

The Tuyuq Buddhist Grottoes in Shanshan County, Xinjiang

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Abstract

In 2010, excavations were conducted to the Tuyuq Grottoes located in Shanshan (Piqan) County, Xinjiang. The excavation uncovered about 2500sq m in total, from which remains of over 50 grottoes and attached architectures and one ground level Buddhist temple were recovered. In the remains, about 200sq m of murals were unearthed, as well as large amounts of fragments of manuscripts, silk paintings and wooden implements. The caves of the Tuyuq Grottoes were arranged as multi-storied clusters centered by chaityas around which viharas, meditation caves and caves with other functions were opened. The two new-recovered chaityas would be opened around the fifth century and belonged to the Early Phase of Tuyuq Grottoes. The excavation to Tuyuq Grottoes provided precious materials for the researches on the ancient Buddhist cave temples and the history and cultures of the Turfan area.

Keywords: Buddhist archaeology; cave temples–Turfan; murals–archaeology; Tuyuq Grottoes (Piqan County, Xinjiang)

General introduction

Tuyuq Grottoes located at Mazar Aldi Village in Tuyuq Township, Shanshan (Piqan) County, Xinjiang are just in the heart of the eastern part of the Flaming Mountains; neighboring the Yanghai Kuriz to the south and linking the Subash to the north, Mazar Aldi Village is one of the important passages going through the Flaming Mountains (Figure 1). Along the cliffs on the east and west sides of the Tuyuq Valley, over 100 grottoes are distributed: they are the earliest and largest Buddhist grottoes in eastern Xinjiang and an important Buddhist center on the ancient Silk Road.

Since the mid 19th century, the foreign explorers successively came to

Tuyuq. In 1877, A. Regel, a Russian botanist, became the first known Westerner to conduct survey and measurement in Tuyuq. In 1893, 1897 and 1912, V. I. Roborovsky, P. K. Kozlov, D. A. Klementz, S. F. Oldenburg and other Russians looted lots of murals and scriptures from here. German expedition teams came to Tuyuq for three times; during the second time (the first Royal Prussian Turfan Expedition) in 1904, Albert von Le Coq, an expedition member, discovered many valuable scriptures, paper paintings and other artifacts in Tuyuq. From the end of 1906 to the beginning of 1907, Albert Grünwedel conducted detailed measurement in Tuyuq. The Japanese expedition team headed by Count Ōtani Kōzui 大谷光瑞 came to Tuyuq for four times to search for cultural relics: in 1903, Tachibana Zuicho 橘瑞超 and Nomura Eizaburō 野村榮三郎 looted large amounts of cultural relics including *Buddha-samgīti Sūtra*, the earliest manuscript of Buddhist scripture written in Chinese. In 1907 and 1914, Aurel Stein from Britain surveyed and dug some remains in Tuyuq and took some scriptures written in Chinese and Old Uyghur script and some murals.

In 1916, the Tuyuq Buddhist Grottoes were severely damaged by an earthquake occurred in Turfan. In 1928 and 1930, Huang Wenbi made two times of survey to Tuyuq. In the autumn and winter of 1953, the Xinjiang Cultural Relics Investigation Group of the Northwest Bureau of Culture made surveys to Tuyuq. According to the notes of Wu Bolun 武伯纶, more than 90% of the grottoes had collapsed at that time. In 1961, trusted by the Buddhist Association of China, Professor Yan Wenru 阎文儒 of Peking University conducted investigation

