The Frontier Fortification of the Liao Empire in Eastern Transbaikalia

Andrei V. Lunkov, *Irkutsk*
Artur V. Kharinskii, *Irkutsk*
Nikolai N. Kradin, *Vladivostok*
Evgenii V. Kovychev, *Chita*

An imposing earthen edifice, the "Wall of Chingis Khan," extends through the territory of three countries — Mongolia, the Russian Federation [hereafter Russia] and the People's Republic of China [China] — cutting across the steppe from west to east. It is not the only such wall of large size of that name on the territory of Inner Asia. There are three such walls on the territory of Mongolia, all of them called the "Walls of Chingis Khan." The first is located in the southwestern part of Mongolia; the second extends approximately along the northeastern border between Mongolia and China, and the third cuts across the eastern part of Mongolia, then enters Russian Transbaikalia and then China (Baasan 2006). It makes sense to designate them by their geographical location as the western, southeastern and northern walls.

The fortification features and date of the building of the southwestern wall have been discussed in a separate publication (Kovalev 2008). The southeastern wall was partially studied in 2001 by one of the authors of the present article. As far as we know, no archaeological investigation of that wall on the territory of Mongolia has been undertaken. Chinese scholars connect its building with the Jurchen Jin Dynasty (1115–1234). The present article systematizes the preliminary results of the study of the northern wall using GIS methods and the results of the study of the small forts which lie alongside it.

Apparently the first work to mention the wall and its forts was the article by Gerhard Friedrich Müller "Concerning the ancient monuments in Selenga and Nerchinsk districts" published in the "Historical observations" he sent to the Russian Academy of Sciences on 24 May 1736 (Miller 1937). In his article Müller described in some detail not only the wall but the forts which he examined near the town of Tsurukhaitui and in the Karaganatu, Kailassutu and Urtui valleys along the western bank of the River Argun. Müller considered that the wall was a border between peoples and that the small forts were temporary field camps used during some kind of military actions or preparations for them.

There is fragmentary information concerning the "Wall of Chingis Khan" in the notes of Peter Simon Pallas, who, apparently on the basis of the name of the wall, ventured the hypothesis that it was built to defend against "wild Siberian peoples" during the Yuan Dynasty (Pozdneev 1897). Probably its dating was based on the firm opinion of the local popuilation that the wall was connected with the lifetime of Chingis Khan. The great Russian revolutionary, the anarchist Petr A. Kropotkin (1876) provided a short description of the wall in his famous book about the Ice Age, written while incarcerated in the Peter and Paul Fortress. He had traveled along it during his journey to Manchuria in 1864.

During his journey along the Bol'shoi Khingan River at the end of the 19th century, the well-known explorer Grigorii N. Potanin made some observations about the wall and its adjacent forts (1898). A description of the part of the wall lying in Russia is also known from the early 20th century: "Now the wall is rather low, in places a completely ruined ridge not much more than two arshins high. In some places alongside the wall are the remains of forts. Thus, some 6 versta from the mouth of the Gan is a fort where the local inhabitants have found tiles, stone slabs and sculptures which they used to decorate

the church in the village of Novyi Tsurukhaitui (Shirokogorov 1919: 114–16).

In the mid-1920s the "Wall of Chingis Khan" and its adjacent forts on the Gan River (Gen He) was examined by Vladimir A. Kormazov (see Alkin 2001). The eastern end of the wall was studied more closely by Vladimir V. Ponosov in 1934. He also studied forts adjoining the wall — two in the region of Shankuli and one near the village of Labudalin. Ponosov (1941) was the first to date the wall to the Liao era and determined that these structures marked the border of the Khitan Empire.

In the 1950s, the archaeologist Sergei V. Kiselev began studying the Transbaikal part of the wall and its adjoining forts. He examined the round Koktui fort located 175 m from the "Wall of Chingis Khan." In his opinion, the fragments of gray tile and brick found there were evidence that the fort had some kind of buildings. Possibly these were wooden-framed houses roofed with tiles. Kiselev wrote that limited time prevented him from undertaking an excavation of Koktui fort. The surface scatters collected there largely consisted of sherds of gray pottery dishes with stamped ornament in the shape of small square indentations with inscribed lines, made by a rotating punch. These ceramics have been dated by scholars by analogy to Mongolian materials of the 11th–12th centuries and come from the Khitan period (Kiselev 1958: 108–09).

In the 1970s, Chinese archaeologists studied the "Wall of Chingis Khan" in the section along the river Gen He in China. They collected fragments of Khitan ceramic dishes and thus dated the construction to the Liao period. Referring to the data in narrative sources, the Chinese scholars, also suggested that the given wall was erected in order to defend the territory of the empire from the Shiwei, Yüchüeh, and northern Tszubu approximately during the reigns of Shengzong and Xingzong (983–1055) (Sun et al. 1991). So far on Chinese territory a dozen or more forts which were part of the defensive system that included the wall have been studed (Alkin 2001).

In 1989 the Mongolian section of the wall was studied by a Soviet-Mongolian expedition led by Valerii P. Chichagov. Several cross-sections were taken on the wall. Two of them were obtained near the Sino-Mongolian border at the lake Har nuur, where the wall had not been subjected to modern human activity. Another four cross-sections were obtained on the western part of the wall at its intersection with the road from Choibalsan to Ul'han-Maihan. There the wall had been affected by human activity — the pasturing of livestock and road diversion. It turned out that within northeastern Mongolia the "Wall of Chingis Khan" has, according to radiocarbon data, a range of dates. In the eastern part it amounts to 1380 BP, the western, 1080 BP. Certain indirect evidence led the authors of the article to think that the "Wall of Chingis Khan" possibly was repaired and rebuilt in a later period. They suggested that the wall was built by the Khitans in order to establish a long-lasting state boundary (Chichagov et al. 1995).

In 2002 the western end of the Mongolian section of the wall was examined by an international expedition of UNESCO, one member of which was Nikolai N. Kradin. Four km NNE of the *sum* center of Norovlin the expedition discovered a square fort measuring almost 50 x 50 m. Its walls were oriented in the cardinal directions of the compass. The width of the upper part of the walls was 3.5–4 m and at the base, 11.5–12 m. The external height was 1.5 m and internal up to 1 m. In the southern wall of the fort had a low area, apparently a gate measuring 5 m. No evidence was found of an exterior ditch, nor was there any evidence of structures inside the walls.

The "Wall of Chingis Khan" is 40 m northwest of the fort. About 25 m NNE of the point on the wall nearest the fort was a gate 8.5 m wide. In the given section, the upper width of the wall was 5.5–6 m and the width at the base 11–12 m. There was a ditch northeast of the wall 2.5 m wide. The exterior height of the wall was 0.6–0.7 m and interior 0.4 m. The wall was constructed of clay and gravel. Some 600 m NNE of the gate there was a tower-like projection from the wall 7 m long. It extended from within the wall (that is on the SE side) and 4 m beyond the outer edge of the wall.

The Mongolian researcher Baasan published (2006) a brochure in which he described in detail this and other walls on Mongolia. To date this is

indeed the most complete description of the wall. The author laid out the various ideas of scholars concerning the date when the wall was built.

Beginning in the 1970s the Transbaikal section of the wall and its nearby forts have been visited on numerous occasions by the Chita archaeologists Igor I. Kirillov and Evgenii V. Kovychev. In 1994–95, they dug exploratory stratigraphic trenches both on the wall and in the forts which showed that these structures all form a unified complex (Kirillov and Kovychev 2002). Five trenches were dug through the wall near the town of Zabaikalsk. In ruined sections of the wall and in the trenches the researchers found fragments of gray ceramics decorated with dashed lines, animal teeth and bones, and in Trench No. 3 an iron spike. Similar, but more numerous artifacts (ceramics, bone fragments of fish and animals, fragments of shells and flint, separate metal objects) were discovered in the nearby forts. The typical Khitan ceramics found during these excavations were the basis for concluding that the structures formed a single defensive system built by the Khitans in the time of the Liao Empire. This was a genuine state boundary, defending the northern borders of the Liao state from incursions by the northern nomadic tribes of Mongolia and Transbaikalia. The forts served as guard posts, placed along the southern side of the wall 1–1.6 km from it (the Kuladzha fort was 6 km to the south) and blocked the exits from the wider stream valleys every 15–20 km.

