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## The northern border of the Tangut state, XiXia: According to the archaeological evidence and written sources

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### I . Research in historical geography on the XiXia North border

In studies on the geography of the state of XiXia 西夏, the problem of the localization of its northern border and occupation of the northern borderland is discussed only very briefly or is not dealt with at all. The paper by Du Jian-lu [Du 1993], presenting a review of frontier posts and strongholds of XiXia after historical sources is limited by description of the situation only at the southern Song 宋 border. In the article "Study of the territory of XiXia" of 1999, as well as in the respective section of the summarizing work on the geography of the Tangut state published by a collective of authors in 2002, Liu Ju-xiang [Liu 1999] has limited the description of its northern frontier by citations only from "Yuan shi" 元史 indicating the directions of the invasions of Mongol armies in the early 13<sup>th</sup> century. Another expert from Ningxia, Lu Ren-yong, in his works including also a special section of the monograph "XiXia TongShi" devoted to the territorial structure of the Tangut state, evades the question about the northern border of XiXia although he includes the entire Alashan Desert and Transaltay Gobi in his maps of the XiXia territory [Lu Ren-yong 2003]. In the last monograph, judging from its subtitle, devoted primarily to "investigations of the historical geography of frontier districts" of XiXia, its author, Yang Rui, comes to the conclusion that the borderline from the *HeiShui ZhenYan* 黑水鎮燕監軍司 to supervisory military ad-

ministration *HeiShan WeiFu* 黑山威福監軍司 was an "empty zone", indefinite and "unclear" border, while the main defensive fortifications and customs offices were located in the depth of the territory of the Tanguts; at the same time he leaves open the question of the localization of the northern border farther westwards [Yang Rui 2008: 80–108].

It must be noted that rather detailed information about the northern border of the state of XiXia is so far available to us only from a map of the 11<sup>th</sup> century known through its copies included in a series of works of the Qing time 清 (further referred to as "XiXia DiXingTu (Topographic map of XiXia)" 西夏地形圖 (Fig. 1) [Kychanov 1959; *id.* 2008: 59–70; Zhang Jian 1998]. In it, there are marked supervisory military administrations *XeiShui ZhenYan* 黑水鎮燕, *BaiMa QiangZhen* 白馬強鎮 and *HeiShan WeiFu* 黑山威福 distributed along the northern border, the administrative centres of the *Gan-Su* corridor situated to the west of them, mountains and other geographical objects in the Alashan desert, approximate borders with the Uigurs and Mongol tribes (*Dada* 韃靼, Tatars), as well the road passing from *HeLanShan* mountains 賀蘭山 directly to *HeiShuiCheng* 黑水城 (administrative centre of *HeiShui ZhenYan*, Khara-Khoto) (Fig. 2).

Within the scope of the present paper it is unnecessary to discuss in detail the localization of the supervisory military administration *HeiShui ZhenYan*, the centre of which, on the basis of numerous written sources, is considered to have been the stronghold now called *HeiChengZi* 黑城子 or Khara-Khoto, rebuilt in the Yuan period as an administrative centre of the *YiJiNai lu* 亦集乃路. In the course of excavations at this fortified settlement it was defined that the Tangut fortifications properly occupy its north-eastern area measuring 238 × 238 m in plan [Guo & Li 1987]. Twenty kilometres to the east from Khara-Khoto there is another Tangut fortified settlement — *LuCheng* 綠城 measuring 180 × 150 m in plan; excavation of this fortress and of a cemetery associated with it have yielded numerous artefacts dated to the middle and late periods of the existence of the state of XiXia, including incunabula of Buddhist sutras, manuscripts, seals, and coins [Shi & Weng 1996]. There is an evident need for a historical identification of this settlement only

