller pearl roundels.

Ordu Baliq Type D.II: Seven fragments were recovered from the HB2 citadel. This is a design parallel to Por-Bajin Type I. The design has two concentric circles. The core contains seven round stigma projections with a slightly larger central flattened bead. The middle band has a pattern of alternating round and triangular projections. The peripheral band contains a string of pearl roundels. Two examples of this type were published in Kiselev’s 1959 article (1959: 167, fig. 6). Khudîakov published an illustration of this type but with only six pairs of triangles and beads in the middle band and only twenty-one outer roundels (Khudîakov 1990: 87, fig. 3.1).



HB2_1374 surface
D.I



HB2_Z_4229
D.II



HB2_1204
D.III



HB2_Z_4175
D.IV



HB1_3228a
D.V

Fig. 16-4. Ordu Baliq *wadang* Type D.

Ordu Baliq Type D.III: Two fragments were recovered from the western building of HB2. Two embossed circles divide the *wadang* design into three regions. The core is made up of seven small

stigma tightly arranged around a larger button-like flattened top. The middle band appears to have an alternating pattern of five small beads interspersed with five horizontally elongated beads. The outer band contains a ring of pearl roundels. Previously published images of this type confirm these details and also suggest that this type contained 17(?) outer roundels (Kiselev 1959: 167, fig. 6, and Khudīakov 1990: 87, fig. 3.5). A published image from the excavations of dōrvōlzhin Khundyn Khoolōin 3 also shows a *wadang* of this type (Ochir et al. 2010: 339, fig. 12).

Ordu Baliq Type D.IV: One well-formed, incomplete fragment has been excavated from the HB2 citadel. Although this sole sample contains only a small portion of the *wadang* design, it clearly resembles UH3 Type II.1. Only a small portion of the rim remains. It reveals that the outer ring of roundels was separated from the rest of the design by a protruding circle. The inner region may have also contained partitions, evidenced by the remains of a single partition. The outer roundels were individually partitioned.

Ordu Baliq Type D.V: One fragment has been excavated from HB1. It is decorated in a style analogous to UH3 Type II.2, the most notable difference being the Ordu Baliq sample's larger outer roundels, which are touching and which fully occupy the peripheral band.

Ordu Baliq Type E.I: Six samples, all excavated from HB1. All samples were poorly manufactured, leaving an unclear design. Two protruding bands divide the ornament into three sections, but the barrier around the core was only faintly traceable on the samples we examined. The core consists of four protrusions surrounding a central bead. Outside the faint inner circle is a rather unusual design. Four sharply protruding, elongated slabs or boards have been arranged in a box-like shape, creating a square barrier around the inner region. The slabs are not connected, and they are separated by medium-sized roundels that are located in the corners of this arrangement. Small roundels are aligned with the middle of the boards and placed between the boards and the outer relief circle. One roundel is placed behind each board. The outer periphery contains 18(?) pearl roundels.

Ordu Baliq Type F.I: One poorly formed, incomplete fragment was recovered from HB1. Two circles separate the *wadang* design, although the inner circle is faint. The core is not entirely discernible, although it seems several protruding roundels surround a central ornament or empty space. The middle band is decorated by protruding U or V shapes interspersed by poorly formed roundels and/or rhomboids. The peripheral band displays a ring of pearl roundels.



Fig. 16-5. Ordu Baliq *wadang* Types E and F.

Notes on Uighur *wadang*

Considering that *wadang* were placed on the roof eaves, it is unsurprising that they have been discovered generally around the periphery of the buildings they roofed (see fig. 9).¹³ Of the Ordu Baliq sites, only HB3 has been excavated completely, thus there may be more *wadang* types and quantitative data still to be recovered from the eastern building of HB1, the eastern and western buildings of HB2 and the HB2 citadel. Furthermore, the trenches excavated might not reflect the number of *wadang* from these sites. For instance only two *wadang* samples were recovered from the eastern building of HB2, although the authors are aware that a fair portion of the middle-western sections of this structure have been excavated. We should also note that these structures may have been reused and thus roof tiles from earlier periods may have been cleared away.

That stated, it is clear that all Uighur roof-tiled structures (studied thus far) employed more than one *wadang* type. This is also the case at the Por-Bajin and Uighur dörvölzhin sites and was not an uncommon practice in East Asian *wadang* arrangement. There are many possible reasons for the multiplicity of *wadang* types employed by each structure, such as the use of multi-storied roofs,

¹³ The noticeable lack of *wadang* from the Por-Bajin central building, particularly the eastern/entrance side (as seen in fig. 13) might be attributed to Vainshtein's excavations of the site.

depending on the commissioner's personal taste for such variations. Another pertinent reason is the re-building and repair and renovation of a structure. This has already been reported in the eastern building of HB₁ (Arden-Wong forthcoming a), and there are historical reasons for the destruction and reuse of buildings in the Uighur period (Arden-Wong 2014). Stratigraphical interpretation from the Ordu Baliq excavations along with forthcoming dendrochronological and C₁₄ results may shed light on this hypothesis.

The overall impression of Uighur *wadang* promotes a generally consistent format, and thus we can form an overarching (preliminary) decorative typology of Uighur roof tile types. Basing the typology on the Ordu Baliq *wadang* typological method, we can add the Por-Bajin and dörvölzhin *wadang* to our typology. Thus Por-Bajin Type II, which displays a wedge-dominant design, becomes B.IV, and the identical *wadang* from different sites merge into the Ordu Baliq typology. We may also add the types displayed in published images from dörvölzhin Khundyn Khooloin 3 (noted as HH₃ in the table below), which do not have any unique *wadang* types as they have been found at Ordu Baliq as well. The table below conveniently demonstrates the preliminary typology and site distribution:¹⁴

¹⁴ Of course, refinement to this basic typology is possible, and we hope that this work will be built upon in future research.

Table 1. Distribution of Eastern Uighur *wadang* types.

Site: Type:	Ordu Baliq HB ₁	Ordu Baliq HB ₂ (western building)	Ordu Baliq HB ₂ (eastern building)	Ordu Baliq HB ₂ Z (Citadel)	HB ₃	Por-Bajin	UH ₃	HH ₃
A.I	•	•						
A.II	•							
A.III				Δ	•			
A.IV	•						•	
B.I	•	•						
B.II	•							
B.III	•							
B.IV						•		
C.I		•		•				•
C.II	•	•			•			
C.III		Δ						
D.I				•				
D.II				•		•		
D.III		•						•
D.IV				•			•	
D.V	•						•	
E.I	•							
F.I	•							

• Denotes finds from excavated context

Δ Denotes surface find only

Whilst many commonalities are found between Uighur *wadang*, there are some individual *wadang* from Ordu Baliq that should be noted. Most eave tiles found at Ordu Baliq are of the typical round-bodied type, but a few slightly unusual ones were unearthed from the eastern building of HB₁ (see fig. 17). Excavations of the northeastern corner of this building yielded two ovular-shaped *wadang* and the crudely formed inner decoration of another *wadang*. They were all found in close proximity,

suggesting that these three unique *wadang* may have been related in function and placement. The ovular shape of artifacts HB1 3184 (type A.II) and HB1 3186 (type B.III) indicates a different purpose for these *wadang*, although the fragmentary state of HB1 3186 does not allow for a clear rendering of its shape. It is interesting to note that these seemingly ovular or irregularly shaped *wadang* have been unearthed from HB1 only. HB1 3185 (type B.II) is also quite unusual as it depicts an inner decoration unseen in any other type. Another type, HB1 3228, was unearthed from the southwestern corner of the structure. Again, its outer shape may have been ovular, but the decorative impression was round, and thus we are undecided as to its function.

These different *wadang* seem to have occupied a different function on the roof. The ovular tile(s) may have been *niaoqinwa* 鳥衾瓦 (Japanese *toribusuma*) or another type of ridge end tile. The hypothesis that they were used as ridge eave end tiles is supported by their discovery in the corner regions of the structure. However, we should be wary, as some types may have been installed on the roof as a replacement for broken tiles after the original roof tiles were laid.

Other *wadang* such as the curved/angled type from Por-Bajin are unique amongst Uighur examples (fig. 18), but are relatively common in East Asian architecture and have been found in contemporary East Asian sites (He Suili 2010: 273). Whilst admitting the difficulty in precisely pinpointing their function, roof tile specialist Dr. Imai Koki posits that these tiles are similar to 谷丸瓦 *guwanwa* — end tiles that were placed where galleries met; these can still be seen in Japan today.¹⁵ This hypothesis seems entirely plausible. However, both Por-Bajin examples were found on the southern side of the central building, west of the southern *feilang*.