The Wall of Chingis Khan

The northern "Wall of Chingis Khan" and the majority of the forts are clearly visible on satellite photos and generally quite accurately plotted on the large scale military General Staff maps of the former USSR. We were able to combine the satellite and cartographic material to render more precise certain data and to correlate topographic and optometric data. Moreover, the satellite data revealed some previously unknown sites, whose existence was confirmed during field work. Using this refined data set, we now describe the northern "Wall of Chingis Khan" and the forts which were part of its system.

The northern "Wall of Chingis Khan" is a practically unbroken earthern embankment clearly visible on the ground. The preserved construction extends 745.8 km. The small breaks in the wall, in the first instance connected with natural and modern human factors, have little impact on the integrity of our perception of it.

The wall begins in the Saykhany River valley on the territory of Mongolia 13.5 km NW by W of Hangayn mountain at a point with coordinates 111° 22′ 19.1172″ E and 48° 23′ 13.1892″ N [Fig. 1]. The wall then continues 78.5 km NE along the valley of the Ulden Gol, passing the city of Norovlin, and at a point with coordinates 112° 9′ 28.4868″E, 48° 50′ 29.2416″ N changes its direction to the east. It then continues 153 km in an eastern direction to the point 114° 8′ 55.2948″ E, 48° 45′ 21.3948″ N not far from the lake Bayan Erhet nuur at the foot of the Bayan Erhet nuur range, where it smoothly changes its direction to the NE. Then the wall, continuing in a NE direction, intersects the railroad line connecting Solov'evsk in Russia to Choibalsan in Mongolia some 15 km south of the station named "Wall of Chingis Khan." It then bends around the north side of the lake Har nuur and intersects the state border between Mongolia and China at border post No. 635. For 60 km the

Fig. 1. Map showing the location of the northern "Wall of Chingis Khan".

wall extends through the territory of China and at the border marker No. 60 (117° 16′ 15.7332″ E; 49° 37′ 48.7092″ N), which is located right on the wall, enters the Russian Federation.

There is a small break in the wall on Russian territory near the city of Zabaikalsk. It continues in an eastern and northeastern direction along the left bank of the River Argun. Near the village of Kailastui the wall debouches on the bank of the Argun, along which it then proceeds right up to the village of Kaptsegaitui, where it breaks at a point with the coordinates 118°35′11.7024″ E and 49°56′31.7616″ N, crossing over to the right bank of the River Argun within the territory of China. The wall contines in a NE direction along the right bank of the river to the city of Heishantu, China, located 14 km SE of the mouth of the river Gen He, where the direction now changes to the east, following along the left bank of the Gen He. It goes on through the city of Labudalin and comes to an end on the left bank of the river Kulik He (a left tributary of the Gen He) not far from the city of Shankuli at a point with coordinates 120° 26′ 1.1904″ E and 50° 15′ 1.2024″N [Fig. 1].

The current height of the Russian section of the "Wall of Chingis Khan" is 1.0–1.5 m and width 9–15 m. Along its northern side is an earth-filled ditch. The wall itself has likewise collapsed, so that along its southern edge it imperceptibly merges into the current ground level, whereas on the north, due to the ditch, it is more sharply defined. At definite intervals (10–15 m) on the embankment of the wall are small elevated areas which give its profile a wavy appearance. From above they resemble the collapsed contours of some kind of platforms or bases, possibly used for the implacement and strengthening of additional above-ground constructions. They may be supporting columns connected by cross struts or beams.

20 km. NE of the town of Zabaikalsk in a silage pit cut was a stone foundation which resembled the base or facing of a hole dug for the erection of a vertical post, and in other places around the mound was significant compacting of the earth. Possibly related to that is a discovery in Trench No. 3 dug by Transbaikal archaeologists in 1994 near the town of Zabaikalsk. In a layer of light brown soil at a depth of 50 cm they found a large iron spike, with a sizeable head and a bent tip (Kirillov and Kovychev 2002).

The stratigraphy of the wall looks like this:

1. upper part — turf (15-20 cm);
2. layer of light-colored, fine-grained, yellowish sandy soil;
3. light gray sandy loam deposits;
4. excavated earth on which, apparently, the wall had been erected.

This layer ends at the edge of the wall. The sides of the ditch were cut down into the ground; it had a width of as much as 3 m and a depth of 65–70 cm. It was filled with a mass of dark-colored sandy soil consisting of that which had sloughed off the side of the wall. The layers in the structure of the wall had a marked tendency to blend together on its southern side, but the lower layers of soil were well packed. It is possible that the builders of the wall made a special effort to pack the lower part of the wall, especially next to the ditch, in order to prevent it from collapsing right away.

The system of forts of the "Wall of Chingis Khan"

The forts on Russian territory.

The other artificial constructions which in our opinion bear a direct relationship to the wall are the forts located in direct proximity to it. They are all located on the southern side of the wall and with rare exceptions not far from it or even directly "inserted" in the wall itself. So far along the wall of Chingis Khan on the territory of the Russian Federation are known and adequately studied eight structures. The study of satellite photos revealed one previously unknown fort, which was named Bugutur [Figs. 2, next page; 4, p. 110]. The names of some Transbaikal forts include the word *gorodok* (lit. "small town"), in usage common to the local population of southeastern Transbaikal. In systematizing of all the evidence concerning fortifications in the region, we have not changed the original names of these archaeological objects.

The forts located along the "Wall of Chingis Khan" are built on flat ground like all Khitan forts and towns (Ivliev 1983). The shape of the area formed by the walls of the fort enables them to

be classified by type (Table 1). Two Transbaikal forts are round, four rectangular and three round with an interior rectangle. This variety of the shapes of Transbaikal fortifications distinghishes them from other Khitan forts which usually are rectangular or square (Perlee 1961; Ivliev 1983; Ochir et al. 2005, etc.). The walls of the forts are earthen. On their outside is a ditch whose earth was used to construct the wall.

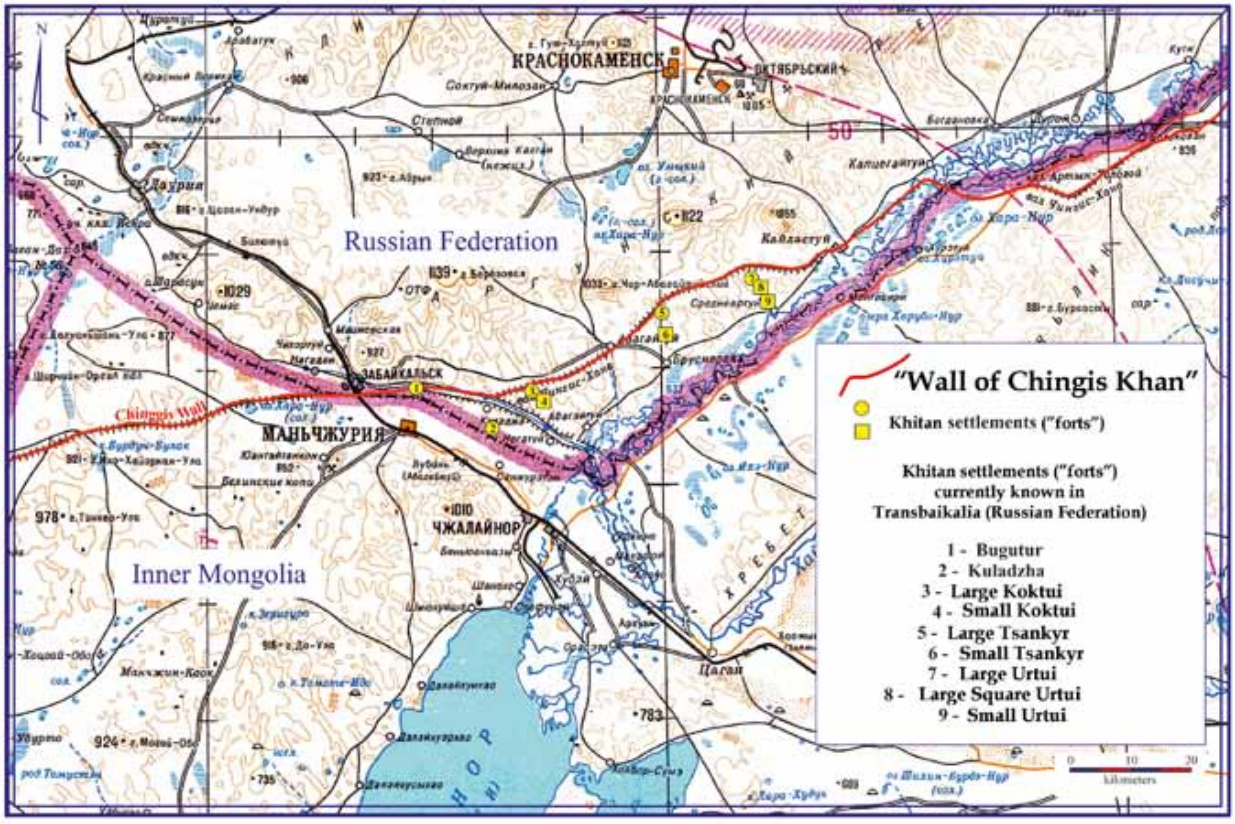
The description of these Transbaikal forts located along the "Wall of Chingis Khan" will proceed from west to east [Figs. 2 and 3].