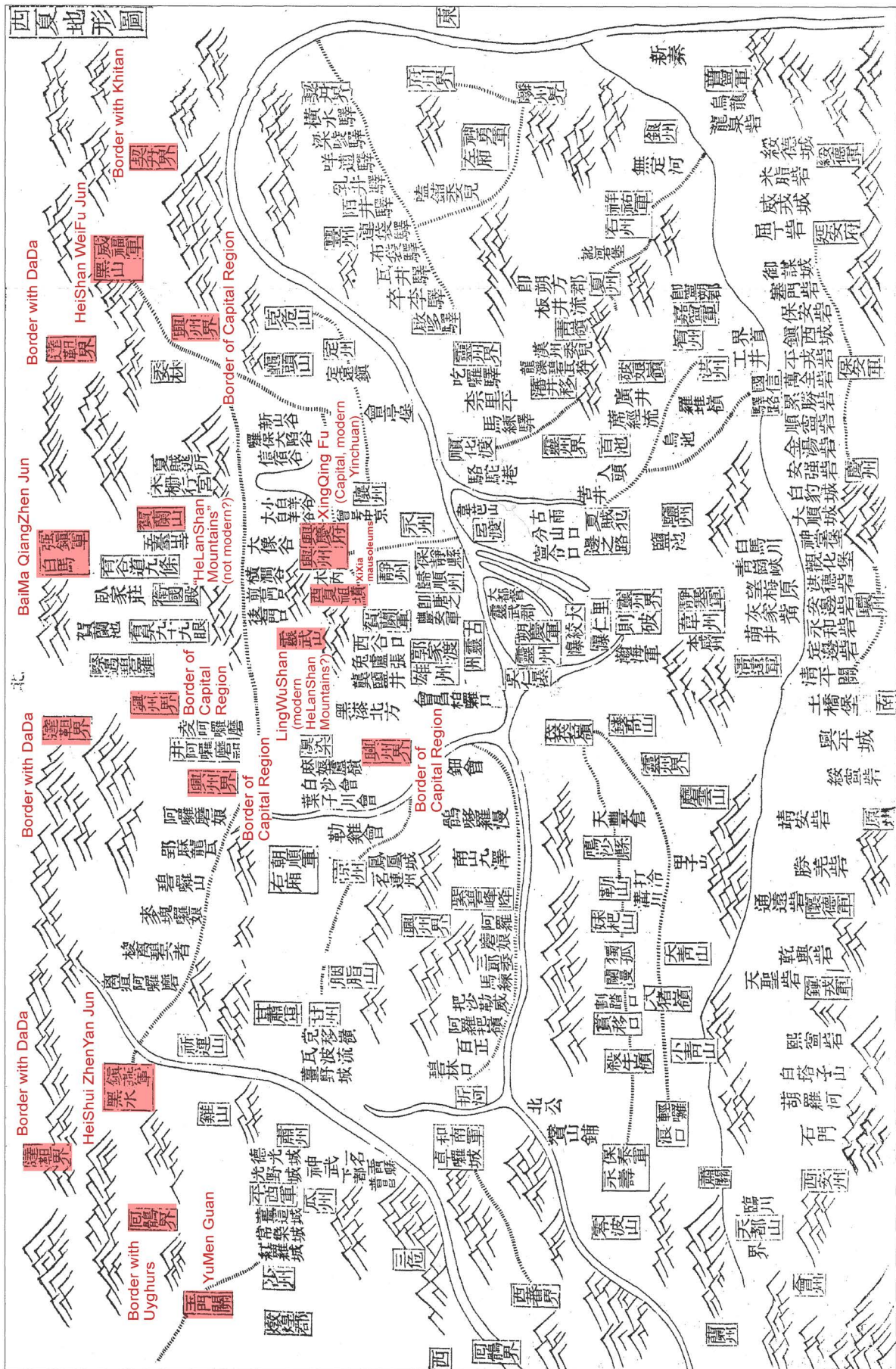


Fig1. Topographic map of XiXia (XiXia DiXingTu 西夏地形圖)

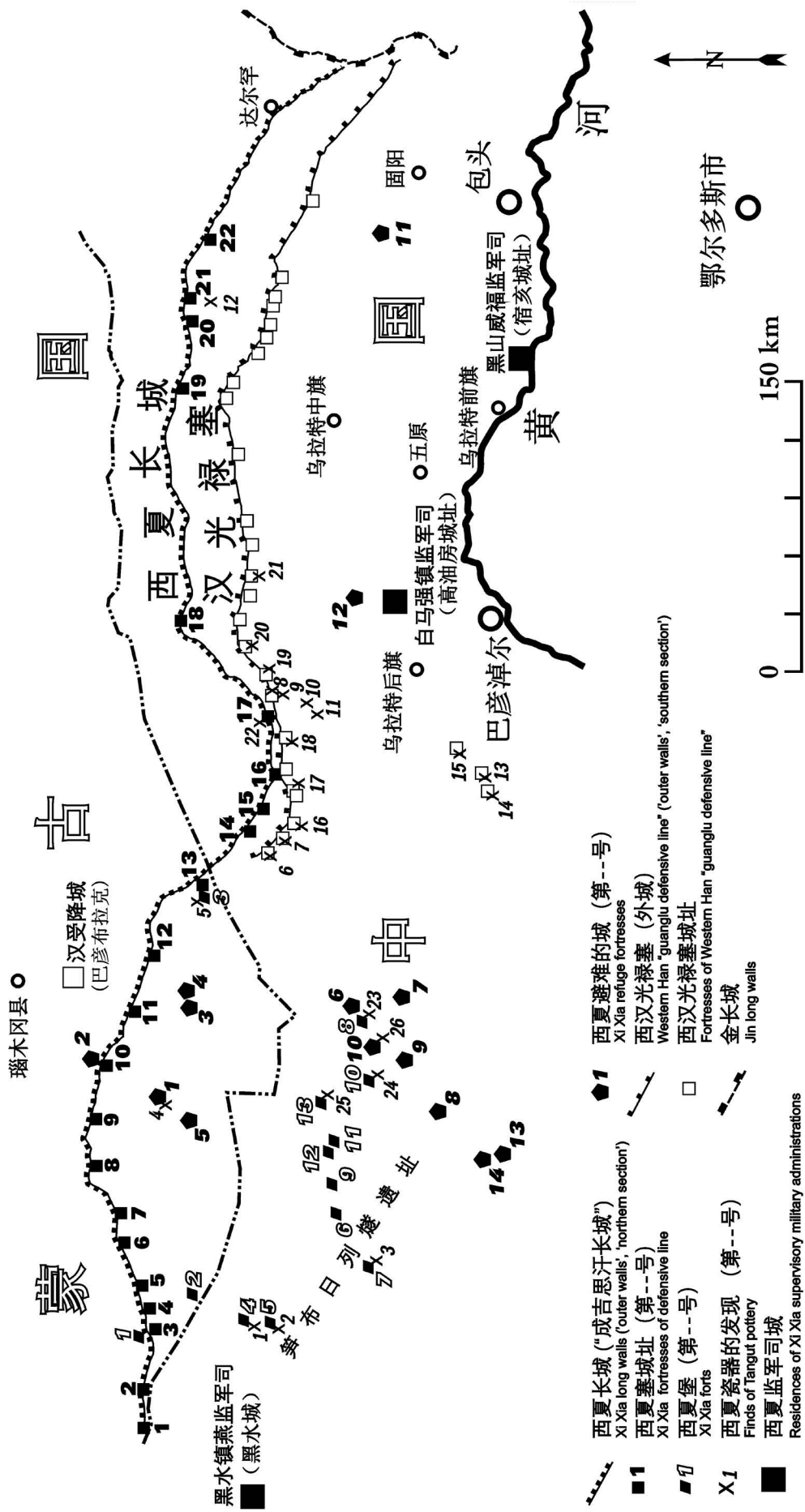


Fig2. Map on the northern borderlands of XiXia

little inferior to the Tangut Khara-Khoto in area. Investigations of Folke Bergman demonstrated that there are mediaeval artefacts encountered on the ruins of many fortifications in the territory of Edzina banner 額濟納旗 to the south of lake Gashun-nur [Sommarström 1956–58: 386, ill.]. However, basing on the results of expeditions of the Institute of the Cultural Heritage and Archaeology of the *GanSu* Province, Wu Reng-xiang dates to the Han period practically all the fortifications along the Edzin-gol river [Wu Reng-xiang 2005:132–170]. To the south of Lake Gashun-nur, archaeologists of Inner Mongolia have investigated the ruins of ritual Buddhist structures of the Tangut period [Niu 2007:121–123; National cultural heritage administration: 641]. It is, however, impossible to trace the borderline of XiXia in the area of Lake Gashun-nur on the basis of so scanty evidence.