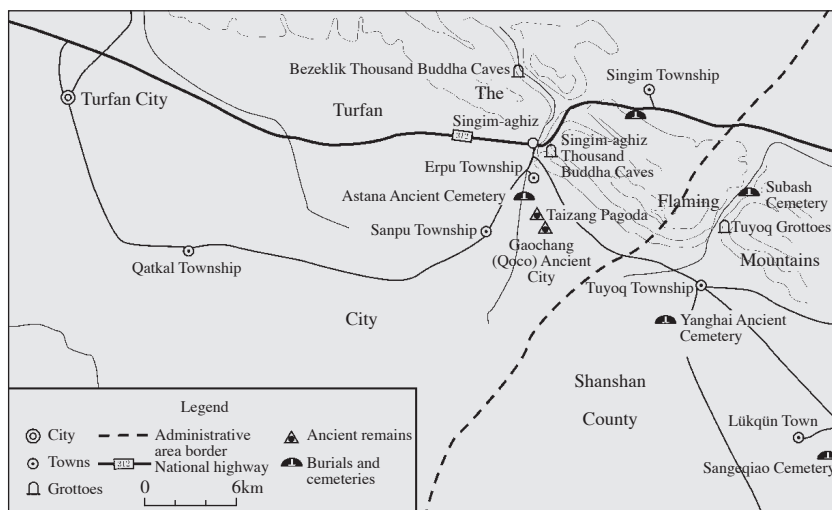


Figure 1 The location of the Tuyuq Grottoes.

and record to Tuyuq Grottoes. In 1957, Tuyuq Buddhist Grottoes was listed as one of the first set of the important heritage sites under the autonomous regional protection; in 2006, Tuyuq Buddhist Grottoes was listed as one of the sixth important heritage sites under state protection and the reserve list of the Silk Road as World Heritage.

To coordinate with the application of the Silk Road (Xinjiang section) for the World Heritage and the reinforcing project of the endangered cliffs, authorized by the State Administration for Cultural Heritage, the Institute of Archaeology, CASS, Academia Turfanica and Kizil Research Institute organized joint archaeological team made comprehensive survey and protective excavations to the Tuyuq Buddhist Grottoes since the year 2010.

The excavations was conducted in the spring and autumn terms; in the spring term, the grottoes and a ground temple in the north portion of the east cliff of the Tuyuq valley (East Zone) were excavated; in the autumn term, the north portion of the west cliff of the Tuyuq valley (West Zone) was excavated. In total, the excavations in the two terms uncovered areas of 2500sq m or so. In addition to the grottoes, some subsidiary architectures in front of the grottoes (including the front halls, porch floors, doorways and steps) were also found, murals 200sq m in total were recovered, as well as large amounts of fragments of scriptures in various language scripts, silk paintings, wooden and stone implements, potteries, sculptures, stationeries and utensils for daily use, etc.

Klementz and Stein have numbered some of the grottoes in Tuyuq, based on which the Turfan Prefectural Bureau for Cultural Relics renumbered them: Caves 1 to 25 were in the East Zone and Caves 26 to 45 were in the West Zone. During our excavation terms, we found that these numberings had sharp differences from the facts, and therefore we numbered the grottoes in the north portion of the East Zone again in the orders of from north to south and from top to bottom, the result of which is 60 grottoes numbered in total.

The grottoes in the north portion of the East Zone

The grottoes in the north portion of the East Zone are mainly located at the north end of the east cliff of the Tuyuq Valley. At present, 60 grottoes are preserved and the excavations involved 56 of them. These grottoes included chaityas (worshipping grottoes), viharas (dorm caves) and meditation caves, and auxiliary living facilities (Figure 2). On the steep cliff to the south, remaining traces of four grottoes are still kept.

This zone is divided by a gully in the middle into the north and south sections. The new numbered K1 to K26 are located to the north of the gully and the K27 to K56 are to its south. The grottoes located to the north of the gully are arranged into four stories from the top to the bottom; inferred from the extant remains, the center of this grotto cluster was K18. The grottoes to the south of the gully are also arranged into four stories from the top to the bottom, which consist of three clusters centered by the worshipping caves K27, K31 and K50, respectively.

1. The K18 was originally a chaitya. A flat area was cut out of the slope but its middle part was kept as the core of the central pillar; the central pillar was lined with adobes and the four sides of the flat area were built up against the bedrock into the walls.

The central pillar is in a rectangular plan, the remaining height of which is 3.75m. It is divided into two tiers: the bottom tier is about 4.15m long and 3.3m wide; at the place about 2.8m high from the floor, it recessed about 0.35m to form the second tier for supporting the springing of the vault of the surrounding corridors (ambulatory). The front of the central pillar has had a large-sized standing statue sculptured, but only the fragments of the back screen (nimbus) and lotus flower-shaped pedestal is preserved. The remaining back screen shows that the standing statue was at least 1m higher than the top of the surrounding corridors, which is a very special type.