All the rectangular forts, including those inside round ones, preserve semicircular mounds at the corners rising above the walls and extending beyond them — the remains of corner towers. Only in the case of the Bugutur fort are we left to guess about the existence of towers. That fort has been substantially destroyed, and the proportions of the interior fortification system in it can be traced only with difficulty [Fig. 4, p. 110]. In the large square Urtui fort, in addition to corner towers there are frontal towers on the western, northern and eastern walls. Ivliev considers (1983) that the frontal towers became the norm only in late Khitan forts of the 12th century.

Table 1. Classification of Khitan forts in Transbaikalia.

Round	Rectangular	Round with interior rectangle
Kuladzha Large Round (*bol'shoi kruglyi*) Urtui fort	Small (*malyi*) Koktui fort (*gorodok*) Small Tsankyr fort Large Square (*kvadratnyi*) Urtui fort Small Square Urtui fort	Bugutur Large Koktui fort Large Tsankyr fort

Fig. 2. The "Wall of Chingis Khan" and Khitan settlements ("forts") in Transbaikalia (Russian Federation).



At all of the forts except for Kuladzha, there is an entrance from the southeastern side. In the large square Urtui fort, the entrance is on the south. A distinction of that fort also is the presence of a semicircular defensive wall in front of the gates. Such defensive constructions are found usually in front of the gates of Jurchen forts. In Khitan forts the wall in front of the gate usually had the shape of a Π or Γ (Ivliev 1983).

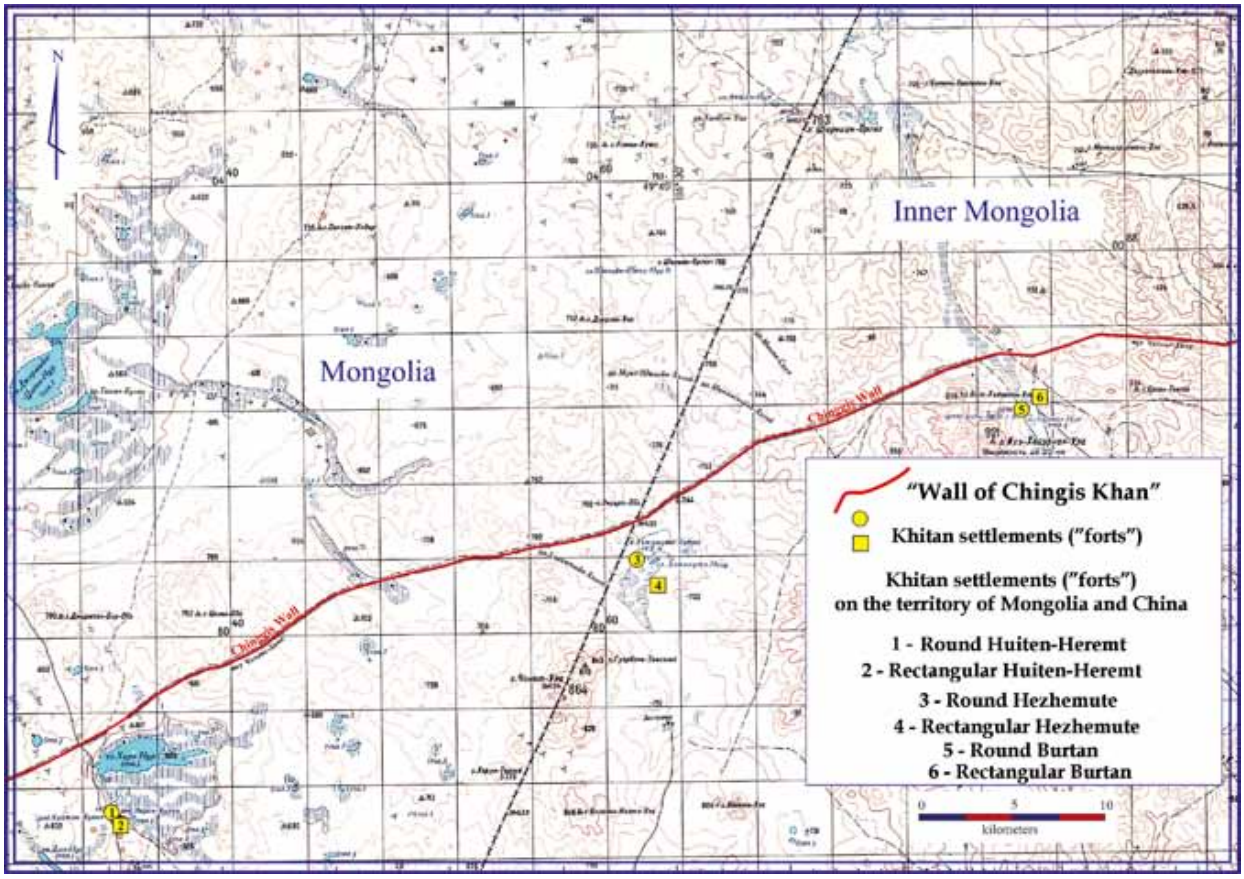
The Bugutur fort

It is located 8.8 km east of the town of Zabaikal'sk (Zabaikal'sk *raion*, Chita *oblast'* of the Russian Federation) and 2.33 km NNE of border marker No. 61 on the state border between Russia and China in the Bugutur vally, on the right bank of an unnamed stream [Fig. 2]. A. V. Lunkov discovered the fort in 2009 when examining satellite photos. In June of that same year it was examined by the authors of the present article, who drew a topographic map of the site and collected surface artifacts.

40 m north of the fort is a rural road which crosses the valley from west to east. A road which passes 80 m south of the fort also is oriented in that direction. Northeast of the fort is a watering station surrounded by a reinforced concrete wall. During the construction of the station the northeastern part of the fortification system of site was destroyed. Adjoining the south side of the watering station is a wooden fence used as a corral for pigs. The southern part of the fortification system was destroyed by the water channel extending from the southwest to northeast and the watering station. A little used rural road cuts through the fort from the south to the north, and from SW to NE and from NW to SE are two electrical power lines.

The fort has a double fortification system, the external one round and the internal square. The external one is an earthen wall with a ditch around its exterior. It encircles the territory of the fort [Fig. 4]. The exterior diameter of the fort measured at the outer edge of the ditch is 176 m

Fig. 3. The "Wall of Chingis Khan" and Khitan settlements ("forts") on the territory of Mongolia and China.