A paper of Tang Kai-jian published in 1988 attempted to localize more precisely the supervisory military administration *BaiMa QiangZhen* 白馬強鎮監軍司 situated between the supervisory military administrations *HeiShui ZhenYan* 黑水鎮燕 and *HeiShan WeiFu* 黑山威福. Through comparison of the information from the "Song shi" 宋史, Song work "Xu ZiZhiTongJian Chang Bian" 續資治通鑑長編 and the compendium "XiXia Shu Shi" 西夏書事 of Qing period, this author arrives to the conclusion that this supervisory military administration occupied the areas to the west and north-west of the *HeLanShan* mountains, i.e. southwards from their situation marked in the Song map<sup>1</sup> [Tang Kai-jian 1988:142–144].

(1 It should be noted that on the "XiXia DiXingTu" map the name of the *HeLanShan* Mountains 賀蘭山 is not at all in the place where, according to written sources, the *HeLanShan* Mountains were located, but much further north (see Fig. 1). And these "northern" mountains are not the mountains that are called today *HeLanShan*. According to "Sui shu" 隋書, the *HeLanShan* Mountains were located in the *LingWu* 靈武 district; "YuanHe JunXian Tu Zhi" 元和郡縣圖志 of Tang period 唐 says that the *HeLanShan* Mountains are in the west of the county 爭靜 of *Lingzhou* province 靈州 [Shi Wei-le 2005: 2022]. This coincides on the "XiXia DiXingTu" map with the location of the "LingWu Shan" mountains 靈武山. This map indicates that at the eastern foot of mountains named "LingWu Shan" 靈武山 the capital of XiXia is situated, as well as the cemetery of XiXia emperors. Barrage posts are shown on this map

Owing to a find from the former territory of XiXia of an inscription on a stone block mentioning earlier unknown supervisory military administration *Mi'E zhou* 彌娥州, it was supposed that this supervisory military administration was localized near the river *MiE* 彌娥川 flowing, according to the information from the Song work "TaiPing HuanYu Ji" 太平寰宇記 (late 10<sup>th</sup> century) to the south "from the desert" and one thousand li to the north from the centre (of what then was the *LingZhou* 靈州), i.e. in the west of the modern Urad Rear banner 烏拉特后旗 of Inner Mongolia [Li Chang-xian2003: 111]. If such a localization is accepted, then the supervisory military administration *Mi'E zhou* 彌娥州 turns to have been roughly in the place of the supervisory military administration *BaiMa QiangZhen* 白馬強鎮 marked in "XiXia DiXingTu" map; this fact raises a question about the possible identification of the supervisory military administrations *BaiMa* and *Mi'E*.

In the "XiXia DiXingTu" map the supervisory military administration *HeiShan WeiFu* is indicated northward of the bend of the *Huang He* 黃河. However, because according to *juan* 60 ("DiLiZhi 3" 地理志三) of the "Yuan shi" 元史, the name "HeiShan" 黑山 belonged to the modern mountains *BeiLongShouShan* 北龍首山 situated in the former territory of *ZhangYe* 張掖 county (now in *ShanDan* county of the *GanSu* province 甘肅山丹), it was proposed to localize also the supervisory military administration *HeiShan WeiFu* exactly here, to the south of Khara-Khoto [Wang Bei-chen 2000: 386]. This hypothesis, among the others, is represented in the "Great dictionary of historic place names in China" [Shi Wei-le 2005: 2554]. The latest article with a grounded detailed critique of this localization belongs to Bao Tong: indeed, if the fortress *WuLaHai* 兀刺海 (斡羅孩) (*WoLuoHai*, *Oui-ra-ca*) was, supposedly, the centre of this supervisory military administration, then accepting its situation "southwards" relative Khara-Khoto, it would be impos-

on the northern side of these mountains, and the mountains themselves are situated within the capital region. Therefore, the mountains on the "XiXia DiXingTu" map called "LingWu Shan" are most likely the present-day *HeLanShan* mountains, known in ancient times under the same name. The name *HeLan Shan* on the "XiXia DiXingTu" map was placed to the north of them mistakenly.

sible to assert that the Mongols forced in 1209, as "*Yuan shi*" informs us, their way to *HeXi* 河西 through the pass "to the north from *HeiShuiCheng* (Khara-Khoto) and to the west from *WuLaHai*"<sup>2</sup> [Bao Tong 1994]. Bao Tong supposes that *Heishan* (Black mountains) was the name of the mountains now called *DaQingShan* 大青山 and *WuLaShan* 烏拉山, situated northward of Ordos, while the administrative centre of the supervisory military administration *HeiShan WeiFu* was situated in the place of the Yuan fortress in 2 km northwards of modern *XinHuRe* township 新忽熱鄉 of Urad Middle banner. Indeed, this fortress, in terms of its dimensions (850 × 800 m), corresponds to other known Yuan administrative centres of 'lu' 路 (regions): *YingChang lu* centre 應昌路城 — 650 × 800 m, *DeNing lu* centre 德寧路城 — 960 × 574 m [Li Yi-you 1986: 106], whereas in the Yuan time in the territory of XiXia the district of *WuLaHai*, in particular, was founded, the centre of which could have coincided with the Tangut fortress of the same name (from *juan* 93 of "*Yuan shi*"<sup>3</sup>). However, along with the fortified settlement of *XinHuRe*, where artefacts of exclusively Yuan period have been found, a 'candidate' for the role of Tangut *WuLaHai* now seems to be the fortress *GaoYouFang* 高油房 (in modern *LinHe* city 臨河), as well as fortress *SuHai* 宿亥 in Urad Front banner and fortress *LangShanKou* 狼山口 in Urad Rear banner, which have larger dimensions and are dated undoubtedly to the pre-Yuan period (see below). A review of the discussion about the localization of *WuLaHai* continuing in the scientific publications already for a century is presented in an article by Yu Jun; in addition to the "southern" and "north-eastern" localization, in connection with the diversity of the names of this administrative point, also a hypothesis has appeared that the sources mention two different fortresses in different places to the north of the bend of the *Huang He*, one of them having been *WuLaHai* and the other — the administrative centre of *HeiShan WeiFu* [Yu Jun 2000: 30–32].