Figure 2 The grottoes in the north portion of the East Zone of Tuyuq Grottoes (W-E).

The back wall of the rear corridor is formed by plastering daub on the cut-flat bedrock of the mountain. The lower part of the right (north) corridor is also the bedrock, and the upper part is built with adobes. The left (south) corridor is formed by building a wall on the cut-out flat ground with adobes. The front wall is also built with adobes and plastered with daub. The south part of the doorway has been destroyed, only the wall foundation is remaining; the north part of the doorway is still preserved, the wall of which is 2.55m in length, 2.95m in remaining height and 0.6m in thickness.

The central pillar cave K18 is 8.4m in full width and 8.5m in full depth (longitudinal length). The front hall is 6.9m in width and 3.4m in depth. The left corridor is 1-1.35m in width; the right corridor, 1-1.3m in width and the rear corridor, 1.35m in width. All of the corridors were covered with vaulted ceilings; from the remaining part of the vault of the rear corridor, we infer that the vault was 3.5m high from the floor.

In the rear corridor, close to the left and right corners of the central pillar, there is one posthole respectively. The left one is 11cm in diameter and 14cm in depth, in the bottom of which, rotten wooden column remains are still preserved. The right one is 5cm in diameter, which still has wooden column out of the floor. The function of these two wooden pillars is still unclear.

The front of the central pillar has fragments of the back screen remaining; the back screen was in arch shape with the middle part concaved. On the left and right sides, there is a line of postholes respectively, which would have been used for erecting posts to support the Buddha statue in the front of the central pillar. From the bending trend of the back screen, we infer that the Buddha statue in the front was more than 3m in height.

Below the back screen is the semicircular lotus flower-shaped statue pedestal made of stone, the diameter of which is 1.32m at the largest place and the height is 40cm. The pedestal is plastered with daub and coated with lime stucco; in the middle slightly to the rear, there are two round mortises set abreast, the diameters of which are 7 to 15cm and the depths are about 12cm. These two mortises are guessed to be used to set the wooden posts of the frame of the Buddha statue.

On the left and right sides of the central pillar, a low wall is built respectively: the south wall is 2.1m in height and the north, 1.13m. On the inner side of the north wall, a low tier in Γ -shaped plan is built, the height of which is 0.45 to 0.85m.

The floor of this cave was paved with daub first; from the remaining traces, we can see several times of amending and restoring. Over the daub layer, bricks were paved, but most of them have been lost, just the impresses are left. The bricks are 40cm long on each side.

In front of the doorway, there is a flight of three steps leading to the lower tier, but already damaged; it was about 2.05m wide originally and each step was about 35cm high.

On the walls of the left, rear and right corridors,

color murals were painted, but some of them have been destroyed because the walls were collapsed, and rather large areas of the murals are smeared by the mud brought in by the seeping water, and therefore these parts of the murals are unidentifiable.

On the outer wall of the left corridor, in the middle is the figure of the Buddha flanked by two bodhisattvas, between the Buddha and each bodhisattva is the figure of a disciple in small size. To the west are the Thousand-Buddha images and portraits of women donors. Below the figures are triangular lappet pattern and animal figures, etc. On the inner wall (the central pillar) of the left corridor, the main motif is also a Buddha figure flanked by two bodhisattvas, below which are a line of donor portraits in red robe with turndown collar and holding utensils in their hands.

The murals on the back wall of the rear corridor are mostly smeared by the seeped-in mud, only very few parts can be identified. The middle portion of the inner wall (the central pillar) has collapsed, but inferred with the references of other cases in Xinjiang, the murals in this portion would have been the Nirvana scene and Cremation scene. In the lower part, a line of eight figures of bodhisattvas can be identified, four on each side, all of whom are facing upward as watching something.