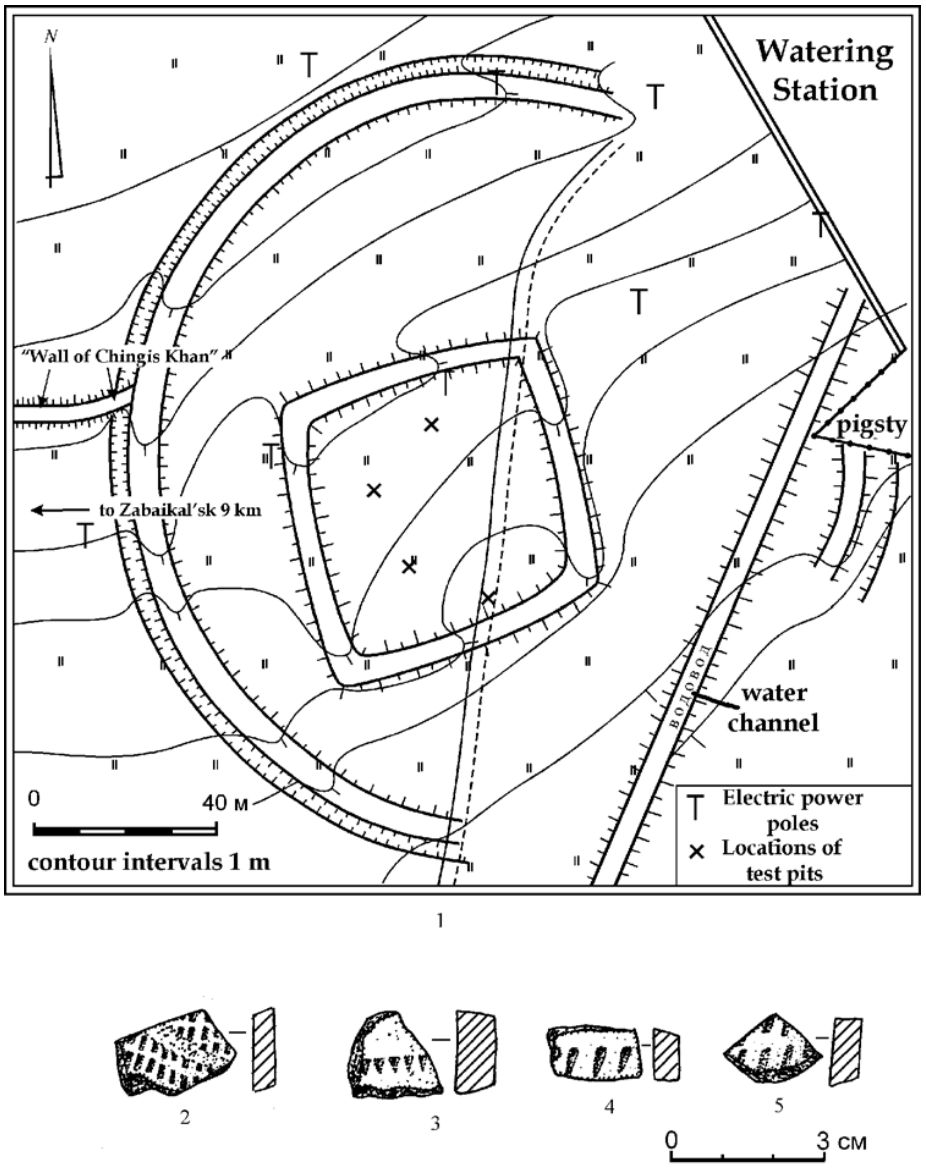


Fig. 4. Plan of Bugutur fort and samples of the Khitan pottery found there.

and at the exterior of the wall itself 170 m. The wall rises 25–30 cm above current ground level and is 9 m wide at its base. The exterior ditch is 30–35 cm below current ground level and 3–4 m wide. The largest height differential between the top of the wall and the bottom of the ditch (1.3 m) is in the southeastern part of the fort.

The interior fortification has a rectangular shape and is formed by a wall 10 m wide. On the southern side the distance from the top of the wall to its base is 1.0–1.3 m. Inside the wall that distance is 35 cm. On the northern side of the fort, these measurements are, respectively, 55 cm and 20 cm. The central rectangular construction is higher than the rest of the fort, on a base obviously formed by piling up dirt. This interior structure of the fort measures 35 x 35 m. Its walls are slightly bent outward. The western and eastern sides have an orientation of 346°, the northern side 77° and the southern side 67°. The central structure is offset from the center of the fort in the southwestern direction. Its southwestern corner is 12 m from the inside edge of the exterior wall of the fort; its northeastern corner 43 m. It is difficult to say whether there were towers at the corners of the rectangular structure as in the majority of the Transbaikal forts. The fort has been substantially destroyed, and the proportions of the exterior fortifications can be determined only with difficulty. It is also uncertain whether there is an entrance on the south side of the rectangular structure.

The "Chingis Khan Wall" comes up to the exterior wall of the fort from the west and has a width of about 6 m. The end of the wall, which abuts with the fort, bends to the north. Where the "Wall of Chingis Khan" joins the fort there is no ditch.

Test pits dug in the central rectangular part of the fort produced 14 fragments of Khitan ceramics [Fig. 4.2-5]

Fig. 5. Satellite image of the Kuladzha fort.

The Kuladzha fort

It is located in the Kuladzha Valley 2.5 km south of the village of Kuladzha and 3 km. NNW of boundary marker No. 63 on the Russo-Chinese border [Fig. 2]. It is 4.8 km south of the "Wall of Chingis Khan" and 12.5 km east of Bugutur fort. The fort is round [Fig. 5]. It has a single fortification system consisting of an earthen wall and an exterior ditch. The interior space of the fort is flat, apparently having been deliberately leveled. Its diameter to the external edge of the ditch is 207 m and to the external edge of the wall 200 m. [Fig. 6]. At its base the wall is 8 m wide, and the width of the ditch is 3 m. The distance from the top of the wall to the bottom of the ditch is 80–90 cm and from the edge of the ditch to its bottom about 10 cm. In the center of the structure is a small but clearly distinguishable round mound 9 m in diameter and 40 cm high. One can suppose that it was the point around which the wall of the fort was laid out during its construction, where a horseman could have ridden in a circle attached by a rope to a central stake. As in the case of the preceding one, the fort is located in direct proximity to running water, a stream that likely in an earlier time was fuller and would have been a source of water for filling the ditch. A fresh water well with a constant water supply is located not far from the fort.

The large Koktui fort

The large Koktui fort closes off the Koktui Valley. It is south of the "Wall of Chingis Khan," 6.89 km. northeast of the village of Kuladzha and 11.1 km northwest of the village of Abagaitui [Fig. 2]. The straight-line distance from the fort to the wall is 255 m and to the preceding Kuladzha fort 6.3 m along the wall. The plan of the fort is identical with that of Bugutur — a perfect circle with an inscribed rectangle. The exterior dimension of the wall has a diameter of 155 m, its width at the base is 4–5 m. and its height up to 1.5 m, while the exterior ditch is 4 m wide and up to 1 m deep. The interior structure on an artificially constructed foundation is surrounded on four sides by walls up to 1.5 m high. At the corners tower-like structures are clearly visible, extending out more than 4.5 m. The interior structure of the fort measures 64 x 64 m along the outside of its walls. Like the exterior wall of the fort, it is surrounded

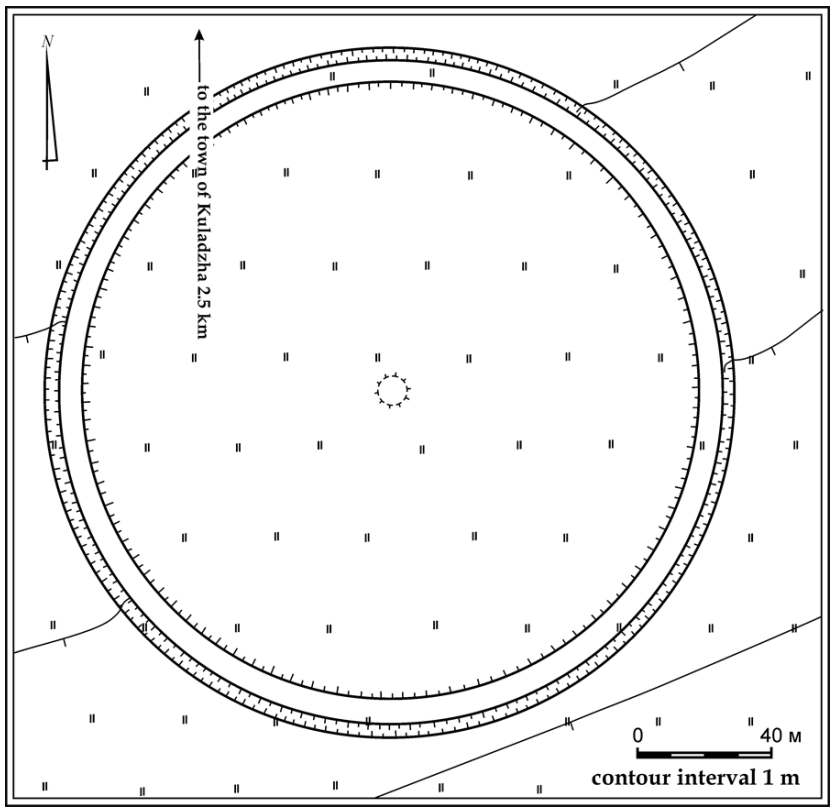


Fig. 6. Plan of the Kuladzha fort.

by a ditch. Both in the southeastern sector of the round wall and the southeastern side of the interior structure are breaks where in all probability there were entrances. An unnamed fresh water stream which flows near the fort was the source for filling the ditch.