In 2003, Li Chang-xian published the most comprehensive work about the borders of the Tangut state

(2「太祖四年 [1209 CE], 由黑水城北兀刺海西關口入河西, 獲西夏將高令公。」(『元史』卷 60, 志 第十二, 地理志)  
 (3「[中統] 八年, 又定西夏中興路、西寧州、兀刺海三處之稅, 其數與前僧道同。」(『元史』卷 93, 志 第四十二, 食貨一)

throughout all the periods of its existence (mainly after written sources) [Li Chang-xian 2003: 110]. Basing on the data from "*Xu ZiZhiTongJian ChangBian*" 續資治通鑑長編 and "*XiXia DiXingTu*", he localizes the supervisory military administration *HeiShan WeiFu* in the region to the north-east from the *Huang He* bend and confirms the identification of its administrative centre as the fortress of *WuLaHai*. In his opinion the latter must have been situated near the pass in the mountains now called of *LangShan* 狼山 (which incidentally coincides with the situation of the fortified settlements of *GaoYouFang* 高油房 and *LangShanKou* 狼山口). Li Chang-xian presents the evidence from written sources about the localization of supervisory military administrations *XiPing* 西平, *GanSu* 甘肅, *YouXian ChaoShun* 右廂朝順, and *ZhuoHeNan* 卓和南 situated along the northern borders of the *GanSu* corridor, as well as information about other administrative centres of XiXia in western *GanSu* but, unfortunately, this information concerns only the *GanSu* corridor and is not related to the territories of the Alashan desert and Transaltai Gobi desert. Therefore, the northern border of XiXia, both in the maps from the abovementioned work "*XiXia TongShi*" and in the maps by Li Chang-xian [Li Chang-xian 2003: figs. 1–3] drawn along the border of modern Mongolia remains only a fantasy.

Comparing the information by Rashid-ad-Din, "*Yuan shi*", and "*XiXia ShuShi*", Bao Tong arrives at the conclusion that the fortresses mentioned there as *Ligili* – *LiJiLi* 力吉里寨, *Klin-Loshi* – *JingLuoSi* 經落思城 and *QiLinGuChe* 乞鄰古撤 attacked by the Mongolian troops in the beginning of the 13<sup>th</sup> century must have been located somewhere at the northern frontier of the Tangut regions *ShaZhou* 沙州, *GuaZhou* 瓜州 and *SuZhou* 肅州 [Bao Tong 1994: 65–67]. Yu Jun presents a review of different opinions of scholars about the location of these fortresses [Yu Jun 2000: 29–30]. However these studies have not helped as yet to define the northern border of XiXia in Transaltay Gobi: indeed, it is not possible to tie even hypothetically the abovementioned names with any settlement sites or known geographical points.

## II . Archaeological investigations of XiXia North borderland in late 20<sup>th</sup> – early 21<sup>st</sup> centuries

Beginning with the 1970s, new archaeological evidence on the occupation of the northern limits of the XiXia state started to appear. In 1985, there was published a report about precious objects of the Song period found in 1950–60s at the fortified settlement *GaoYouFang* 高油房 (measuring 900 × 900 m in plan, situated in the *LinHe* city district, 40 km to the north-east from the its centre). The authors of the publication linked this settlement with the abovementioned fortress of *WuLaHai* (=WoLaHai) which in their opinion was the centre of the administrative district *HeiShan WeiFu* [Lu Si-xian 1987]. In the 1980s, along with the site of *GaoYouFang*, the bodies of the protection of the cultural heritage of Bayannur prefecture-level city of Inner Mongolia, to the north of the bend of the *Huang He*, discovered still other two large fortified towns, presumably belonging to the state of XiXia [Du Yu-bing 1998: 375–376]. The *SuHai* 宿亥 town, situated 40 km to the east from the centre of Urad Front banner, is surrounded with earthen walls up to 5 m high; on the south, it is disturbed by the river but its northern wall, 700 m long, was completely preserved at the moment of the investigation. During the examination of the site, were found numerous coins of the Tangut period. *LangShanKou* 狼山口 fortified town is situated "6 km to the south from the pass in the mountains *LangShan* 狼山", judging from the description, in the territory Urad Rear banner, about 30–40 km to the west from the site of *GaoYouFang*. This settlement is of rectangular plan, 300 m from north to south and 110 m from west to east. The elevated northern half of the fortress is separated by an internal wall and has additional defences. Within the settlement limits, remains of the buildings and pottery of the Tangut period were found. Basing on the evidence of the map "*XiXia Di XingTu*", Du Yu-bing identifies the fortified town Gaoyoufang as the administrative centre of supervisory military administration *BaiMa QiangZhen* 白馬強鎮, and the site of Suhai — with the administrative centre of supervisory military administration *HeiShan WeiFu* 黑山威福 [Du Yu-bing 1998: 374–379] (Fig. 1). The location of these settlements, indeed, best coincides

with the evidence of the Song map but, pitifully, the information about the fortresses of *SuHai* and *Langshankou* has not been included into the "*Atlas of the cultural heritage of Inner Mongolia*" and the results of the mentioned studies of 1980s have not been published, so that it seems impossible to verify the Tangut attribution of these fortified sites.

"*The atlas of the cultural heritage of Inner Mongolia*" published in 2003 contains information about the finds of Tangut pottery at the ruins of ancient fortifications in Bayangnoer city district, Alashan league and in the Baotou city district. The authors who compiled the atlas date these fortifications mainly to the Han period and suppose that they were only re-used by the Tanguts if even no more ancient artefacts have been here revealed [National cultural heritage administration 2003: 56–75, 615–642]. The fortified settlement Gaoyoufang, as mentioned above, was identified in the atlas as the fortress *WuLaHai* 兀刺海 and, correspondingly, as the administrative centre of supervisory military administration *HeiShan WeiFu* 黑山威福 [National cultural heritage administration 2003: 615]; the much smaller (60 × 40 m) fortress *XiBoTu* 希勃圖 (39° 49.815' N, 105° 31.495' E) situated near *JiLanTai* 吉蘭泰鎮 in the territory of Alashan Left banner, 60 km to the north from the *HeLanShan* mountains is for some reason interpreted as the administrative centre of supervisory military administration *BaiMa QiangZhen* 白馬強鎮 [National cultural heritage administration 2003: 631; Du Yu-bing 1998: 377]. Alexey Kovalev objects strongly to this hypothesis because, judging from the description, we are dealing here just with an ordinary frontier fort. In 2014, this fortress was inspected by historical geographer Zhang Douyong. He came to the same conclusion that such a small fortress could not be the administrative center of the supervisory military administration. However 80 km south-west of mentioned fortress, during the same trip, a much larger rectangular fortress — about 240 × 240 m in plan, called *Chagankerimu* 查干克日木 (39° 29.150' N, 104° 39.170' E) - was observed by him. No artifacts associated with this fortress were found, despite this, Zhang Dou-yong declared it to be the center of the supervisory military administration *BaiMa QiangZheng* 白馬強鎮 [Zhang Duo-yong 2015; Zhang & Zhang 2015:

339–341]. He proceeded from the above mentioned idea of Tang Kai-jian that the administrative center of *BaiMa QiangZheng* should be located North-West of the *HeLanShan* Mountains [Tang Kai-jian 1988: 142–144; Li Chang-xian 2003: 110]. In addition, he believes that the *BaiMa QiangZheng* was renamed to the *XiYuan* 西院 commandery situated nearby centre of XiXia, which does not find clear evidence in written sources. However this idea contradicts the data of the *Song* map "*XiXia DiXingTu*", on which *BaiMa Qiangzhen* is located much further to the north. In addition, the architecture of the Chagankerimu fortress 查干克日木 is more correspond with the Han time than the Song period. This fortress has a rectangular barbican 30 m long, 20 m wide, very similar particularly to the barbican of the Han *JiLu* fortress 鷄鹿 (Fig. 10: 11). In Google Earth satellite photo we can see 1 km southwestwards of this fortress other rectangular structure *ca.* 430 × 430 m in plan, likely place for temporary camp of army troops. Walls of this camp place orientes strictly to the cardinal points, not like XiXia long wall earthen fortresses oriented with corners to the cardinal points (see below). These fortress and camp place most likely were built in the reign of Han emperor *Wu-di* 武帝 to be used as a base for the offensive of Chinese troops from the districts *BeiDi* 北地, *LongXi* 隴西 or *DingXiang* 定襄 to the Xiongnu. In addition, here could be located the command of the Han troops, which were stationed on dozens of watch- and signal towers, the rows of which stretch from the *LangShan* mountains to the *YaBuLai* mountains 雅布賴 through the territory of both Alashan banners [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 11-38, 54–75]. It must also be said that the description of this fortress is not included in the report of archaeologists on the survey of the Alashan League [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016], perhaps because they do not know to what period it can be attributed (in published report this location signed on the map of XiXia period but not mentioned in text)?

In 1980–2000s, archaeologists of the NingXia Hui autonomous region revealed, in the *HeLanShan* mountains 賀蘭山, Tangut defensive fortifications and watchtowers [Xu & Wang 1986; Niu Da-sheng 2007: 120–121], as well as, presumably, fragments of long walls reconstruct-

ed in the Ming period [Du Yu-bing 1998: 377]. Unfortunately, at present time, no data on the presence of XiXia archaeological sites along the northern boundary of the *GanSu* corridor westwards of the Edzin-gol River are available in Chinese sources.

In 2011, an illustrated report saw light on the results of the third All-China campaign for the registration of the cultural heritage in the territory of Inner Mongolia. This collection contains brief descriptions and photographs of several fortified settlements of different types in the territory of Alashan league which, in the opinion of the authors, belong to the XiXia state [Task force for the 3<sup>rd</sup> national cultural relics survey in IMAR 2011: 40, 48–51].

In 2005, 2007 and 2009 expedition leaded by A. A. Kovalev and D. Erdenebaatar investigated more northern part of examined territory in South edge of Mongolia and opened some earthen fortresses, forts, watchtowers and parts of long walls (Chingghis Khan wall) interpreted by us as complex XiXia fortified borderline [Kovalev & Erdenebaatar 2008; *id.* 2010].

In 2007–2009, an expedition of the People's University (RenMin DaXue) worked in the Bayannur prefecture-level city [The archaeology of northern ethnicity research Institute, RU & The Publicity dep. of Urad Rear banner's commiee, CPC 2010]. During the fieldwork, the team investigated many fortifications and discovered XiXia ceramics on some sites. Several fortresses and forts they attributed to XiXia period.

In 2011–2012, joint Japan–Mongolian expedition investigated two parts of northern fortified line in Mongolia and observed long walls, some earthen fortresses and forts; they obtained two <sup>14</sup>C dates on wood samples from these constructions belong to 12<sup>th</sup> – 13<sup>th</sup> centuries CE [Moriya *et al.* 2014].

In 2016 was published the report by archaeologists of Inner Mongolia on the survey of the Great Wall region in the Alashan League [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016]. In this work, much attention is paid to structures, the architecture of which is typical for XiXia. It turns out that the fortifications of XiXia spread in the Alashan Desert up to the modern Mongolian–Chinese border. Thus, the forts and watch- and signal towers found in the southern part of Mongolia form a single system with the structures found in the



Alashan desert. As stated in the report, Tangut pottery has been found on many sites in Northern Alashan.

The data of these archaeological studies indicate that the northern border of XiXia entered the territory of modern Mongolia. The question arises as to whether this border was marked by a long wall. As such a wall, we consider the so-called "northern section of the outer fortified line", well known to Chinese scholars since the mid-20<sup>th</sup> century [Li Yi-you 2001: 23-26]. In Mongolia, this wall is called the "Wall of Chinggis Khan". In 2008, we published an article claiming that this section was built during the XiXia period, as opposed to the "southern section" which was built during the Western Han period [Kovalev & Erdenebaatar 2008].

The fact is that instead of one line of external fortifications, built in 102 BC, which is mentioned in the sources of the Han time, Chinese archaeologists discovered two lines running parallel to each other, often several kilometers from one another (see Fig. 2). 40–50 years ago, no one could have imagined that XiXia had developed these northern territories well, so the idea arose that both of these lines of fortifications were built in Han times despite the fact that here was no evidence of this, and still is not, and this is repeated by Chinese archaeologists to this day [Gai & Lu 1984: 96–97; Zhang & Wang 1995: 107; Zhao Hua-cheng 1995: 246–247; Li Yi-you 2001: 23–26; National cultural heritage administration: 268–269, 619; Liu & Bai 2010: 303, Fig.6–35; Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 179–180]. The <sup>14</sup>C data on the medieval dating of northern wall themselves and the nearby fortifications, in accordance with tradition, are interpreted by Chinese archaeologists only as evidence of the reuse of the old Han walls during the XiXia period. The last such article with a pronounced position of a archaeologist from the Inner Mongolia Zhang Wen-ping was published in 2019. It contains only speculative arguments against our position: the state of XiXia was very poor at that time, people fled and therefore could not defend the wall, the Tanguts were nomads, therefore they could not build normal fortifications at all. In addition, for some reason the author claims that in the south of present-day Mongolia there lived Dada tribes subordinate to the Tanguts, and they used Tangut ceramics, which we find here. However, as