The motifs and arrangements of the murals on the both walls of the right corridor are roughly the same as that of the left corridor. The outer wall was severely damaged, but the figures of the Buddha and the bodhisattvas and the triangular lappet pattern below them are still identifiable. The motifs of the murals on the upper part of the inner wall (the central pillar) are also similar to that of the same place of the left corridor, and the lower part is severely damaged.

The story below the central pillar cave of K18 is a hall with three bays in the façade, the central bay of which has murals on the three walls except for the opening front. The floor of the hall has impresses of paving bricks. From the extant walls and the collapsed accumulations, we can infer that the original roof of this hall was a scaffolding structure. To the south of the central pillar cave is a set of two-storied meditation cave and dorm cave; behind the central pillar cave on the top is a group of meditation caves and dorm caves.

2. K27 is a central pillar cave (chaitya). In front of the cave, the north enclosing wall is still preserved but the south one has collapsed. The south wall in front of K27 intruded into K28 to its south, which implied that K27 was built later than K28.

3. The story below K27 is a set of triple grottoes: K36, K37 and K38. They were built on the platform cut out of the mountain slope and in a south-north row. The overall width of these three grottoes is 11.4m. The front half of their roofs have all collapsed but the rear half are still preserved.

K36 is roughly in a trapezoidal plan; nearby the window a hearth in irregular oval plan is built, in which large amount of burnt ashes are kept. In the middle of the

rear part, a platform in Π -shaped plan is built with adobes. The murals in this cave are mostly smeared or faded, only very few details of which are identifiable, such as the bodhisattva figures surrounded by bead chain pattern on the south and north walls. There are not brick paved traces seen on the floor.

K37 is roughly in a rectangular plan and partitioned into the front and rear quarters by a low wall which did not reach the ceiling. The walls are plastered with lime stucco and the corners were decorated with red color but no traces of murals have been found.

K38 is in a rectangular plan; because the walls were severely damaged by the mud, only the blue, green, yellow and other colors of the murals can be seen in some places. What noticeable is that the south wall and the places nearby the door have some remains of altering and amending. For example, the part of the south wall close to the present doorway was originally the doorway, and had a flight of six steps leading to K28, but was sealed with stone blocks into the wall. It is guessed that originally the K36, K37 and K38 had been in the same complex with K28, because of the construction of K27, the passage linking K38 and K28 was sealed and the steps mounting K28 was moved to the grotto clusters to the more south.

The platform in front of the K36 to K38 is paved with gray square bricks, and in its center a small architecture is built; on its two sides, niches are opened, but the function of this small architecture is not clear. The part to the south of K38 was built after laying stone slabs and filling soil on the platform as the foundation, so it must have been built later than K36 to K38.

4. K46 and K48 are two early caves sealed and abandoned because of the later reconstruction. K46 was located to the southeast of K38 and was superimposed by the wall between K39 and K40. The cave was filled with soil and then sealed with a wall; it would have been abandoned for building the caves including K39 and nearby ones. K48 was located to the front of K37 and on a lower story; an architectural complex to the north of K47 is exactly at the top of it. On the top of K48, there is a vertical shaft directly going to K47; this shaft is as long as 6m but so narrow that only one person can go through it at the same time. When K48 was abandoned, this shaft was sealed with a lid and then covered with many layers of soil to form the floor of K47. The west window of K48 was exactly facing the retaining wall on the border of the grotto clusters of this zone. This shows that the grottoes nearby K47 and the retaining wall were all built after the abandoning of K48.

On the gray ash plastered walls of K47 and K49, some inscriptions written with red color and black ink are found.

The grottoes in the north portion of the West Zone

During the break of the spring excavation term in 2010, we made investigation to some key areas of the West

Zone. At the turning corner of the mountain exactly across from the grottoes in the northeast of the valley we found some remains and excavated them in the autumn and winter term of the same year. The excavation recovered a grotto cluster. The investigation shows that to the north of this grotto cluster, there might be some other remains.