15 Personal communication of Dr. Imai Koki.

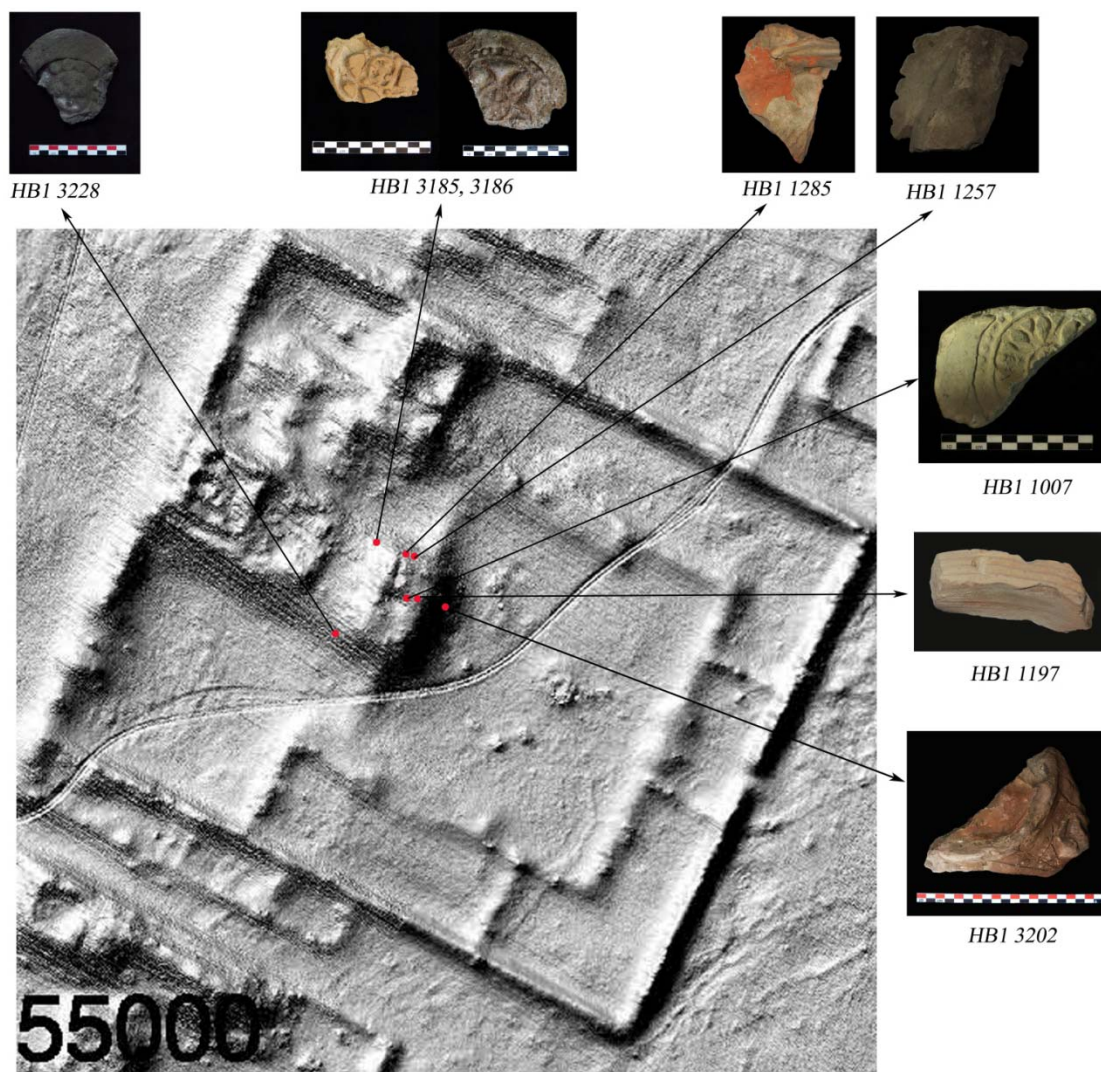


Fig. 17. Roof tile ornaments unearthed from Ordu Baliq HB1.

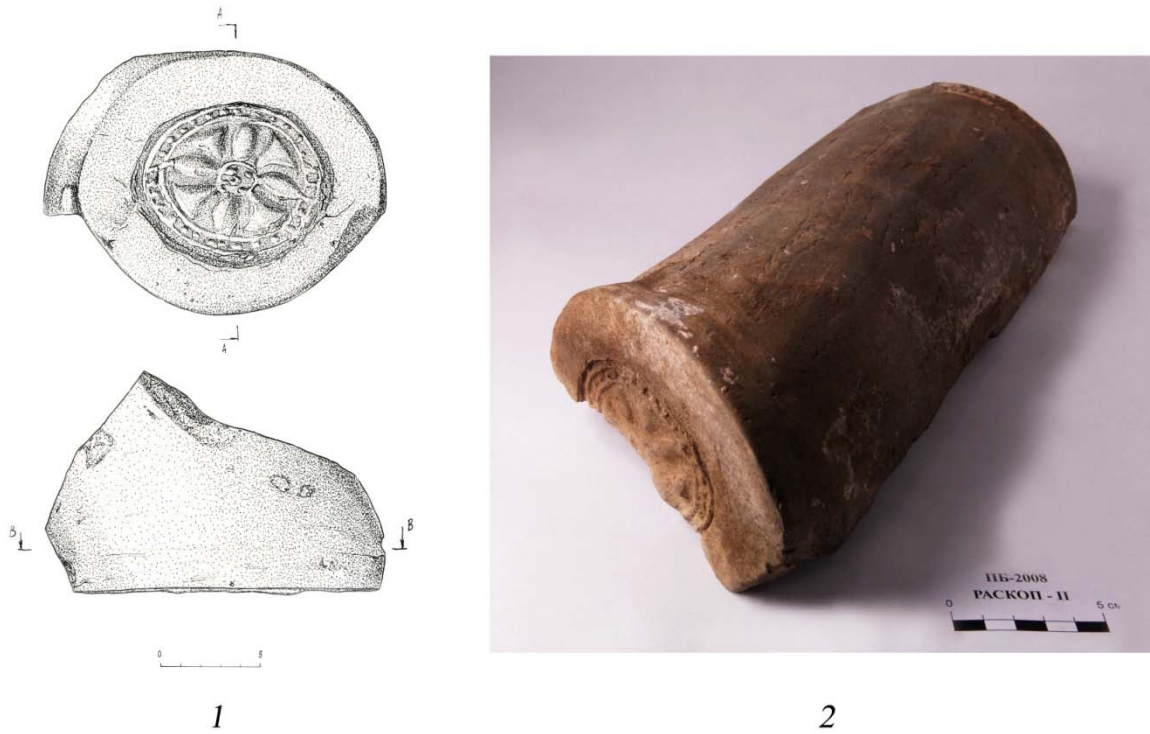


Fig. 18. Angled *wadang* from Por-Bajin. 1. Illustration of P17A265 and 2. photograph of P17A289.

Beast mask tiles and other roof ornamentation

Complete beast mask tiles have been unearthed from Por-Bajin and dörvölzhin. Two types of beast tile mask, *shoumian wa*, have been recovered from Por-Bajin. They were formed in a rectangular shape with the dimensions 23 cm tall and 20 cm wide. Although they are depicted with different artistic styles, the beast mask tiles discovered thus far follow a similar format — all with round eyes, wide nose and a wide rounded open mouth and long horns. A low relief rectangular plate serves as the base for the tile. This backing plate was incised with regularly spaced lines, depicting fur/hair radiating from outside the mouth that converge at the base of the mouth and on the sides of the eyes. Usually four fangs protrude, or point toward the upper or lower lips. The nose and eyes are closely set together with the eyes usually placed at the same level as (or slightly lower than) the nose. The upper teeth are set directly below the nose and this tripartite set of eyes, nose and upper teeth forms the furthest protruding and focal part of the mask tile. The ears of the beast masks are large, sometimes horizontally oriented and on others stretching towards the upper corners of the tiles, but always within the frame of the base plate. Long horns(?) follow the inner edge/ridge of the ears and fold

behind the ear lobe towards the outer limits of the tile. A blank space is given between the ears in the upper central region of the tile. Small, almost pyramidal features (locks of hair) are located in the corners of the base plate. On some models they are straight and on others curled.

The two styles of *shoumian wa* at Por-Bajin are indicative of the artistic styles and formats described above. Por-Bajin Type I is a highly abstract form of face, and it also contains juxtaposed tongues (or horn and tongue) above and below the nose. The features of Type I are relatively slender and simplistic yet also bold. Type II is more rounded, giving the features a bulbous look. All major features of Type II indicate considerable skill by the artist responsible. The wider and rounder mouth, eyes (particularly eye sockets), nose and curved lips were crafted expertly. Traces of black and red paint remain. For instance, black pupils are painted on the eyeball of Type II and the features, such as the ear lobes, eye socket and rim of the mouth are highlighted with red paint. Por-Bajin *shoumian wa* were found within the central building, near the corners and by the central sections of the walls. The discovery of the *shoumian wa* by the center of the walls, especially on the western and eastern side, may indicate that the roof was hip and gable. This may be because a simple hip or *wudian* roof (consisting of five ridges: an apex and four hip ridges) would usually place its *shoumian wa*-capped hip ridges near corners of the building, whereas a hip-gable or *xieshan* roof may have had additional (*shoumian wa* capped) downward/vertical ridges running closer to the center of the building's front and rear walls.