mentioned above, we did not have any written information about which population lived here on the eve of the invasion of Chinggis Khan. There is no doubt about the skills of building walls among the Tanguts: written sources speak of a strict organization of defensive structures on the border. In addition, the author of the article takes Zhang Dou-yong's idea that the center of supervisory military administration Baima jiancheng is located in the Chagankerimu 查干克日木 fortress near the *HeLanShan* mountains as an axiom. And if the center of administration is so far in the south, then it was impossible to control the troops on the northern wall from here, concludes Zhang Wen-ping from the idea taken on faith. However, as mentioned above, this idea of Zhang Dou-yong does not correspond to the ancient map of XiXia, and the Chagankerimu fortress itself is not attributed from an archaeological point of view, and most likely was built during the Han period. In this way it is impossible to prove the truth. It would be much more effective to excavate the "northern section of outer walls" itself, to investigate its construction, to excavate the fortifications associated with it, to obtain new <sup>14</sup>C analysis data, and dated artifacts from the excavations. This is a scientific way of proving.

In order to prove now the Tangut attribution of the northern wall — the wall of Chinggis Khan, it is necessary to consider it in the system of fortifications of the Xi Xia and Han period too, which we undertake further in the text.

### III . Chinggis Khan Wall ("northern section of outer long walls") as part of fortified defensive frontier line of XiXia state

The so-called Chinggis Khan's Wall is represented with great precision on Russian and Mongolian maps at scales of 1:500,000 and 1:100,000. Pitifully, prior to our expedition in Mongolia, no archaeologist had surveyed this wall; only in 1957 Academician Kh. Perlee examined this structure in the Nomgon Sum [Perlee 2001: 273]. Perlee erroneously believed that the 'Ikh Kherem' ('the Great Wall') extends from Lake Barkul eastwards up to Inner Mongolia. In his paper of 1962, he mentions the alleged fortresses (which he supposedly had not vis-

ited) related to this wall in the territory of Nomgon Sum: Gants Modny Kherem, Sain Usny Kherem, and Bayshint Kherem, and presents a plan and a description of the fortified site of Shar Tolgoin Kherem examined by him near the 5<sup>th</sup> Brigade of Nomgon Sum in the foothills of the mountains of Shiveet Uul. In the course of our surveys, it proved possible to localize in the terrain some of the fortified sites mentioned by Kh. Perlee.

A detailed description and cartographic evidence pertaining to the arrangement of the walls are presented in the book by Mongolian geographer Academician T. Baasan [Baasan 2006: 32, fig.22 Б]. According to his investigations, the evidence of Russian maps, our field observations, and the information from the Google Earth system, this wall begins in the west from a point with coordinates 42° 10.411' N and longitude 102° 24.851' E from the Alag Uul mountain, over the crest of which the border between Mongolia and China passes; it is extended eastwards throughout the territories of Noyon, Bayandalai and Khurmen sums along the border to as far as the locality of Shivee Khatavch, turns to the north-east in the point at 42°09' N and 102° 57' E, crosses the mountain of Kherem Öndör Uul, extends north-eastwards up to the mountain of Ulaan Del Uul (approximately at 42° 29' N and 103° 56' E); here it turns to the east entering the territory of Nomgon Sum and extending east-south-eastwards along the southern border of the Bordzongiin Gobi desert; then, approximately at the point 42° 11' N and 105°42' E, it turns to south-east entering the Chinese territory in the point of Talyn Sharga Ovoo (41° 59.133' N and 105° 52.559' E) (see map, Fig. 2). According to T. Baasan's calculations, the length of the wall within the territory of Mongolia amounts to at least 315 km.

Our studies [Kovalev & Erdenebaatar 2008; *id.* 2010; Kovalev 2012] have allowed us to correct the mistakes of the Chinese researchers Gai Shan-lin, Lu Si-xian, Li Yi-you and others [Gai & Lu 1984: 96–97; Zhang & Wang 1995: 107; Zhao Hua-cheng 1995: 246–247; Li Yi-you 2001: 23–26, fig. 2; National cultural heritage administration 2003: 268–269, 619; Liu & Bai 2010: 303, fig.6–35] concerning the attribution and localization of the so-called "outer long walls" ('外城') farther eastwards from the border between Mongolia and China.

The Mongolian 'Chinggis Khan's Wall' crosses the Chi-

nese border at a point with the coordinates 41° 59.133' N and 105° 52.559' E forming an extension to the 'northern section' (北線) of the "outer walls" '外城' (Fig. 2). In our opinion, this wall was built by the XiXia. The 'southern section' ('南線') of 'outer walls' is limited in the west by the point with coordinates 41° 47.439' N and 105° 57.165' E situated in the territory of China, approximately seven kilometres to the north-west from the excavated fortress Chaolukulun 朝魯庫倫 [Gai & Lu 1981] (coordinates 41° 44.021' N, 105° 59.574' E) (Fig. 2). In our opinion, this wall was built in Western Han period.

Our expedition has surveyed the 'Chinggis Khan's Wall' in three its parts. In 2005, it was examined in the territory of Bayandalai and Khurmen Sums from point 42° 11' N, 102° 45' E up to the point 42° 14.3' N, 103° 17.8' E. The wall, as it had already been noted by Chinese researchers after observations in Inner Mongolia, was constructed from stone in the mountainous terrain and partly from saxaul (*Haloxylon ammodendron*) in the plain (Fig. 3, 4). The layers of saxaul are alternated with layers of earth. At about 42° 11' N and 102° 45' E, the wall constructed



Fig. 3 XiXia long wall in Mongolia (stone section)



Fig. 4 XiXia long wall in Mongolia (section build of saxaul) (photo by T. Baasan in 1970s)

of stone amounts to the height of 3 m while at 42° 12' N and 103° 08' E the wall constructed of layers of saxaul and earth exceed 2.5 m in height. In other places the height of the wall does not exceed 1 m. The wall is about 3 m wide; on both sides there are traceable shallow ditches 3 m wide each. In 2007 and 2009, the expedition investigated the long wall in the territory of Nomgon Sum over an area from 42° 01.478' N and 104° 15.135' E to as far as 42° 01.700' N and 105° 49.190' E, almost up to the intersection with the present Mongol–China border. The long wall at this section is about 0.5–1.0 m high, up to 3 m wide; on the two sides, ditches up to 2 m wide and up to 1 m deep are traceable. The wall here is constructed of earth, occasionally the saxaul used for strengthening of the construction is discernible.