The small Koktui fort

It is located 7.23 km northeast of the town of Kuladzha and 10.69 km northwest of the town of Abagaitui [Fig. 2]. The fort is located 398 m southwest of the large Koktui fort along the same valley close to the stream bank. The distance from the fort to the "Wall of Chingis Khan" is 689 m. The rectangular structure consisting of earthen walls with corner towers is surrounded by a ditch that now is 4–6 m wide and up to 1 m deep. The walls are up to 2 m high with a width at the base of 3–5 m; the towers are 2.5 m high. The exterior dimension of the fort is 30 x 40 m. The fort is on a built-up foundation whose interior then was dug out and leveled.

The large Tsankyr fort

The large Tsankyr fort is completely analogous to the large Bugutur and Koktui. It is located 8.8 km NE of the Abagaitui mine and 8.6 km NNW of the village of Brusilovka in the Tsankyr Valley [Figs. 2 and 7]. The exterior wall of the fort is a perfect circle 153 m in diameter measured to its outer edge. In its current state, it is up to 1 m high and its base 3–4 m wide. The wall is surrounded by a now largely filled in ditch up to 0.5 m deep. The interior square structure is offset to the northwest

Fig. 7. Satellite image of the large Tsankyr fort.

sector of the surrounding enclosure. It measures 47 x 47 m. The construction consists of earthen walls up to 2 m high and 3.5 m wide at the base with corner towers 2.4–2.6 m high in their current state. The structure is surrounded by a wide ditch.

The fort is 216 m from the "Wall of Chingis Khan" and 24.6 km along the wall (24 km as the crow flies) from the large Koktui fort. The source of water for filling the ditch apparently is the nearby Brusilovka stream.

The small Tsankyr fort

It is located in the Tsankyr Valley 3.9 km SSE of the large Tsankyr fort [Fig. 2]. In its plan and construction it is identical with the small Koktui fort. The square structure was erected on a built-up foundation, which was then dug out inside. The walls are 2.1–2.3 m high and 4–5 m wide at the base. The corner towers are clearly defined, extending 2.3–2.5 m beyond the wall, and are 2.6 m high. Around the outside of the walls is a thoroughly filled in ditch. The straight-line distance of the fort to the "Wall of Chingis Khan" is 3.5 km.

The large round Urtui fort

It is located in the Urtui Valley 5 km NNW of the town of Sredneargunsk and 13.8 km SW of the town of Kailastui [Fig. 2]. Its straight-line distance from the "Wall of Chingis Khan" is 2.2 km. Its type is identical with that of the large Kuladzha fort, with a perfectly circular shape. There are no interior structures. The exterior diameter of the wall is 158 m, its width at the base 3.5–4 m and height up to 1 m. The ditch around the outside is 2.0–2.5 m wide and up to 0.5 m deep. A break in the southeastern section of the wall some 5 m wide may have been an entrance. The distance between the large round Urtui fort and the large Tsankyr fort described just above is 15.8 km along the "Wall of Chingis Khan" and 15.2 km in a straight line. The River Urtui flows right next to the fort and undoubtedly was the source of water to fill the ditch around it.

The large rectangular Urtui fort

It is located 1.5 km SSW of the large round Urtui fort, 4 km from the "Wall of Chingis Khan" [Fig.

2]. The large rectangular Urtui gorodok is the largest known of the rectangular forts along the "Wall of Chingis Khan." It has a rhombic shape, the western and eastern walls of which have an orientation of 1° and the northern and southern 284° [Fig. 8]. The exterior measurement of the fort is 110 x 115 m.

Into its wall are built four corner and three frontal towers, the latter in the middle of the western, eastern and northern walls. They project out from the wall 5 m; the horizontal section of the towers is round. The diameter of the corner towers at their base is 15 m and in the upper part 10 m. The diameter of the frontal towers at the base is 15–17 m and in the upper part 12–14 m. Taking the towers into account, the length of the wall is 122–125 m.

The height of the walls is 1.1–2.0 m and width at the base 9.5–10 m and 1.5–2 m at the top. The southern part of the fort is the highest, where the distance between the base and top of the towers is 2 m. The lowest part of the fort is the northeastern, where that distance is only 1.1 m. Measured on the inside of the fort, the distance from the top of the towers and the base is significantly less — from 55 cm in the northeastern corner to 1.4 m at the western tower. The fort was erected on a specially prepared foundation. The interior of the fort is from 44 cm (the NE corner) to 95 cm (the SW corner) higher than the surface of the ground outside. The largest difference in height between the top of the wall and the ground level inside the fort is 60 cm (between the northwestern and southeastern corners).

In the central part of the southern wall is a passage 3 m wide aligned at an angle of 14°. Outside the wall the entrance has a supplementary fortification in the form of an arc-shaped wall, in the middle of which is a passage 2 m wide. Between the passage in the main wall and that in the supplementary wall is a ditch 4 m wide, across which in all probability was a bridge in ancient times. The width of the supplementary wall at the passage is 5 m and at its ends 2 m. Between its ends and the main wall the width of the ditch is 2 m. Around the outside of that wall is an approximatedly 4 m wide ditch.

Outside the main wall is a ditch 3–4 m wide. South of the fort its width achieves 15 m. The ditch surrounding the structure apparently was filled by water from the nearby River Urtui.

The small Urtui fort

The structure is located in the Urtui Valley 2 km northeast of the town of Sredneargunsk [Fig. 2]. The fort is of type 2 by our classification and identical with the small Koktui and Tsankyr forts. Its walls are 2.1–2.3 m high, the corner towers

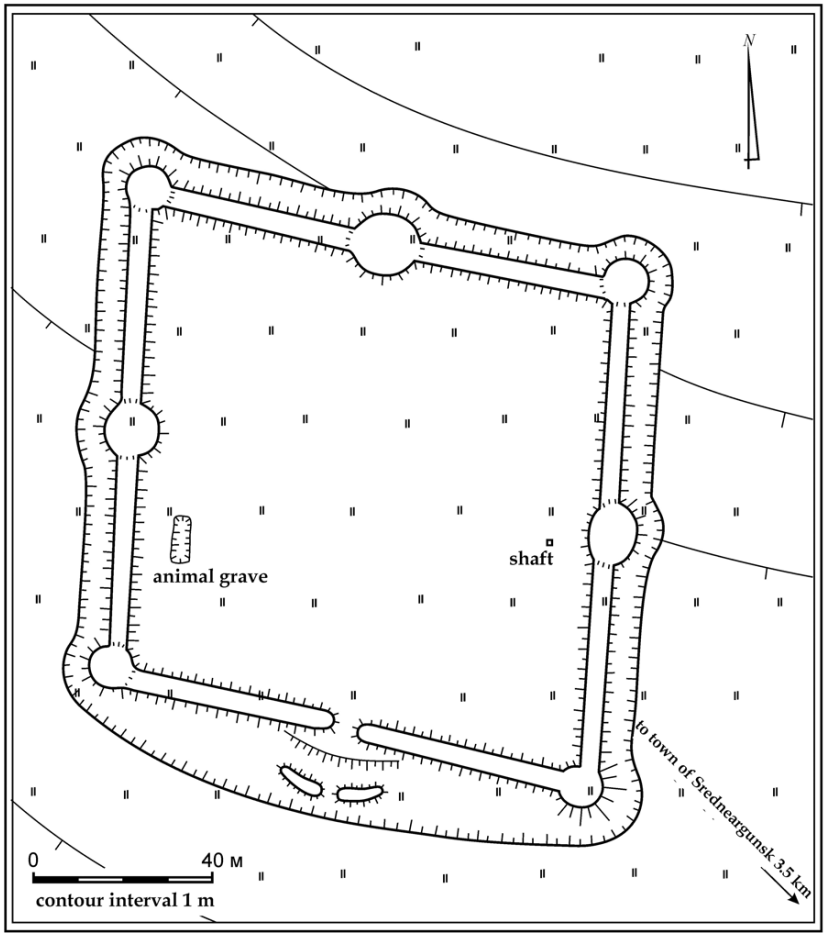


Fig. 8. Plan of the large rectangular Urtui fort.

are clearly defined and are 2.5–2.6 m high. The exterior measurement of the walls is 27 x 26 m. The walls around the perimeter are surrounded by a poorly defined filled-in ditch. The fort is 5.4 km from the "Wall of Chingis Khan."

Forts in Mongolia and China

Unfortunately we have only incomplete information about forts located along the wall in Mongolia and China. Our data are limited to those obtained by studying satellite photos. Nonetheless, we feel it useful to present that information here, the more so because it is significant for the examination of the entire system of walls and forts and confirms the regularity of their topology.