Two published images of *shoumian wa* from the excavations at dörvölzhin Khundyn Khooloin no. 5 indicate that a similar format was used there (Ta La et al. 2008: 358, fig. 39 and Ochir et al. 2010: 24, fig. 22). The Khundyn Khooloin no. 5 beast mask tile features a pointed lip, a protruding forehead horn(?), hair curl protrusions at the middle of the left and right edges of the tile and extended tips in the top and right hand corners. Fragments of *shoumian wa* have been published from UH3, the most prominent of those being pieces of the rectangular base and the central nose, mouth and teeth tripartite section (fig. 19.5). Fragments of the rectangular base suggest that the ears of the beasts depicted on the UH3 tiles did not point to the top corners of the tile, but were more horizontally aligned. A fragment of a tongue or forehead protrusion (horn) was also found. That remnants of black and red paint were traceable on fragments of the UH3 base plates suggests that Uighur beast mask tiles may have been decorated as per the Por-Bajin *shoumian wa* (see fig. 18.6, Ochir et al. 2008: 49–50).

Fragments of beast mask tiles have been found from almost all sides of the UH₃ central mound, although the majority have been recovered from its western (rear) side. Considering that at least seven sets of eyes, nose and teeth were recovered from the central UH₃ structure, one can assume that the roof contained numerous ridges and had multi-tiered roofing.

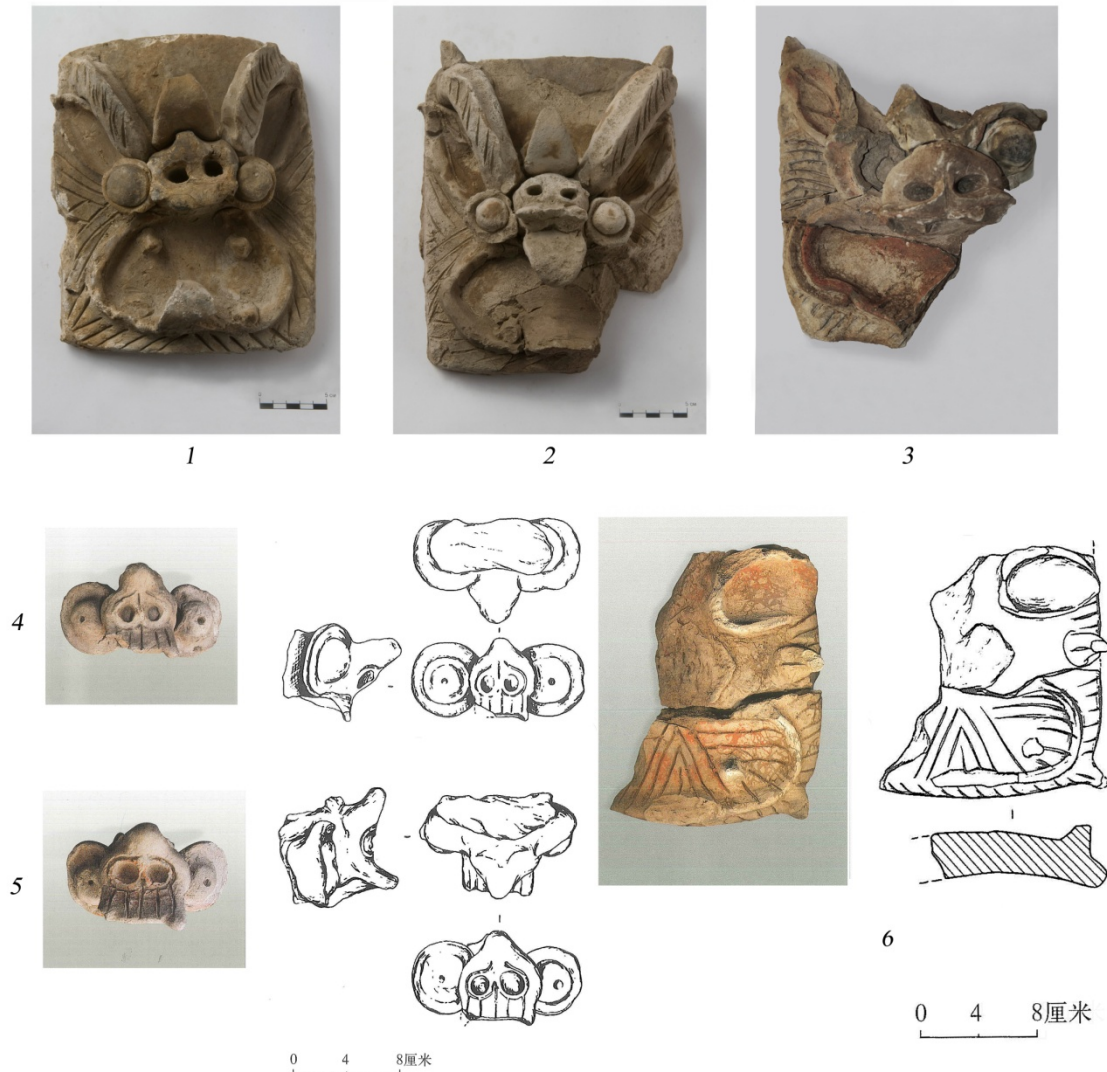


Fig. 19. Beast mask tiles. 1–2. Por-Bajin beast mask tile Type I, 3. Por-Bajin beast mask tile Type II. 4–5: UH₃ beast mask tile eyes, nose and teeth. 6. UH₃ fragment of beast mask tile base plate (after Ta La 2008: 50–51, figs. 27.5 & 28.2, 28.6 & pls. 24.2–3 & 25.1). Note: this scale applies only to the drawn illustrations.

Fragments from Ordu Baliq are also interesting, but extremely damaged and more difficult to reconstruct (see fig. 17). Fragments of a base plate and a horn or large fang (objects HB1 1285 and HB1

1257) indicate that there was probably a beast mask tile on the northern end of the main ridge. No extensive excavations were undertaken on the southern side, so it cannot be verified that these capped the north-south axial roof ridge of the structure. Another base plate (part of mouth?) fragment unearthed from the front (eastern side) of the building also suggests that another ridge was located in the eastern sector of the roof.