According to the descriptions provided by Chinese archaeologists, the wall has the same parameters further eastwards representing an earthen bank 3–6 m wide and 0.5–3 m high; occasionally it is built-up with heaps of stone. It passes still additional 527 km throughout the northern lands of the banners Urad Rear 烏拉特後旗, Urad Middle 烏拉特中旗, and Darhan'mumingan qi 達爾罕茂明安聯合旗 in Inner Mongolia, it rounds the Bayan-obo 白雲鄂博 city then turning south-eastwards, reaches the northern border of WuChuan county 武川縣 district where it joins the long wall of the Jurchen dynasty Jin 金 [Li Yi-you 2001: 24] (see Fig. 2).

### 1. Defensive line fortresses in modern Mongolian territory

In Mongolian territory, nearby the northern long wall on its southern side there are at least 13 fortified fortresses surrounded with earthen walls (Fig. 2 (map) and Fig. 5 corresponding to the numbering in the text of the article). In our opinion, these unified structures were built as fortified camps to accommodate military units of XiXia state.

**Fortress № 1** (42° 10.330' N, 102° 25.050' E) is situated 100 m to the south from the long wall, at the latter's western extremity. The fortress is of a rectangular plan, oriented with its corners to the cardinal points, it is measuring 100 m from north-west to south-east and 90 m from south-west to north-east. The walls are about 6 m thick; on the outside, a ditch about 4 m wide is

traceable, on its external edge there is a rampart lower and narrower than the wall. At the corners there are elevations protruding outwards. In the middle of the south-eastern wall there is an opening for the gate (?). The site is revealed using the Google Earth system.

**Fortress № 2** (42° 11.420' N, 102° 39.250' E) is situated 60 m to the south from the long wall, in the place where the wall bends archwise to the north-west. The fortress is rectangular in plan, oriented to the cardinal points by its corners; it is measuring 80 m from north-west to south-east, 86 m from south-west to north-east. The walls are about 6 m thick; on the outside a ditch about 4 m wide is traceable; on its external edge there is a rampart lower and narrower than the walls. At the corners there are elevations protruding outwards. In the middle of the north-eastern wall there is a gate opening about 5 m wide. On an elevation 300 m to the south-east-east from the fortress there are ruins of watch tower (?). The site was revealed using the Google Earth system.

**Fortress № 3** (Kherem Öndör fortress, 42° 09.066' N, 103° 0.714' E, Bayandalai Sum) is situated 2.5 km to the south from the long wall. It is rhomb-shaped, oriented with the corners almost to the cardinal points, with a deviation by 15° from north to west; the walls are approximately 95 m long each, about 6 m thick, and ca 1.5 m high. At the corners of the walls there are elevations about 2.5 m high. In the middle of the south-eastern wall there is a passageway about 7 m wide. On the outside, the walls are surrounded by a ditch about 1 m deep and about 5 m wide. Into the walls, wooden (poplar) pegs were driven of which the lower parts remained; their diameter was, on average, about 2 cm. The fortress was examined by our expedition in 2005 [Kovalev & Erdenebaatar 2008].

**Fortress № 4** (Bayshint fortress, 42° 11.504' N, 103° 8.515' E, Khurmen Sum) is situated 1 km to the south from the long wall. It is of a rectangular plan, oriented by its sides to the cardinal points with a deviation by about 10° to the west. The northern and southern sides have a length of about 100 m, the western and eastern sides are 87 m long each. The thickness of the walls is about 6 m, the length is ca 1.5 m; at the corners, elevations up to 2 m high are traceable. In the middle of the eastern wall, an opening about 6 m wide is reserved. The walls on