Below we provide a description of the forts which we discovered from satellite imagery and its correlation with data on topographic maps of Mongolia and China, moving along the "Wall of Chingis Khan" from west to east. We are unaware whether these structures have been studied by Mongolian and Chinese scholars and, in the event of that, what names they would have been given, although for our purposes here — to confirm the regularity in the system of walls and forts — that is neither here nor there. Therefore in the description we will stick to our own scheme, that is, provisionally naming each site by a nearby toponym.

The round Norovlin fort

Located practically at the very beginning of the "Wall of Chingis Khan," it is 3.8 km southwest of the *sum* center Norovlin in Mongolia along the automobile road connecting Bayan-Uul with Ondorhaan. The fort has been partially destroyed by the road but nonetheless can be seen in satellite images and located on a topographic map. Its type is that of the large Tsankyr, large Bugutur and large Koktui forts and has the shape of a perfect circle of about 150 m exterior diameter, inside of which is a square structure measuring about 40 x 40 m.

The fort is located about 250 m from the "Wall of Chingis Khan" and closes off the Shavart valley, which leads to the river Onon Gol. The source of fresh water and water for filling the ditch was apparently the river Ulz Gol.

The rectangular Norovlin fort

It is 4 km NNE of the *sum* center Norovlin and is not visible either in satellite images or on topographic maps. It was discovered in 2002 by the International UNESCO expedition. The fort is rectangular and is located 40 m from the "Wall of Chingis Khan." Its detailed description is in the introduction to this article.

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Further to the east 320 km along the "Wall of Chingis Khan" we have no reliable data about the existence and location of forts, on account of the absence of satellite photos of that territory with a resolution which would permit the identification of structures with 100% certainty. On topographic maps there are markings which correspond to the objects we seek and which have been confirmed directly de visu and from surface photographs. Nonetheless, we refrain from premature submission of unconfirmed information for that part of the wall. We will say a few words below about the possibility and locations of forts in that section.

The round Huiten-Heremt fort

This structure is 36.8 km southeast of the town of Mandal-Ovoo (Mongolia) and 2.3 km south of the lake Har nuur. The fort blocks the Huiten-Heremt valley 4 km from the "Wall of Chingis Khan" [Fig. 3]. Its type is identical with that of the round Norovlin fort and like it has the shape of a perfect circle with an inscribed rectangle. The exterior diameter of the wall is approximately 160 m. Its source of fresh water is the directly adjacent spring, Huiten bulag.

The rectangular Huiten-Heremt fort

The fort is located 37 km southeast of the town of Mandal-Ovoo (Mongolia) and 2.1 km south of the lake Har nuur [Fig. 3] and is part of a single complex paired with the round Huiten-Heremt fort. The structure is rectangular and of the same type as the small Urtui, Koktui and Tsankyr forts. Its straight-line distance from the "Wall of Chingis Khan" is 4.2 km. Right next to it is the permanent spring Huiten bulag.

The round Hezhemute fort

It is located 31.3 km NE in a direct line and 32.2 km along the "Chingis Khan Wall" from the round Huiten-Heremt fort. It blocks the valley Heremt-Holoi valley 5.7 km northeast of Mt. Gurban-Taolegai (China) and 1.9 km south of marker No. 635 on the Sino-Mongolian border [Fig. 3]. It is a perfect circle with an inscribed rectangle, a type that is identical with the structures already described. The exterior diameter is 168 m and the interior structure measures 53 x 52 m. The interior fortification is offset significantly into the southwestern sector of the surrounding wall and has a regular rhomboid shape. The straight-line distance of the fort from the "Wall of Chingis Khan" is 1.9 km. Close by is the freshwater well Hezhemute hudege (?= Ho-je-mu-t'ing hao-lai) which has a permanent water source.

The rectangular Hezhemute fort

The fort is 1.7 km southeast of the round Hezhemute fort and 5.1 km northeast of the peak of Gurban-Taolegai (China). The distance from the fort to the "Wall of Chingis Khan" is 3.6 km [Fig. 3]. The fort is identical to the previously described rectangular structures, measuring 45 x 45 m and square in shape.

The round Burtan fort

It is located in China 2.5 km. northeast of the peak of Ikhe-Haierkan uul and 3.4 km SE by E from the peak Baga-Haierkan uul [Fig. 3]. Its plan is a perfect circle with an inscribed rectangle. The exterior diameter of the structure is 150 m, and the interior structure is 45 x 45 m. At the corners of the interior fortification towers are clearly visible. The fort is 2.8 km from the "Wall of Chingis Khan," and from the preceding Hezhemute fort is 21.9 km in a direct line and 23.1 km along the wall. Not far from the fort is the lake Burtan nuur and a freshwater well.

The rectangular Burtan fort

This square fortification is in China, 0.9 km northeast of the round Burtan fort or 3.4 km northeast of the peak of Ikhe-Haierkan uul and 4.1 km northeast of the peak of Baga-Haierkan uul [Fig. 3]. The structure measures 58 x 58 m and its straight-line distance from the "Wall of Chingis Khan" is 2.4 km.

The round Odinokaia Fort

This fort is the easternmost structure discovered by us on the basis of cartographic material and satellite images. It is located in China 5.3 km west of the town of Odinokaia and 0.8 km. southwest of the peak of Ostraia on the right bank of the river Gen He. The fort, like the previously described Bugutur is situated directly on the "Wall of Chingis Khan" and is part of its structure. Its plan is that of a regular circle 110 m in diameter with an inscribed rectangle. It is identical with the similar structures which have been described above. The fort closes off the valley of the River Gen He, a right tributary of the River Argun.

Discussion

From the careful study of maps it is clear that the "Wall of Chingis Khan" encompasses a steppe region located between the upper reaches of the Rivers Onon and Argun extending from the end of one zone of the taiga to the beginning of another. This circumstance suggests that the wall was built to control the movement of nomads who lived in southern Transbaikalia.

The "Wall of Chingis Khan" is a truly grandiose structure, comparable to such prominent fortifications as Hadrian's Wall or the Great Wall of China. Huge resources were expended in its construction. It is not difficult to calculate that to construct one meter of such a wall would have required on the average (as a minimal approximation) around 10 m^3 of earth. Hence, the construction of an earthen embankment 746 km long would have required moving 7,460,000 m^3 of far from light steppe soil. If one takes into account that for a person in contemporary conditions using again contemporary tools, the physical norm is considered the movement of 7–8 m^3 a day, then to build the "Wall of Chingis Khan," apart from the construction of the ditch and strengthening (packing) of the wall, would have required 932,500 man-days of labor. It is clear that the to erect such structures would have taken an upper maximum of several decades. Hence the time for its construction should have been as short as possible. And this required

the marshalling of a huge amount of human resources and, what is especially important, large organizational and material expenditures to support and manage that "working army."

As indicated above, we have insufficiently complete information about the location of the forts along the wall on Mongolian and Chinese territory. Nonetheless, we can draw some conclusion about their purpose already. The research so far completed makes it possible to specify the basic regularities in the system of the relationship of the two types of fortification — the wall and the forts.

First of all, is the absolute identity of the structures, which reinforces the conclusion about the near simultaneous construction of them following a "single plan." The exception here is the large square Urtui fort, which possibly was not part of the wall and fort system.

Secondly, the absolute majority of the forts located along the "Wall of Chingis Khan" are in pairs — one round and the other rectangular. Possibly the rectangular and round forts had different functions. The round forts are nearer the wall or directly on it, the rectangular ones located at a distance from it. At present, part of the forts, especially the small rectangular ones, has been lost as a result of economic activity of the modern population. The information of Müller confirms this. He mentions (1937) the presence of forts not far from the village of Tsurukhaitui and in the valleys of the Karaganatu (the Bol'shoi Karganatui Valley) and in Kailassutu (the Kailastui Valley) in the vicinity of Kailastui village in Transbaikalia. The search for them in 2008-2009 came up empty-handed. One can then only conclude that they have been lost forever. The paired positioning of the forts noted in Transbaikalia is also observed in China and Mongolia, which bears witness to the regularity of their distribution (Table 2, pp. 120–21).

Thirdly, all the forts close off fairly sizeable valleys and are located in places suitable for long-term habitation. A criterion for them was the presence nearby of sources of water both for consumption and to fill the defensive ditches.

Fourthly, all the forts are located from between 6 and 30 km from each other, a fact which ensures effective communication in a time of necessity. This regular feature can be seen in connection with all the forts we have described. Taken together with such features as the presence of an enclosable valley, the proximity of running water and a fresh-water spring, one has the basis for predicting the location of paired forts along the "Wall of Chingis Khan" in the section of it we have not studied on the territory of Mongolia. Moreover, as noted above, we have some indirect data obtained from topographic sources.