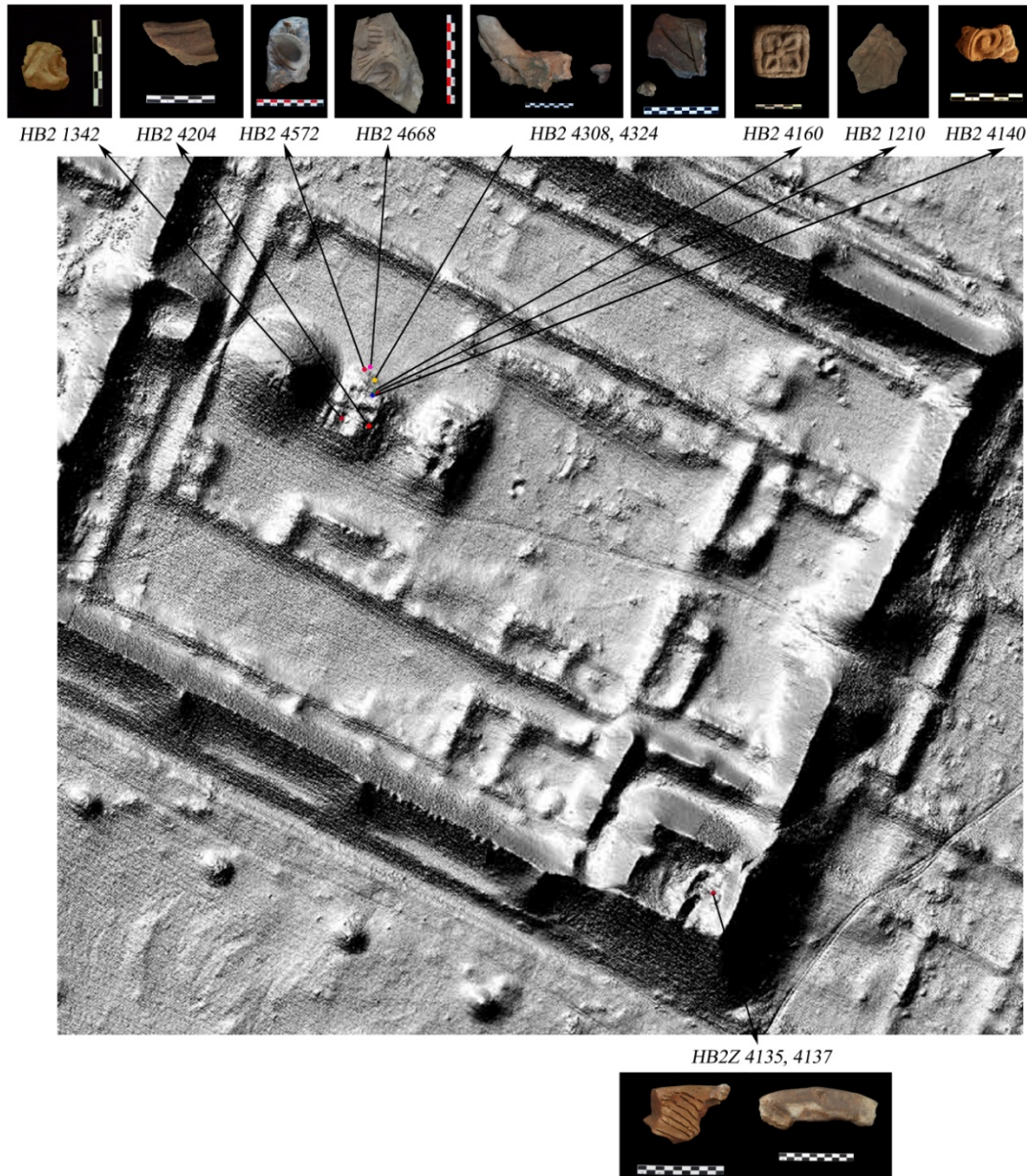


Fig. 20. Roof ornaments from HB2.

Within the so-called citadel of HB2, two fragments of beast mask tile have been found: HB2Z 4135, an edge decoration (possibly a raised hair curl on the sides of the tile) and HB2Z 4137, a horn or large fang. It is interesting that these traces of possible beast tile masks were found within the central eastern section of the citadel because they may have been used to decorate a ridge at the eastern edge of the roof, similar to HB1.

Like HB1, the central northern end of the ruins of the western building of HB2 yielded evidence of beast tile masks. A section of an ear attached to the upper left corner of a beast mask tile (HB2 4572), a horn or large fang (HB2 4308) and a large forehead protrusion ([HB2 4324] perhaps comparable to Khundyn Khooloin no. 5?) were recovered with other small fragments. These objects also suggest that beast mask tiles were used to decorate the ends of the main ridge.

Other fragments, less functionally distinct, have been unearthed from this structure. Two small ceramic fragments with swirl pattern reliefs found in the northeast (HB2 4140) and western sides (HB2 1342) of the building are not particularly instructive. Two other fragments, however, are particularly uncanny. HB2 4160, a 2 cm thick, 5.0 cm square, shaped ceramic object with an impressed quatrefoil and central roundel design has no parallels in Chinese roof ornamentation.¹⁶ In addition, HB2 1210, a pointed ceramic object with a fleur de lis inner decoration (with central ridge), pointed border and large outer roundels is also a peculiarity in Chinese architecture. This object was probably rhomboid in shape, with its rear flat and its decorative face molded and having the design impressed in relief. Its comparison with Sogdian art has been made elsewhere (Arden-Wong forthcoming a). It is possible that this artefact may have been an antefix that was attached to a first course barrel tile at the eave of the roof such as the "candle flame-shaped" antefix *didang huozhu* 滴當火珠 (*Yingzao fashi* 营造法式 13 and Guo Qinghua 2002: 31). Its flat rhomboid shape resembles a "nail" barrel tile antefix recovered from Northern Wei Luoyang (Qian Guoxiang et al. 2010: 211, fig. 3.1).

HB2 4160, 1210 and 4140 were found in close proximity in the northeast corner of the structure. It is unclear whether these objects have any relevance to the roof, and it is feasible that they may have pertained to other functions within the building. No fragments of roof ridge ornamentation were

¹⁶ For analogies of this object to Sogdian architectural decoration see Arden-Wong (forthcoming a).

found at the HB3 building, which perhaps indicates that it had a lesser architectural ranking than the other structures.

It is clear that Uighur beast mask tiles conform to a similar design, although variations between sites are evident. The general artistic format of these beast mask tiles allows for the reconstruction of fragments and is instructive for future scholars attempting to interpret Uighur tiled roof ornaments. Further, the distribution of the tiles indicates that the beast mask tiles were probably placed on the ridges of the roofs. This method of roof ornamentation is different from the popular Tang form of *chiwei*, and there is no doubt that monumental structures such as the western building of HB2 and the central building complexes of Por-Bajin would have been high-ranking structures, despite any clear indications of *chiwei* use on those buildings. The lack of complete beast mask tiles at Ordu Baliq is somewhat troublesome in confirming our proposed standard beast mask tile format at all Uighur roof tiled sites.

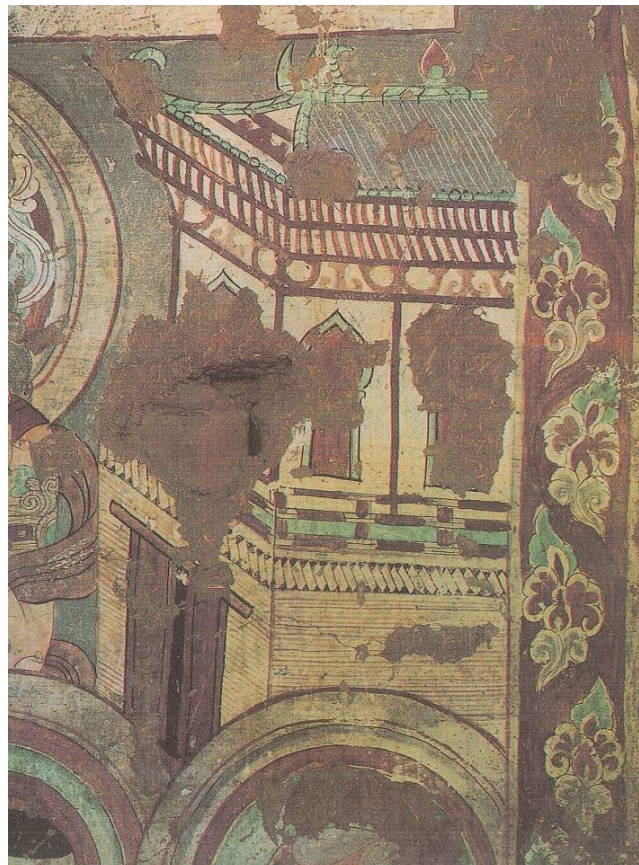


Fig. 21. Architectural structure depicted on a later Uighur Buddhist mural in Cave 15, Bezeklik (after: Turfan Cultural Relics Preservation Office 1990: 47).

The most uncanny features are the long horns/sabre tooth/fang fragments that have been discovered at the settlement. Analogues to these fragments are seen in ridge end beast head ornaments from Tang and Bohai sites and/or beast-styled *chiwei* (as opposed to the owl's tail type). Another hypothesis is that these fragments were used as ridge end ornaments as illustrated in the later Western Uighur Buddhist murals of Bezeklik Cave 15, Turfan, Xinjiang Province, China (see fig. 21). Murals from this cave show green-glazed curled horn ridge end ornaments, used both for the corner ridges and the central ridge of the buildings.¹⁷ However, this evidence is fragmentary and the current evidence from Por-Bajin and UH3 consistently suggests that all Uighur roof ridges, including the central apex ridge, were capped by *shoumian wa*.

Notes on tile manufacturing

Despite the use of green or *sancai* 三彩 (three-color glaze) by the Tang and other contemporary polities such as the Bohai and Silla for roof tiles, Uighur tiles unearthed found thus far are all unglazed.¹⁸

According to the Song Dynasty (960–1279) treatise on Chinese architecture, the *Yingzao Fashi* (published in 1103), fine sandless clay was required for making tiles, as opposed to bricks, which used sandy clay (Guo Qinghua 2005b: 108, *Yingzao fashi* (Li Jie) 13:[281]). After the clay was mixed with water, it was left overnight to achieve uniformity before being molded into forms, after which the clay was worked and then treated.

As has been reported from all Uighur sites, the clay used for tiling was brown-gray in color. Microscopic analysis of limited samples from the citadel of HB2 in Ordu Baliq showed consistent results: medium-large-sized clear to semi-clear to red inclusions (mainly silica) were randomly spaced, while black angular inclusions were also present. The clay was calcareous with bits of mica present. A

¹⁷ A reconstruction of Cave 15 can be viewed at the Ryukoku Museum, Kyoto, Japan. Our sincere thanks to Prof. Yutaka Yoshida for his kind invitation to visit Ryukoku University and the museum.

¹⁸ Note that most archaeological evidence thus far points to glazed tiles being reserved for ridge ornamentation during this period. Numerous depictions of green roof tiling are found in Buddhist cave art which reflect Tang administrative control over the standardization of roof glaze color (primarily green and yellow) see Fu Xinian 2002: 131. For the broader use of glazed tiling in Asia see Krahel 1991, particularly pp. 49–50.

few of these samples also contained rounded copper granules on the surface, probably indicating unfused black slag. Voids in the ceramic were irregular, which indicates that the clay was poorly prepared. As was expected, there were no traces of glaze on the tiles.