The excavation status shows that the grottoes in the north portion of the West Zone had at least four stories from top to bottom, because of the collapse of the mountain body, the remains are severely damaged. The highest story has only a dorm cave in the most west preserved, the second story has only a central pillar cave in the most east and the third story has some more remains kept; the lowest story has relatively more remains preserved. In the recovered areas about 600sq m in total, we find central pillar caves, meditation caves and dorm caves.

The central pillar cave cut out of the mountain cliff is at the east end of the second floor. Its rear corridor is directly opened into the mountain body, the left and right corridors as well as the central pillar are cut out of the slope; the walls and the central pillar are all lined with adobes, and the floor is plastered with lime stucco. Lotus flowers are painted on the ceiling and standing Buddha figures are painted in rows on the upper parts of the walls (Figures 3–5). The Buddha figures are with right shoulder bare and standing on lotus flower barefooted and their hands are in various mudras. These Buddha figures all have nimbi and halos and are shaded with parasols or canopies. Below the Buddha figures are triangular lappet pattern. The figure at the corner of the inner wall of the rear corridor is very special, the content of which is still waiting for further interpretation. In the middle and at the two ends of the rear corridor, a figure niche is opened respectively, but the figures in them have been lost, only the back screens are preserved. In the middle of the left and right corridors, a figure niche is opened on the inner and outer walls respectively; in the figure niche on the inner wall of the right corridor, remnants of mural of human figures are kept, as well as fragments of statue fingers. In the figure niche on the inner wall of the left corridor, the feet of the statue are still preserved; the outer wall of the left corridor has fallen down so the details are no longer known. The front part of this central pillar cave has also collapsed so the details of the structure are not clear.

To the west of the central pillar cave, there is an adobe wall which is about 1m thick built from the floor of the bottom story up to the ceiling of the central pillar cave. It separates the central pillar cave from the grotto cluster to its west.

To the west of the central pillar cave, there are two partly preserved meditation caves found on the place slightly lower than the central pillar cave. The most west part, two dorm caves with transverse barrel vault ceilings are recovered in the lowest story, each of which has a small meditation cave opened on the rear wall. Both of these two dorm caves have traces of later reconstructions.



Figure 3 The rear corridor of the central pillar cave in the West Zone of Tuyuq Grottoes (E-W).



Figure 4 The mural on the wall of the rear corridor of the central pillar cave in the West Zone of Tuyuq Grottoes.

It is preliminarily suggested that these grottoes were constructed with the central pillar cave as the center, but the general planning and structure are to be understood after the excavation.

The ground-level Buddhist monastery in the East Zone

The new discovered ground-level Buddhist monastery is located in the south of the East Zone, on the slope of a gap. Facing the west, this monastery was just across from the Khojam Mazar (aka. As'hāb al-kahf) in the west of Tuyuq Valley. It was a Buddhist monastery of Uyghur Period (Figure 6). The investigation shows that nearby the monastery site and on the mountains to the south and north of it, there are rather many ancient remains.

The excavation recovered areas 250sq m in total. This monastery was built against the slope and roughly along with the terrain; the slope was just slightly flattened and the monastery was built up



Figure 5 The mural on the wall of the rear corridor of the central pillar cave in the West Zone of Tuyuq Grottoes.

with adobes, so its elevation was in the shape of steps. The recovered part was the most east part, or the rear of the monastery; on its west, south and north, architectural



Figure 6 The ground-level Buddhist monastery of Uyghur Period (S–N).



Figure 7 The fragment of the mural in the ground-level Buddhist monastery of Uyghur Period.

remains were also found. The recovered architectural remains include a Buddha hall and a group of living facilities.

In the south is the Buddha hall, which is in a square plan 5.8m wide and 5.8m deep (longitudinal length). It is built with adobes in running bond, the thickness of which is about 1m and the remaining height was 0.65 to

1.8m. The floor of the Buddha hall is paved with square bricks made of red clay, each brick was 35cm long on each side. The Buddha statue pedestal built of adobes is in the middle slightly to the rear of the hall, but only three layers of adobes are preserved, the statue over which has been destroyed. From the fragments of the Buddha statues found in the collapsed accumulations, we know that the Buddha statues in the Buddha hall were gold-plated and color-dressed. On the lower parts of the remaining walls, remnants of murals are preserved (Figure 7), some of which are gold traced. The motifs of the murals are the Uyghur donors worshipping Buddha in lines, and some portraits of the donors had inscriptions in Uyghur script. These evidences show that this monastery was built in Qoco Uyghur Period (9th - 13th centuries CE).