In the course of studying the wall and the forts located along it we found gray ceramics stamped with comb-patterned decoration (by means of a cog-wheel with teeth which as a rule were wedge-shaped) [Fig. 4.2-5]. Similar ceramics are well known from Khitan sites in China (Ivliev 1986; Eisenhofer-Halim 1996; Lu 2008). This indicates that the fortifications in question were built under the Liao Empire (907-1125). Unfortunately, so far we have not been able to find in written sources any precise data about the date and reasons for the erection of the wall. The only mention relates to the final stage of the existence of the Liao Empire. The 7th book of the "Dailao guruni suduri" (a Manchu translation of the *Liao shi* [History of the Liao Dynasty]) says, "In the second year (of the reign of) Tianzuo (1112 CE), in the second moon, emperor Tianzuo set out to the river Huntuntszian to fish, after which, according to ancient custom, all the leaders of the wild Nüchih people came there to render obeisance: that is, those who lived about a thousand *li* from the line of the border" (Tiuriumina 2007, p. 118). In all probability the given passage is speaking about the wall we are studying. However, the task remains to date the construction and determine the purpose of the wall, and, as well, establish the considerations of foreign policy which might have governed the completion of such a huge undertaking.

Conclusion

Insofar as the wheel-made ceramics with a cog-wheel stamp are a marker of the period of the Liao Empire, it is logical to suppose that the wall and forts discussed here date from Khitan times. However, it is not quite so simple, since studies at the fort of Chintolgoi balgas in Bulgan aimak

in Mongolia have shown that despite the unform appearance of Khitan ceramic decoration, there, in addition to Khitans, were other ethnic groups — Bohai and possibly Jurchen and Chinese (Kradin and Ivliev 2008; 2009).

On Russian territory, the area of distribution of the given ceramics is limited to southeastern Transbaikalia. Finds of these ceramics are co-terminous with the "Wall of Chingis Khan" and its adjacent forts. It is logical to suppose that the area along the Argun River was the northwestern border of the Khitan state. Logically, the fortifications including the earthen border wall and the forts along its southern side would have been intended to guarantee control over that part of Inner Asia. However, to date there is still insufficient material to support a single interpretation of these large-scale structures. Excavations on a significant scale have yet to be undertaken either on the wall or in the forts.

Even among the authors of this article there is no single opinion at present concerning the purpose of the grandiose structure. Undoubtedly the wall could fulfill defensive purposes: the function of first-line defense and mobile intelligence about the movements of large groups of nomads. However the wall also marked the borders of the empire. In that case, the function of the series of forts built along the southern side of the "Wall of Chingis Khan" might have been different. They could be the border pickets called upon not to defend but to control the state boundary. The construction along the northeastern part of the Great Steppe of a system involving a wall as a boundary marker and fort-pickets could have been connected with the development of new political conceptions about the strengthening of the territory under state control by means of fortifications which had more of a symbolic than a defensive character.

— *translated from Russian by Daniel Waugh*

The study was supported by a Russian Foundation of Humanities grant #11-21-03001a/Mon and the Program of the of Russian Academy of Sciences "Historical and Cultural Heritage and Spiritual Values of Russia" (# 09-I- II25-03).

About the authors

Andrei V. Lunkov is a researcher at the Laboratory of Ancient Technology, Irkutsk State Technical University, Irkutsk. E-mail: <lunkov@sibarchcenter.ru>.

Dr. **Artur V. Kharinskii** is Professor and Head of the Laboratory of Ancient Technology, Irkutsk State Technical University, Irkutsk. E-mail: <kharinskiy@istu.edu>.

Dr. **Nikolai N. Kradin** is Professor of the Institute of History, Archaeology and Ethnology of the Far Eastern Branch of the Russian Academy of Sciences, and Head of the Department of World History, Archaeology, and Anthropology of the Far Eastern Federal University, Vladivostok. E-mail: <kradin@mail.ru>.

Dr. **Evgenii V. Kovychev** is Professor of the Transbaikal State University, Chita. E-mail: <kovychevevgenyi@mail.ru>.

References

Alkin 2001

Sergei V. Alkin. "Istoriia izucheniia i sovremennye predstavleniia o vremeni sooruzheniia 'Vala Chingis-khana' [The History of the Study and Contemporary Ideas about the Date of the Construction of the 'Wall of Chingis Khan']" In: *Shirokogorovskie chteniia (problemy antropologii i etnologii)*. Vladivostok: Izd-vo. Dal'nevostochnogo un-ta, 2001: 60–63.

Baasan 2006

Tüdeviin Baasan. *Chingisiin Dalan gezh iuu ve?* [What is the Chingis Wall?]. Ulaanbaatar: "Admon," 2006.

Chichagov et al. 1995

Valerii P. Chichagov, O. A. Chichagova, A. E. Cherkinskii, and B. Avirmid. "Novye dannye o vozraste 'Vala Chingiskhana'" [New Evidence about the age of the 'Wall of Chingis Khan']. *Izvestiia Rossiiskoi akademii nauk. Seriia geograficheskaia* 1995/1: 97–106. [*English translation*: New Data on the Age of the "Genghis Khan Rampart" in Northeastern Mongolia (from Radiocarbon Dating of Humus of Young and Old Soils), *Transactions Doklady – Russian Academy of Sciences Earth Science Sections*, 336, no. 4 (1995): 132–39].

Eisenhofer-Halim 1996

Hannelore Eisenhofer-Halim. *Die Keramik als charakteristisches Phänomen der Liao Kultur (907-1125) in China*. Frankfurt-am-Main etc.: Peter Lang, 1996.

Ivliev 1983

Aleksandr L. Ivliev. "Gorodishcha kidanei" [Forts of the Khitans]. In: *Materialy po drevnei i srednevekovoi arkheologii iuga Dal'nego Vostoka SSSR i smezhnykh territorii. Sbornik nauchnykh trudov*. Vladivostok: DVNTsANSSR, 1983: 120–133.

Ivliev 1986

Aleksandr L. Ivliev. "Khoziaistvo i material'naia kul'tura kidanei vremen imperii Liao" [The Economy and Material Culture of the Khitans in the Period of the Liao Empire]. Unpublished *kandidat* dissertation. Vladivostok: Institut istorii, arkheologii i etnografii, Dal'nevostochnyi nauchnyi tsentr Akademii nauk SSSR, 1986.

Kiselev 1958

Sergei V. Kiselev. "Drevnie goroda Zabaikal'ia" [Ancient Cities of Transbaikalia]. *Sovetskaia arkheologiia* 1958/4: 107–19.

Kirillov and Kovychev 2002

Igor I. Kirillov and Evgenii V. Kovychev. "Kidanskie drevnosti Priargun'ia" [Khitan Antiquities in the Area around the Argun River]. *Arkheologiia i kul'turnaia antropologiia Dal'nego Vostoka i Tsentral'noi Azii*. Vladivostok: Dalnauka, 2002: 245–52.

Kovalev 2008

Aleksei A. Kovalev. "Velikaia tangutskaia stena" [The Great Wall of the Tanguts]. In: *Teoriia i praktika arkheologicheskikh issledovanii*, 4. Barnaul: Izd-vo. Altaiskogo un-ta, 2008: 103–16.

Kradin and Ivliev 2008

Nikolay N. Kradin and Alexander L. Ivliev. "Deported nation: the fate of Bohai people of Mongolia." *Antiquity* 82 (2008): 438–45.

Kradin and Ivliev 2009

Nikolay N. Kradin and Alexandr L. Ivliev. "The Downfall of the Bohai State and the Ethnic Structure of the Kitan City of Chintolgoi Balgas, Mongolia." In: *Current Archaeological Research in Mongolia. Papers from the First International Conference on "Archaeological Research in Mongolia" held in Ulaanbaatar, August 19th–23rd, 2007*. Ed. Jan Bemmann et al. Bonn Contributions to Asian Archaeology 4. Bonn: Vor- und Frühgeschichtliche Archäologie, Rheinische Friedrich-Wilhelms-Universität, 2009: 461–75.

Kropotkin 1876

Petr A. Kropotkin. *Issledovaniia o lednikovom periode*. Zapiski Russkogo geograficheskogo obshchestva. Po obshchei geografii, 7. S.-Peterburg, 1876.

Lu 2008

Lu Jing. "Liao ceramics between 907 AD and 1125 AD in Northern China." Unpublished PhD. dissertation. Tübingen: Eberhard-Karls-Universität, 2008 <http://tobias-lib.ub.uni-tuebingen.de/volltexte/2008/3483>.