The Japanese-Mongolian expedition of 1999 undertook X-ray fluorescent analyses of tile and brick fragments from Türk, Uighur and Mongol period sites throughout Mongolia (Mitsuji and Muraoka 1999). Tile samples were taken from all three sites of Bay Baliq, and samples from the Ordu Baliq settlement and palace region were analysed. Comparison of their calcium and potassium levels showed that they differed and therefore the tiles were produced locally (Mitsuji and Muraoka 1999: 108 and figs. 8, 10). These results differed from the preceding Turkic sites which, according to this study, showed that the tiles were produced in certain areas and transported long distances (Mitsuji and Muraoka 1999: 108). Forthcoming results from the study of Por-Bajin roof tiles confirm that the tiles were made locally.¹⁹

¹⁹ Russian Academy of Sciences Geomorphologists M.A. Bronnikova and I.S. Turova along with Por-Bajin director I.A. Arzhantseva are currently in the process of publishing their research results on the Por-Bajin earthen architectural materials. They have kindly permitted the inclusion of the below excerpt of their findings pertaining to their ceramic roof tile study. These results confirm the present authors arguments regarding the local production of Uighur tiles and firing and cooling process.

"The first collection of 36 fragments represents architectural ceramics (roof tiles), which was gathered on Por-Bajin monument dated 770 CE. For this collection, typologically rather similar, the same in its ethno-cultural belonging, time and place of the production, the objective was to find the source of the material and the reconstruction of the technological process. In particular the architects had doubts if these roof tiles had any technological firing at all and were not formed with the use of any binding agent (cements). The results of the research showed that Por-Bajin roof tiles were fired. The temperature of the firing was apparently not very high and was in the range between 200–250°C (that is the first stage of burning out of organic admixtures, forming of magnetite and therefore growth of magnetic receptivity) and 400°C or slightly more, but definitely not more than 500–550°C (full burnout of non-carbonated organic material in the mix, beginning of the destruction of magnetite and synthesis of haematite which leads to reddening of the tile and fall of the magnetic receptivity index). Thus this was more of a drying process then a real firing that leads to general chemical and mineralogical transformations of the initial raw material which is followed by the agglomeration of the tile. The temperature schedule was not consistent enough which is witnessed by major difference in the magnetic receptivity indexes of the roof tiles. The roof tiles that have more red color should be considered as the tiles that went through secondary oxygen firing. The delta shaped loams from the bottom of the basin were used as the raw material for

From the Uighur *banwa* and *tongwa* tiles recovered, we can discern that they were all produced with a similar method. A mold was prepared that was made of thin wooden strips joined in the shape of a truncated pyramid and placed on a rotary platform. The molds were made into two shapes — a narrower cylinder for the barrel tiles and a wider truncated pyramid for pan tiles. Textile matting was placed on the surface of the mold/tub to even it out and to help separate from it when finished. The clay was then applied, most probably in coils, until the desired height and thickness was achieved. The tile was made even, smoothed and then lifted from the mold and left to dry in the sun. When the cylinders had become dry enough to hold their form, they were cut with a sharp knife into quarters for pan tiles and halves for barrel tiles. The tiles were then loaded into a kiln for firing.

According to the *Yingzao fashi* this method of firing took several days: "stacking bricks and tiles on the first day, firing on the second day, watering on the third day, opening the kiln to cool down for three days, then unloading on the seventh day..." (*Yingzao Fashi* chapter 15: [329] quoted in Guo Qinghua 2005b: 112). Watering of the tiles refers to the *yaoshui* 窑水 (lit. 'watering kiln') burning-water sealing method (Guo Qinghua 2002: 89). This is important for understanding how the different roof tiles achieved reddish or gray colors. Adding water to the hot kiln water produced vapor. The water vapor helped to speed up the cooling process and restrict the fresh air entering the kiln as it lowered in temperature. As Guo Qinghua describes the process: "This maintained a reduction condition in which iron in the clay remains in its FeO [ferrous oxide] form giving the bricks and tiles a gray color. Vice versa, if the kiln atmosphere was rich in oxygen, the ceramic turned reddish. The higher the FeO content in the baked clay, the darker the brick appeared" (Guo Qinghua 2005b: 113).

production of the roof tiles, and not the lake sediments, which were used to build the daub and wattle walls of the monument".



Fig. 22. Production marks on Uighur roof tiles. 1. Por-Bajin barrel tile with horizontal internal indenting, 2–3. Por-Bajin barrel tiles with *wadang*. 4. Ordu Baliq barrel tile with cord patterning on upper side. 5. Stamp markings on tiles from Khundyn Khooloin 3 (after Ochir et al. 2008: 339; fig. 12.2). 6. “Tamga” incision marking on a Por-Bajin barrel tile.

Uighur *wadang* discs were joined to its barrel tile before firing with extra clay and water. The joint was smoothed over; if prepared well, it is barely traceable from the outer/upper side. The inside of the connection provides more useful information. In preparation for the join, vertical lines were incised along the top edge along the rear of the disc to assist the joining process. Some examples bear sickle-shaped incisions instead of regular straight vertical cuts. Cross hatching of incisions was also common. Added clay and water would seep into the grooves and create a stronger bond between the disc and barrel tile. As with the upper/outer side of the tile, the inner would also be reinforced with extra clay although with understandably less care for aesthetics. The remnants of smeared fingerprints (left from the joint smoothing process) are sometimes traceable on the rear of Uighur *wadang*.

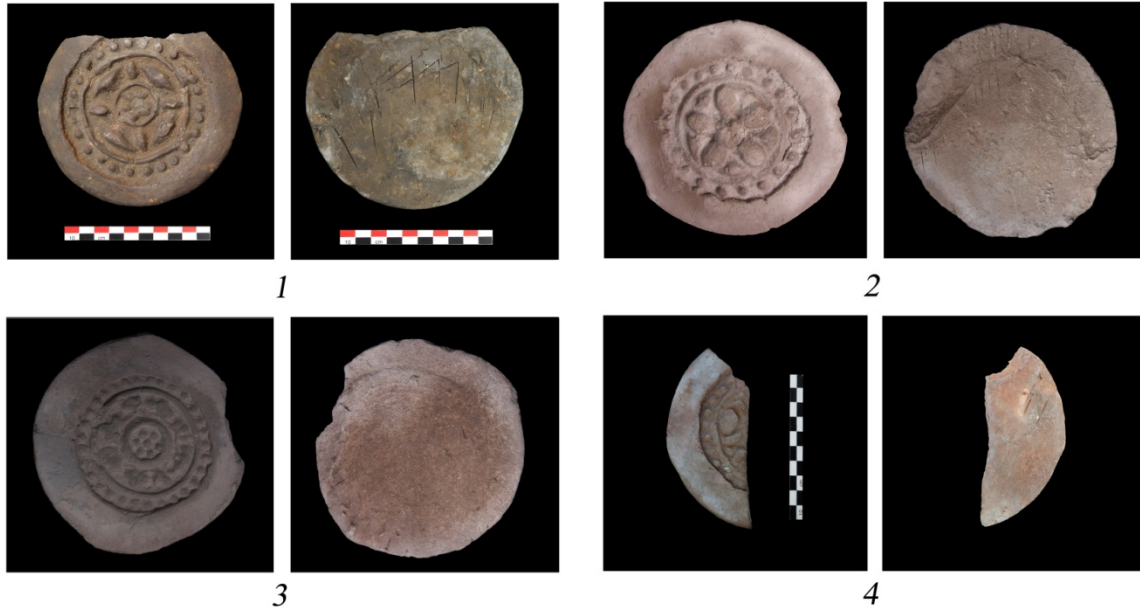


Fig. 23. Front and rear of Ordu Baliq *wadang*. 1. HB2 4522, 2. HB3 2133b, 3. HB3 2153a, 4. HB2Z 4017.

As mentioned earlier, some Uighur barrel tiles have been found with rope marks made on their upper surface. Hand prints (particularly on bricks) and rope marks are common manufacturers' marks in central China, and it is unsurprising they are also seen in the production of bricks and tiles at Uighur sites. These have also been reported from most Uighur tiled roof sites.

More unusual manufacturing marks in the form of stamped shapes impressed onto tiles have been found. Excavations of Khundyn Khooloïn 3 have yielded a fragment displaying horizontally arranged series of triangles with a dot in the middle and horizontal "L" shape stamps (fig. 22.5). We have also been informed that a growing number of samples with varying stamped and incised manufacturing marks are being discovered at Ordu Baliq. At Por-Bajin two barrel tiles having an incised curved line (in the shape of an "S"), with a horizontal line protruding from the middle of the upper concave curve, have been found. Incised markings like these are a type of tamga (fig. 22.6).²⁰ Tamgas were used as political symbols, marks of ownership, branding symbols, and markers of territory, and they were prolifically employed by medieval Turkic peoples (Samashev and Bazylkhan 2010, Ōsawa 2010 and Tezcan 2010).