In front of and one step lower than the Buddha hall is the front hall, which is formed by building walls on the outer edges of the north and south walls of the Buddha hall to the west. The front hall is in a rectangular plan 7.4m wide and 3.5m deep. The floor of the front hall is also paved with square bricks made of red clay; the walls are plastered with lime stucco and red belts are painted on the corners.

In the middle of the front hall, there are four steps leading to the lower story, the steps are 1m or so wide. On the two sides of the steps are ramps formed by accumulating soil onto the steps. The deposits below the steps are not excavated.

The north part of the excavation area closely neighboring the Buddha hall is the living facilities quarter. From the traces on the walls, we know that this quarter was built later than the Buddha hall. From this quarter, hearth, storage cellar and pits for living utensils and other miscellaneous things are uncovered. The collapsed accumulations here contained large amounts of wheat straws and animal waste, and so on. Because the north

and west parts of this quarter have not been recovered yet, its detailed structure is not clear.

The conclusion

The grottoes in the East and West Zones of Tuyoq valley are all arranged into multi-storied clusters centered by worshipping caves (chaitya), around, above and below which the dorm caves, meditation caves and other functional caves were opened. The worshipping caves took the most magnificent places in the entire zone; in addition to the murals, the walls of the worshipping caves were usually plastered with lime stucco and their floors were paved with square bricks.

The murals newly recovered in the East and West Zones all show styles of early periods, which are similar to that of the Gandhara Art in the Central Asia but different from that of the Buddhist arts in Hexi Corridor, Kucha and Khotan. It is preliminarily inferred that these two worshipping caves were opened in the 5th century CE.

In front of many grottoes, the remains of doorways, steps, front halls or porches are recovered; many features of altering, maintaining and even sealing (closing or abandoning) are discovered, which provided important clues for solving the problems such as the opening sequences and the assemblages of the grottoes, and so on. These remains can also be cross-referred with the records in *Xizhou tujing* 西州图经 (Annotated atlas of Xizhou Prefecture) that “(the Dinggu Temple in Tuyoq valley) is built based on the mountain, the cliff is followed and the steps are cut through; the pagodas are like flying in the sky and the bridges are like rainbows drinking from the Silver River (Milky Way) [寺其(基)依山构, 揆巘疏阶, 雁塔飞空, 虹梁饮汉].”

The excavations also recovered large amounts of manuscripts and prints in various language scripts, including Chinese, Sogdian, Tibetan, Uyghur, Brahmi, etc. These manuscripts and prints are transcribed Buddhist sutras, secular documents, glossed classic works, and so on. Some of them are well preserved with the rollers kept, and bearing date inscriptions. The earliest calligraphic style is that of the 4th to 5th centuries CE. In addition, silk paintings (Figure 8), paper-based paintings and textiles are also unearthed, all of which are valuable new materials for the research on the history and culture in Turfan area.

By the two terms of excavation, we obtained new information on the opening dates, types and arrangements and cave assemblage of the Tuyoq Buddhist Grottoes, which made us have new knowledge on the relationships between the arts of the Tuyoq Buddhist Grottoes and that of other regions. As the progressing of the archaeological work, Tuyoq Buddhist Grottoes will provide more valuable materials for the researches on the ancient Buddhist grottoes, ancient architecture and the regional characteristics of the Buddhism in Xinjiang area, and other academic issues.



Figure 8 The silk painting unearthed from the north portion of the East Zone of Tuyoq Grottoes.

Postscript

The original report published in *Kaogu* 考古 (Archaeology) 2011. 7: 27-32 with one illustration and two pages of plates was written by Chen Ling 陈凌, Li Yuqun 李裕群 and Li Xiao 李肖. This abridged version is prepared by Chen Ling and translated into English by Ding Xiaolei 丁晓雷.