Miller 1937

Gerard Fridrikh Miller [Müller]. *Istoriia Sibiri* [The History of Siberia], 1. Moskva: Izd-vo. Akademii nauk SSSR, 1937.

Ochir et al. 2005

Ayudai Ochir, A. Enkhtur, L. Erdenebold. "Iz issledovaniia kidanskikh gorodov, gorodishch i drugikh sooruzenii v Mongolii" [On the Study of Khitan Towns, Forts, and Other Constructions in Mongolia]. In: *Dinamika liudei, veshchei i tekhnologii na Severo-Vostochnoi Azii v srednie veka / Movement in Medieval North-East Asia: people, material goods, technology*. Vol. 1. Vladivostok: Institut istorii, arkheologii i etnografii, Dal'nevostochnogo otdeleniia RAN, 2005: 101–10.

Perlee 1961

Kh. Perlee. *Mongol ard ulsyn ert, dundad ueiin khot suuriny tovchoon* [A short history of ancient and medieval cities and settlements on the territory of the Mongolian People's Republic]. Ulaanbaatar: Ulsyn khevleliin khereg erkhlekh khoroo, 1961.

Ponosov 1941

Vladimir V. Ponosov. "The Results of Preliminary Investigation of so-called 'Chingiskhan

Rampart».” *Tairiku Kagakuin ihō / Bulletin of the Institute of Scientific Research, Manchoukuo* 5/2 (1941): 171–77.

Potanin 1898

Grigorii N. Potanin. *Puteshestviia G. N. Potanina po Kitaiu, Tibetu i Mongolii* [The Travels of G. N. Potanin in China, Tibet and Mongolia], ed. M. A. Lialina. S.-Peterburg: Izd-vo. A. F. Devrena, 1898.

Pozdneev 1897.

Dmitrii M. Pozdneev. *Opisanie Manchzhurii* [A Description of Manchuria]. Vol. 1. S.-Peterburg: Tip. Iu. N. Erlikh, 1897.

Shirokogorov 1919.

Elizaveta N. Shirokogorov “Severo-Vostochnaia Manchzhuriia (geograficheskii ocherk po dannym marshrutnykh nabliudenii)” [Northeastern Manchuria (a geographical sketch based on expedition observations)]. *Uchenye zapiski Istoriko-filologicheskogo fakul'teta v g. Vladivostoke* 1 (1919): 111–55.

Sun et al. 2001

Sun Xiuren 孙秀仁, Tan Yingjie 谭英杰, Zhao Hongguang 赵虹光, and Gan Zhiпeng.干志耿. 黑龙江区域考古 *Heilongjiang guyu kaogu* [Archaeology of the Heilongjiang Region]. Shenyang, 1991.

Tiuriumina 2007

Liudmila V. Tiuriumina, tr. and commentary. *Istoriia Zheleznoi imperii* [History of the Iron Empire], ed. V. E. Larichev. Novosibirsk: Institut arkheologii i etnografii SO RAN, 2007 [translation of the *Liao shi* from a Manchu version of the text].

Table 2. Topographic and site plan characteristics of forts located along the "Wall of Chingis Khan"

Name	Location	Plan of site	Exterior measurements of wall	Distance from the "Wall of Chingis Khan"	Straight-line distance to next fort	Distance along the wall to next fort	Presence of nearby water source	Fresh water	Presence of a valley blocked by the fort	Country
Round Norovlin	3.8 km SW of *soum* center Norovlin, Mongolia, along Bayan-uul to Uder-Han road		D 150 m	250 m	?	?	R. Uldza-gol, 600 m	R. Uldza-gol	Shavart valley (where enters Onon gol)	Mongolia
Round Huiten-Heremt	36.8 km SW of town of Mandal-Ovoo, Mongolia, 2.1 km S of lake Har nuur		D 160 m	4 km	Hezhemute, 31.3 km NE	Hezhemute, 32.2 km	L. Har nuur, 2100 m	Huiten bulag spring	Huiten-Heremt valley	Mongolia
Rectangular Huiten-Heremt	37 km SW of town of Mandal-Ovoo, Mongolia, 2.2 km S of lake Har nuur		45 × 45 m	4.2 km	Hezhemute, 33 km NE	Hezhemute, 32.2 km	L. Har nuur, 2200 m	Huiten bulag spring	Huiten-Heremt valley	Mongolia
Round Hezhemute	5.7 km SE of peak Gurban-Taolegai (China), 1.9 km S of Sino-Mongolian border marker No. 635		D 168 m	1.9 km	Burtan, 21.9 km NE	Burtan, 23.1 km	L. Hezhemute nuur, 630 m	Hezhemute-hudege well	Heremt-Holoi valley	China
Rectangular Hezhemute	5.1 km SE of peak Gurban-Taolegai (China), 3.5 km S of Sino-Mongolian border marker No. 635		45 × 45 m	3.59 km	Burtan, 21.5 km NE	Burtan, 22 km	L. Hezhemute nuur, 900 m	Hezhemute-hudege well	Heremt-Holoi valley	China
Round Burtan	2.5 km SE of peak Ikhe-Haierkan uul (China), 3.4 km SE by E of peak Baga-Haierkan uul (China).		D 150 m; interior 40 × 40 m.	2.8 km	Bugutur, 51 km NE	Bugutur, 51.3 km	L. Burtan nuur, 310 m	well 300 m	valley	China
Rectangular Burtan	3.4 km SE of peak Ikhe-Haierkan uul (China), 4.1 km E of peak Baga-Haierkan uul (China).		58 × 58 m	2.3 km	Bugutur, 50 km NE	Bugutur, 50.8 km	L. Burtan nuur, 250 m	well 1.3 km	valley	China
Bugutur	8.8 km E of town of Zabaikal'sk, in Bugutur Valley, 2.3 km NNE of Sino-Russian border beacon No. 61, alongside a pumping station		D 170 m	0 (on the wall)	Kuladzha, 13.7 km SE	Kuladzha, 12.5 km SE	unnamed stream	well?	Bugutur valley	Russia

Kuladzha	Kuladzha valley, 2.5 km S of town of Kuladzha, 3 km NNW of Sino-Russian border beacon No. 63		D 200 m	4.8 km	Koktui forts, 8.8 km NE	Koktui forts, 6.3 km	stream	well 9 km SE	Kuladzha valley	Russia
Large Koktui	Koktui valley, 6.9 km NE of town of Kuladzha, 11.1 km SW of town of Abagaitui		D 155 m	225 m	Round Tsankyr, 24 km NE	Round Tsankyr, 24.6 km	unnamed stream	unnamed stream	Koktui valley	Russia
Small Koktui	Koktui valley, 7.2 km NE of town of Kuladzha, 10.7 km SW of town of Abagaitui		45 × 46 m	600 m	Round Tsankyr, 23.7 km NE	Round Tsankyr, 23.9 km	unnamed stream	unnamed stream	Koktui valley	Russia
Large Tsankyr	Tsankyr valley, 8.8 km NE of Abagaitui spring, 8.6 km NNW of town of Brusilovka		D 153 m	216 m	Round Urtui, 15.8 km NW by W	Round Urtui, 15.2 km	Brusilovka stream	springs, brooks	Tsankyr valley	Russia
Small Tsankyr	Tsankyr valley, 8.1 km NE by E of Abagaitui spring, 4.6 km N of town of Brusilovka		45 × 46 m	3.5 km	Round Urtui, 16.1 km NW	Round Urtui, 16.2 km	Brusilovka stream	springs, brooks	Tsankyr valley	Russia
Large Urtui	Urtui valley, 5 km NNW of town of Srednearguns k, 13.8 km SW of town of Kailastui		D 158 m	2.2 km	fort in Karagantui valley (now lost), 15.5 km NW	?	stream	springs, brooks	Urtui valley	Russia
Large Square Urtui	Urtui valley, 3.5 km NW of town of Srednearguns k, 14 km SW of town of Kailastui		110 × 110 m	4 km	fort in Karagantui valley (now lost), 15.5 km NW	?	stream	springs, brooks	Urtui valley	Russia
Small Urtui	Urtui valley, 2 km NW of town of Srednearguns k, 15 km SW of town of Kailastui		27 × 26 m	5.4 km	fort in Karagantui valley (now lost), 15.5 km NW	?	spring	springs, brooks	Urtui valley	Russia
Odinokaia	5.3 km W of town of Odinokaia (China), 0.8 km from peak Ostraia (China), right bank of river Gen He		D 110 m	0 (on the wall)	?	?	R. Gen He, 180 m	R. Gen He	Gen He river valley	China