²⁰ The Por-Bajin roof tile tamga have been likened, cautiously, to marks used by scribes in the early Eastern Uighur Khaganate (Arden-Wong 2013 and cf. Kyzlasov, I.L. 2004).

Also at Por-Bajin, two *wadang* were reportedly discovered that displayed Chinese characters. The Chinese character “東” *dong* (lit. east) was found on the rear of one unearthed from the eastern gate, and “西” *xi* (lit. west) on the rear of a *wadang* from the central building complex.²¹ It is most probable that these inscriptions were instructions for their deployment in the construction site.

Discussion

As shown above, there are consistencies in the use of roof tile ornaments, particularly *wadang* and beast mask tile designs, between Uighur sites. However, we need to compare the Uighur *wadang* designs to those from other polities, particularly in China and on the Mongolian Plateau, to ascertain the unique characteristics of Uighur roof tiles.

The connection with Tang Dynasty designs has been made by Kiselev and others who pointed out the general design and technology similarities with Tang tiles (Kiselev 1959: 166, Arden-Wong 2012: 31–32). Zhang Jianlin went further with his comparison of Tang and Uighur *wadang* and *shoumian wa*, citing the stylistic change within Tang tiles and its relevance to the Uighur (Por-Bajin) types (Zhang Jianlin 2012: 31). He noted that the seventh-century lotiform-designed *wadang* from imperial burial sites of the Tang dynasty were dipetalous or single petal. The lotus petals stand out, the rims are narrow, the surface is blue-black and the artifacts are delicate. In the middle of the eighth century and later the images on the roof tiles became fully single-petaled, the rim became wider, and the technique rather rough.

Zhang Jianlin goes on to state that the Por-Bajin roof tiles are very similar to the roof tiles found during the excavations of the burial site of Tailing Tang (of emperor Xuan Zong, built in 762), the burial site Jianling (of the Tang emperor Su Zong, built in 763) and of the burial site Chongling (of the Tang emperor De Zong, built in 805). Their petals are not as thick, and the rim of the roof tile is wider. Zhang Jianlin also makes pertinent points regarding the Por-Bajin beast mask tiles, stating that similar masks have been unearthed in large quantities from Tang palaces and burial sites (Zhang Jianlin 2012: 31). Masks with depictions of animals dated to the seventh century have a low relief and are made with the use of molds. They are trapezoidal in form and sometimes have delicate patterns.

21 The authors would like to thank Prof. Vladimir Zavyalov for this information.

In the middle of the eighth century and later, masks became rectangular and rougher. The depictions of animals are made in a higher relief with the use of molds and other parts sculpted by hands. Zhang Jianlin also draws analogies to the Por-Bajin masks found amongst the excavated materials from the tomb complexes of Tang emperors Suzong (d. 762) and Dezong (d. 805), which are dated to the middle of the eighth century and the beginning of ninth century. We generally agree with Zhang Jianlin's argument, which supports the Uighur period date of the tiles, although we have not found an exact replica of the Uighur *wadang* designs in China.²²

In addition to the general "rough" manufacture of the Uighur tiles proposed by Zhang Jianlin, we note differences such as the quality of labor, materials used and general kiln work flow. Some differences in the production technique between Uighur and Tang imperial *wadang* can be seen in the bonding grooves in the upper rear section of the *wadang*. As already noted, Uighur tiles have straight or sickle-shaped incisions (vertical and/or radiating toward the center of the tile); however, *wadang* from Taiye Pond of Daming Palace and Luoyang's Palace city have wide grooves (He Suili et al. 2010: 273–274 and Shi Zishe and Han Jianhua 2010: 314, fig. 31). Still, the Uighur incision method is more commonly found in China and surrounding environs. Even contemporaneous tiles from a tile kiln unearthed in the eastern city of Luoyang bear the marks of the radial incision method (Shi Zishe and Han Jianhua 2010: 314, fig. 32).

²² In addition, the authors have compared Uighur *wadang* designs to Tang period ones from Luoyang (Chen Liangwei 2003), Inner Mongolia (Chen Yongzhi 2003: 18–20), Xinjiang (Mou Xinhui 2013: 38–39), Korean Kingdoms of Goguryeo (Yin Guoyou and Geng Tiehua 2001), Baekje (Buyeo National Museum 2010) and Silla (Han Zhao 2005) as well as those from Bohai sites (Zhao Yue 2007). It is apparent that Tang *wadang* developed under the influence of the *wadang* formats in the Northern and Southern Dynasties period. The accelerated spread of Chinese architectural models to the Korean peninsula (also Japan) and Inner Asia as well as significant communication with the Tang saw considerable standardisation of *wadang* patterns, although each polity had its own take on the format – particularly beast masks and lotus designs. Buildings that were directly controlled or established by the Tang, such as Ak Beshim in Kyrgyzstan yield *wadang* that are very close in design with the Tang *wadang* types. Therefore it is unsurprising that Uighur *wadang* have their own characteristics, whilst generally keeping to the Tang *wadang* design format.

Türk and early Uighur tiles

Turkic tiles found on the Mongolian Plateau may provide evidence for the development of roof tile use, decoration and production methods in the region during the early medieval period.

The Khòshòò Tsaïdam twin memorial complexes of the Second Turkic Khaganate of Kül Tegin and Bilge Khagan, only twenty kilometres northeast of Ordu Baliq in the Orkhon Valley, offer two types of *wadang*, one at each site, both following the tripartite *wadang* design format.

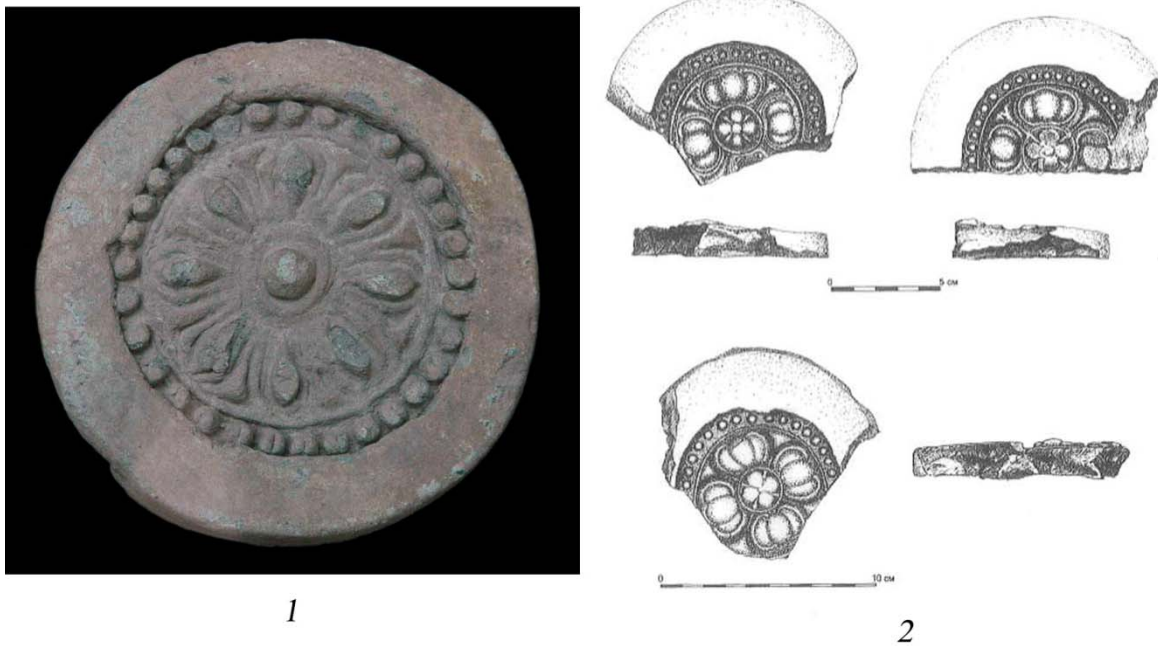


Fig. 24. Khòshòò Tsaïdam *wadang*. 1. Khòshòò Tsaïdam Type I (National Museum of Mongolia, 2007, Arden-Wong's photograph). 2. Khòshòò Tsaïdam Type II (after: TIKA 2005: 212).

Khòshòò Tsaïdam Type I (single petal type), from the complex of Kül Tegin, contains two low relief concentric circles dividing the design into three zones. The core is a single protruding round knob that slightly tapers towards its summit. The inner relief circle is a little wide and fits snug to the base of the knob. The middle zone holds eight elongated petals with thin brackets that bound each petal. Elongated "T"-shaped wedges fit between each petal-bracket, and the long leg of the T, like the petals and brackets, touches the inner circle. The outer zone contains thirty-two pearl roundels.

Khòshòò Tsaïdam Type II (tripetalous type), from the complex of Bilge Khagan, contains two low relief concentric circles, dividing the impressed design into three zones. The core of the design is

made up of five rounded bulbs, four of which surround the central one in a cruciform shape. Four thin partitions are placed between the four outer bulbs radiating from the point at which the bulbs meet, and four bulbous tripetal designs are separated by close-fitting bulbous T-shaped wedges. The long leg of the "T" touches the inner circle, and forty-two roundels are located in the outer zone. Illustrations published by TIKA reveal three variations of the core zone, showing varying sizes of the central roundel and elongation of the cruciform bulbs – on one example, the core motif looks more like a quatrefoil. Variation of the palmettes was noted by the TIKA team (TIKA 2005: 17–18), which most likely indicates the use of different molds based on a similar design. It would be interesting to compare complete fragments to see if they contain the same number of outer roundels.

A close analogy to second Turkic Khaganate Type B.I is the surface find from Ordu Baliq Type C.III. The key differences are that the Bilge Khagan *wadang* have four small partitions in the core region and the middle decorative zone has four triangular wedges between the bulbous tripetals. Needless to say, the uncertain provenance of the Ordu Baliq type makes it difficult to offer any firm hypotheses connecting Eastern Uighur and second Türk *wadang*. Considering that a relatively meager portion of Ordu Baliq, dörvölzhin sites and other Uighur tiled complexes (e.g. Bay Baliq) have been excavated, we cannot discount the future possibility of this analogy being further developed when concrete evidence comes to hand. However, at the current stage of analysis, it appears that the two Khòshóó Tsaïdam types belong to Zhang Jianlin's pre-mid-eighth-century *wadang* type and are distinct from Eastern Uighur *wadang*. Furthermore, stratigraphical data from Ordu Baliq has not yet been released, and there is still a hypothetical possibility that an earlier period of Ordu Baliq may exist, and that there may have been more than one construction phase at Khòshóó Tsaïdam. The primary investigator of the Kül Tegin complex, Lumar Jisl, claimed that the site was destroyed twice, which he attributed in the first instance to the destruction following the collapse of the second Eastern Turkic Khaganate at the hands of the Uighurs (and Basmils and Qarluqs), and in the second to the sacking of Ordu Baliq by the Kirghiz in 840 (Jisl 1960: 73). One can highlight the fact, that, to the best of our knowledge, only one type of *wadang* has been unearthed from the Kül Tegin and Bilge Khagan sites. This indicates that, despite the two phases of destruction, the roof eave tiles were not replaced, or (an unlikely scenario), another mold was made according to the specifications of the original design, and the resulting tiles were then added after the destruction.



1



2



3



4

Fig. 25. Turkic period beast mask tiles. 1. From the memorial complex of Kül Tegin (National Museum of Mongolia, 2007, Arden-Wong's photograph), 2. from the memorial complex of Tonyukuk (after: Rinčen 1955: 297, fig. 7), 3. from the complex of Tatpar Khagan (courtesy of Sören Stark) and 4. mural from the Shoroon Bumbagar tomb (after: Orchir and Erdenbold 2012: 82–3).

A beast-tile mask unearthed from the complex of Kül Tegin also appears slightly different from the Uighur type. Undeniably, the open mouth, wide nose and large eyes and beast-like appearance are familiar. However, there is a different design for the base plate, which has bulbous cheekbones and is not a low relief surface with incised lines for hair (other than a shaped pointed beard and whiskers, which radiate from the sides of the mouth, which is itself relatively small and square-shaped). The horns and ears of the tile are also missing, which does not help in the analogy. Fragments of "goat ear made of baked soil" and the ceramic horn found at the complex of Bilge Khagan probably belonged to a beast mask tile (TIKA 2005: 21). We should also note a beast mask tile unearthed from the memorial complex of chief minister Tonyukuk (d. 725) which is highly abstract, but which has a small mouth and a trapezoidal shape. The face has a moustache but is decorated without incised hairs (Rinčen 1955: 297, fig. 7). Although it looks vastly different from the Kül Tegin tile, it shares these features. A much earlier first Turkic Khaganate fragment from the memorial complex of Tatpar Khagan (d. 581, also known as the Bugut memorial complex) was found on the surface by Sören Stark (Stark 2008: 73). Stark's photograph shows the top right part of a beast mask tile (Stark 2008: 469, fig. 2d) with a clear border – most likely in a trapezoidal shape, perhaps even with a gap in its base to fit a barrel tile, as was sometimes included in beast mask tiles of this type. Although fragmentary, the Tatpar Khagan beast mask tile indicates another style for a tile of this type and reflects a difference between the second Eastern Turkic and first Turkic Khaganate *shoumian wa*.²³

These three rather different styles of *shoumian wa* can be compared to a very well-preserved mural painting of a beast face from the recently discovered Shoroon Bumbagar tomb in Bayanuur sum, Bulgan Province (Ochir and Erdenebold 2012). The tomb was constructed in the Tang tunnel-shaft method and has been dated to the mid-seventh century — a period of Tang administration on the steppe. Notably its bald head, the curvature and shape of its horns, the lowered/drooping eyebrows (obscuring the upper portion of its circular eyes), bulbous forehead and vertically pointed but front-facing, open ears are almost identical to the characteristics of the Tatpar Khagan *shoumian wa* (fig. 17.4). The Tatpar Khagan flat-bordered *shoumian wa* format is also consistent with those of the mid-

23 cf. Tang and Silla types presented in Portal 1990, p. 67 & 71, figs. 1 & 7.

seventh century of the Tang.²⁴ This is a rather confusing outcome, considering that the Tatpar Khagan and Shoroon Bumbagar sites are considered to have been constructed approximately three-quarters of a century apart. Further archaeological research is required to explain this anachronism.

Turkic barrel tiles and pan tiles appear similar to the Uighur ones. Production marks, tamga and artisan marks have not been given much attention, although one example of a painted barrel tile from the Bilge Khagan complex stands out. It is decorated with a scene of three horsemen in full stride, two brandishing bows, one of them executing a "Parthian shot" (TIKA 2005: 96, photos 49 & 50).

Another important distinction between the Turkic and Uighur sites is their roof ridge decoration. Excavations of both Khòshóó Tsaidam complexes revealed that "spiral tiles," flat ceramic pieces with embossed parallel lines spaced at regular intervals, were used to decorate the roof ridge (Šmahelová 2009: 336, fig. 12, and TIKA 2005: 21 & 83, photo 23). Whilst these pieces are highly fragmentary, it is quite possible that their straight protruding parallel lines are from an owl's tail *chiwei*. This evidence stands in direct contrast to the Uighur structures, which have yet to produce such typically Tang-styled central ridge end decoration.

Before closing this discussion we would like to draw attention to the *wadang* unearthed from the Khitan period sites Chintolgoi Balgas and Khermen Denzh. Both sites have been labelled as from the former Uighur settlement Khedun by archaeologists (Ochir and Erdenebold 2009: 437–438 and Kradin et al. 2011: 438–440). These sites have received recent archaeological study as a result of which reasonable arguments for the Uighur period use of these sites can be made: numerous fragments of Uighur pottery have been recovered, there are general architectural similarities such as the method of constructing ramparts, and there is similarity in the style of stone tortoise that was employed (at Chintolgoi Balgas). However, only Khermen Denzh has revealed any evidence of Tang period *wadang*, in this example: Khermen Denzh Type I: Diameter, 12 cm, 1.2–2.3 cm thick. Lotus seed design.

24 cf. Zhaoling, mausoleum of Tang Taizong (d. 649) see Zhang Jianlin et al. 2006. Note that although the Zhaoling *shoumian wa* has a pearl roundel border, other *shoumian wa* from the period are without it. We thank Dr. Imai Koki for kindly alerting us to this similarity and for additional information.

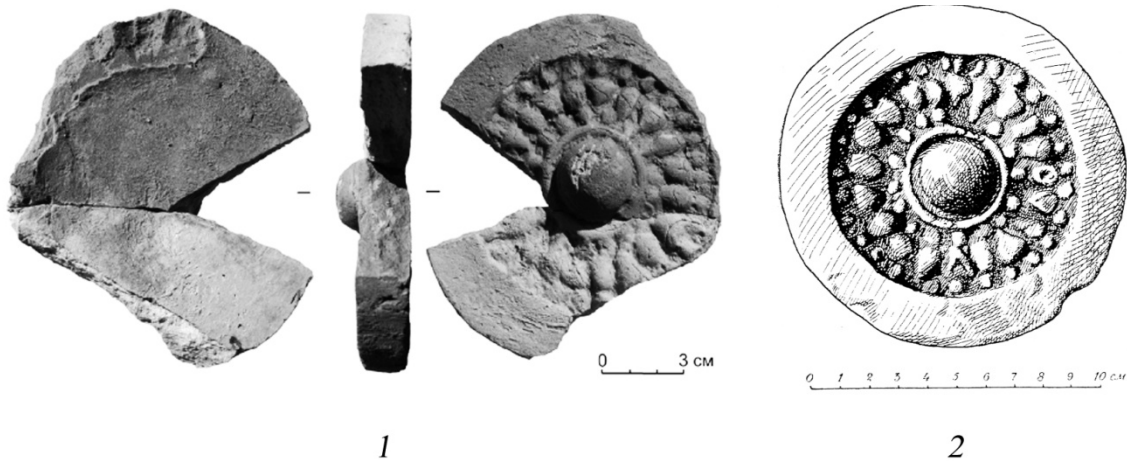


Fig. 26. Turkic period *wadang*. 1. Khermen Denzh *wadang* Type I. (after Kradin et al. 2011: 434 fig. 2) and 2. Illustration of *wadang* excavated from the Unget memorial complex (after: Borovka 1927: 78, fig. 10).

The example provided shows that the impression is not entirely clear and poorly formed. One low relief circle divides the design into two zones, a central knob and three concentric rows of roundels. The central zone is one large round knob that clearly protrudes from the face of the tile. Wide grooves at the top rear section of the *wadang* show a similarity to the aforementioned *wadang*-barrel tile joining techniques employed by the craftsmen who produced Damingong *wadang*.

As Kradin et al. pointed out, the *wadang* is not Khitan but is similar to those found at Turkic memorial complexes, and it fits more closely to the Tang type (Kradin et al. 2011: 434). We would like to take this analysis one step further and state that the *wadang* found at Khermen Denzh is almost exactly the same as the type reported by G. I. Borovka which was found at the memorial complex of Unget (Borovka 1927: 78). According to Borovka's illustration, sixteen small roundels surround the inner circle, and twenty larger roundels (the photograph in Kradin et al. suggests more) sit between the inner ring and peripheral ring of twenty-eight(?) small roundels. The Unget *wadang*, despite perhaps having a slightly different number of roundels, belongs to the same type. This suggests that the two complexes are architecturally and politically related. If this connection is drawn, what could it mean for our understanding of Pre-Eastern Uighur Khaganate architecture?

By closely following the *Liao Shi* and the Bilge Khagan and Kül Tegin inscriptions, Kradin et al. argue that the site fits well with the geography mentioned in these texts and that the abundant Uighur ceramics recovered from surrounding sites point to their being of Uighur use (Kradin et al. 2011: 438–

440). The team notes that the second Eastern Turkic Khaganate's defeat of the Uighurs (the Ādiz clan, one of the powerful nine clans of the Eastern Uighur Khaganate) at Khedun in early 715–716 is mentioned in the Orkhon inscriptions (Kradin et al. 2011: 439). The Russian-Mongolian team's proposal of an early date is also supported by the discovery of the Unget *wadang*.

The Unget memorial complex has been considered to be one of the earlier memorial complexes on the Mongolian plateau (Baġâr 1979). Unget does not contain datable textual data (in the form of stone inscriptions), though the Tatpar Khagan, Kül Tegin, Bilge Khagan, and Tonyukuk complexes do. Dating of the site has largely come from the retrieval of archaeological data using the analysis of a stone sarcophagus and the stone statues found within the complex. D. Baġâr's analysis posited an early Türk or even pre-Turkic (Rouran era) date, based on the crudely formed features of the statues (Baġâr 1979: 15–16), whilst a second Eastern Turkic Khaganate period has been proposed, due to the fact that the stone sarcophagus and zoomorphic stone sculptures are stylistically similar to those of Turkic memorial sites of the eighth century.

V. E. Voġtov, citing the historical work of the great sinologist N. Bichurin, believes that the site is the memorial complex of Xueyantuo Khagan, Yin'an, and was constructed in the late 640s (Voġtov 1996: 31 and Voġtov 1987). Voġtov's argument is based on the similarity of cultural practices between the Xueyantuo and the Türks, and he notes two periods of construction at the site. The first period, undertaken by the Xueyantuo in the 640s, included building a temple with a tiled roof and other characteristic architectural features of memorial complexes of this type (Voġtov 1996). The second period of construction/renovation was that of the second Eastern Turkic Khaganate, which saw the clearing of debris, installation of a stone sarcophagus and the moving of some of the statues into ditches (Voġtov 1987: 105–106). But, as Voġtov himself conceded, this region was inhabited by several different political bodies in the seventh century, including the Uighur (Voġtov 1987: 105). S. Stark has remarked that Voġtov's conclusion is hypothetical (Stark 2008: 116).

If we believe the arguments forwarded by Kradin and Voġtov, we can certainly incorporate them into the *wadang* evidenced here. It is in fact quite convenient that the *wadang* unearthed from both sites corroborates a pre-Eastern Uighur Khaganate date. It also points to an earlier Uighur *wadang* type that, as yet, has not been found in Eastern Uighur Khaganate sites. Nor have they been reported from the second Eastern Turkic Khaganate memorial complexes. As evidenced by the direct

parallels seen between some Uighur *wadang* types, an architectural and political link can be drawn through the close study of roof tiles. Closer attention to roof tiles can help classify relationships between sites. Similarities are often seen between roof tiles, and direct parallels can be clear and relatively obvious. Although many of the Turkic memorial complexes have been studied archaeologically, their roof tiles have not received adequate attention. Furthermore, the accumulation of such typological data may allow us to bring the murky and generalized archaeology of the sixth-ninth centuries of the Mongolian plateau into sharper focus.

The authors acknowledge the limitations of the present study, but they certainly believe that the future of Türk and Uighur studies is furthered with this contribution. The future of Uighur roof tile studies requires more detailed analysis and careful data collection, both quantitatively and qualitatively. Better techniques for undertaking ceramic content/compositional study will certainly enhance roof tile analysis. Localizing and studying Uighur kiln sites will also prove to be a significant step forward, particularly if production marks can be linked with these sites and with the stages of development of Uighur sites. We hope that the study of such well-known Uighur sites as Bay Baliq and the complex associated with Moyanchuo Khagan can add breadth to the already obtained data. An interesting addition to this study would be the examination of roof tiles from the site Khukh Ordung, located in the upper Sumiin Gol valley, approximately sixty kilometers southwest from Ordu Baliq. Interestingly, the architectural formula of the so-called Palace, or temple complex, of Ordu Baliq, and the Khukh Ordung walled complex are similar. C14 dating of wood samples taken from the outer walls of Khukh Ordung have calibrated dates of ca. 650 (Kolbas 2005: 307–308). Although these results need to be supplemented with further archaeological research, data from Khukh Ordung may provide clues to architectural and political developments on the Mongolian steppe in this period, and the study of its roof tiles should be a significant element of this.

The continued study of Ordu Baliq and dörvölzhin undoubtedly will add depth to the database of information on the archaeology of the region. The study of reused Uighur sites such as Khermen Denzh and Chintolgoi Balgas may also prove useful in better defining the architectural developments of the pre-Eastern Uighur Khaganate era. Likewise (and initial steps have been made in this paper), building a typology of Turkic period tiles could be of immense benefit in helping to

classify and date roof-tiled Turkic memorial complexes, particularly those that are without inscriptions.²⁵

Conclusion

Certain Eastern Uighur Khaganate structures were covered at their tops with roof tiles. These were most probably palatial, administrative or religious/cultic buildings. This paper has undertaken a preliminary study of these tiles and produced the following key conclusions:

1. Uighur roof tiles, particularly *wadang*, can be differentiated from Tang tiles and comprise their own category. The stylistic similarities between sites of the roof tiles are evident: they often closely resemble each other and sometimes are exactly the same. This confirms that there is an Uighur typology. Furthermore, these types have been proven to be stylistically different from the second Eastern Turkic types from Khóshòò Ṭsaïdam, despite their close proximity.
2. Uighur roof tile technology may have been Chinese, but the tiles were produced locally and are stylistically different from the Tang type.
3. It is difficult to reconstruct the roofs of Uighur sites, particularly as no clear or typical central ridge ends have been discovered. That stated, it is quite possible that main ridges did not contain *chiwei*, but instead used *shoumian wa*. It is also possible that the Ordu Baliq structures studied here used *chiwei*, although the evidence gathered thus far points to the use of *shoumian wa* as well.
4. It is possible that tiles unearthed from the Khitan settlement Khermen Denzh are from the first Uighur Khaganate, or at least are second Eastern Turkic tiles of a style different from the Koshoo Ṭsaïdam ones. As a result, a connection between Khermen Denzh and the Unget memorial complex has been drawn.

²⁵ The authors have noted the published descriptions and images of roof tiles from the Turkic memorial complexes in Xiao Hongnahai (attributed to Niri Khagan), Xinjiang (Lin Meicun 2005) and Ikh Khoshoot (attributed to Kul Chur) Delgerkhaan soum, Mongolia (Hayashi and Ōsawa 1999: 148–149 and pl. 9g), although further diagnostic data needs to be brought forward with further research.

This preliminary study of Uighur roof tiles should act as a catalyst for more attention to be paid to roof tile evidence from Türk and Uighur sites.

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