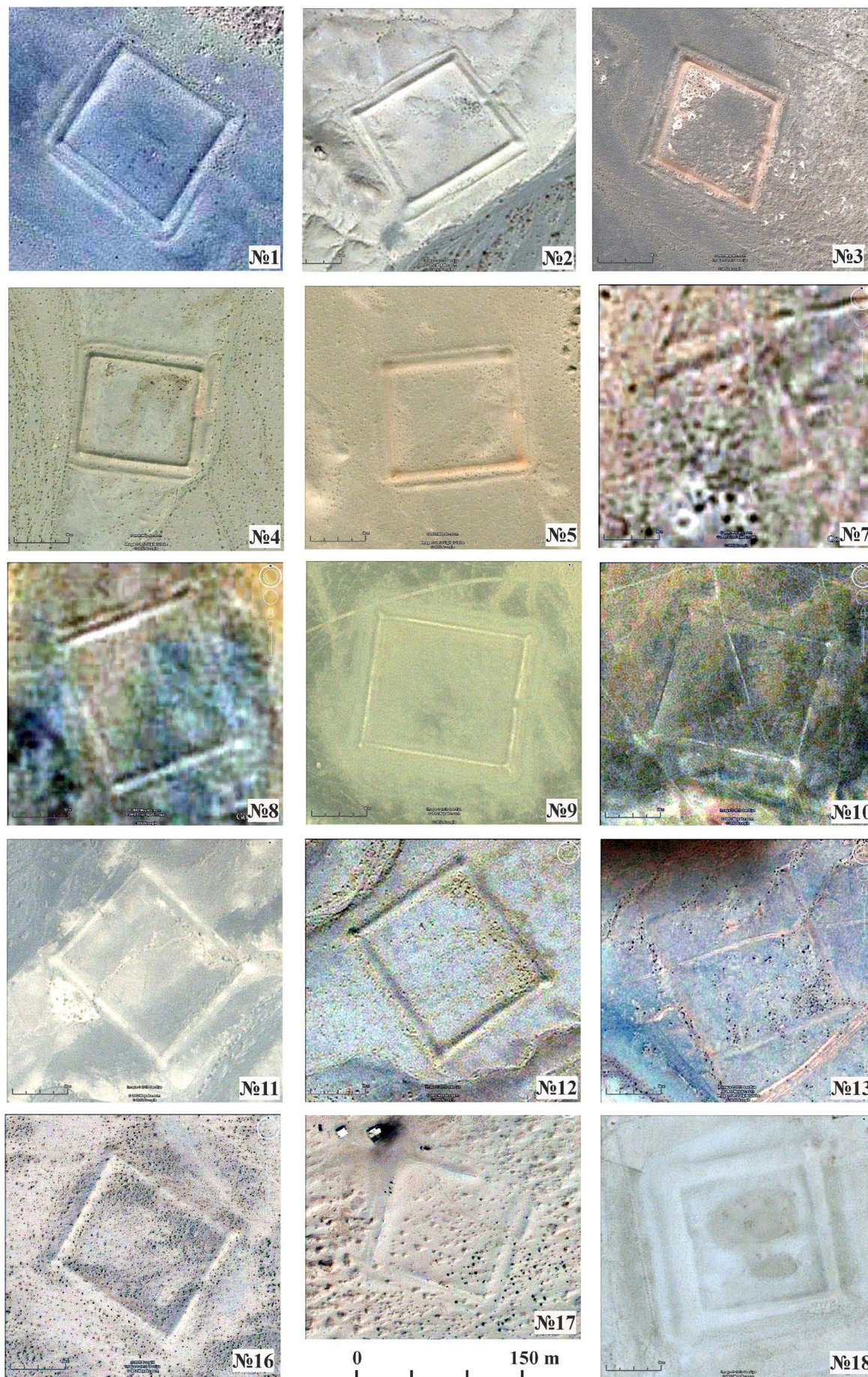


Fig. 5. Fortresses of XiXia defensive line (Google Earth photo by numbering in text)

the outside are surrounded with a ditch about 7 m wide and about 1 m deep. Our expedition examined it in 2005 [Kovalev & Erdenebaatar 2008].

**Fortress № 5** (Kharaa Shive fortress, 42° 14.487' N, 103° 14.389' E, Khurmen Sum) is situated 120 m to the south from the long wall. It is of a rectangular plan, oriented to the cardinal points by its sides with a deviation by about 10° to the west. The northern and southern sides are about 110 m long each, the western and eastern sides are 96 m long each. The thickness of the walls is about 7 m, the height — about 1.5 m; at the corners, elevations up to 2.5 m high are traceable. In the middle of the eastern wall, an opening about 10 m wide is reserved. The walls are surrounded on the outward sides with a ditch about 6 m wide and up to 1 m deep. Our expedition examined it in 2005 [Kovalev & Erdenebaatar 2008].

**Fortress № 6** (42° 20.500' N, 103° 36.970' E) is situated 530 m to the south from the long wall. The fortress is rectangular in plan, oriented by its sides to the cardinal points with a deviation by 15° counter-clockwise; its dimensions in plan from west to east are 110 m, from north to south — 120 m. The walls are up to 7 m thick. At the corners, elevations are traceable. In the middle of the eastern wall, there is an opening for the gate. The site was examined by a Japanese–Mongolian team in 2012; the wood (poplar) from the wall structures yielded a radiocarbon date of " 1044–1215 CE" (IAAA-120682) [Moriya *et al.* 2016: 77; Moriya *et al.* 2021:4].

**Fortress № 7** (42° 20.740' N, 103° 44.319' E) is situated 15 m to the south from the long wall. The fortress is rectangular in plan, oriented by its sides to the cardinal points with a deviation by 15° counter-clockwise; in plan, it is measuring 100 m from west to east and 120 m from north to south. The walls are up to 9 m thick. In the middle of the eastern wall there is a gate opening. The site was revealed using the Google Earth system. In 2012, it was examined by a Japanese–Mongolian team and named 'Kherem Khudag fortress' [Moriya *et al.* 2016: 77].

**Fortress № 8** (42° 28.290' N, 104° 01.910' E) is situated 30 m to the south from the long wall. The fortress is rectangular in plan, oriented with its sides to the cardinal points, with a deviation by 15° clockwise; its dimensions are 145 m from north to south and 127 m from west to

east. The walls are up to 9 m thick; on the outside, a ditch about 5 m wide is traceable; along its outer edge there is a rampart lower and narrower than the walls. At the corners there are elevations protruding outwards. In the middle of the eastern wall there is an opening for the gate. The site was revealed using the Google Earth system.

**Fortress № 9** (Bayshint Kherem, 42° 28.380' N, 104° 19.430' E) is situated 540 m to the south from the long wall. The fortress is rectangular in plan, oriented in plan by its sides to the cardinal points with a deviation by 15° counter-clockwise; its dimensions are 120 m from north to south and 137 m from west to east. The walls are up to 7 m thick; on the outside, a ditch about 6 m wide is traceable; along its outside edge there is a rampart lower and narrower than the walls. At the corners there are elevations protruding outwards. In the middle of the eastern wall there is an opening 9 m wide for the gate. Judging through the name of the well 'Bayshintyn Us' located nearby, exactly this fortress is mentioned by Kh. Perlee as 'Bayshint Kherem' [Perlee 2001: 273]. The site was revealed using the Google Earth system. In 2012, it was examined by a Japanese–Mongolian expedition and named the 'Arashaan fortress' [Moriya *et al.* 2016: 77].

**Fortress № 10** (Khurmen Tsagan Obo fortress (42° 26.292' N, 104° 39.897' E) is situated 1 km to the south from the long wall. It is nearly rectangular in plan, oriented by its sides to the cardinal points with a deviation by 15° clockwise. The eastern and western walls each are 115 m long, the northern and southern ones — approximately 145 m. The height of the walls is about 1 m, the thickness is about 4 m. At the corners there are elevations 8 m in diameter and about 2 m high. In the middle of the eastern wall there is a passageway about 5 m wide. The walls are surrounded on the outside with a ditch about 1 m deep and about 3 m wide. The site was revealed in the course of the surveys of 2007 [Kovalev & Erdenebaatar 2008:]. In 2012, it was examined by a Japanese–Mongolian expedition and named 'Khermen Tsagan fortress' [Moriya *et al.* 2008:77].

**Fortress № 11** (fortress Shar Tolgoin Kherem; 42° 18.900' N, 104° 59.880' E) is situated 750 m to the south from the long wall. The fortress is rectangular in plan, oriented to the cardinal points by its corners; it is measur-

ing 138 m from north-west to south-east and 124 m from south-west to north-east. The walls are about 7 m thick. At the corners there are elevations protruding outwards. In the middle of the south-eastern wall, an opening for the gate is traceable. This fortress is 2.3 km to the north from the 5<sup>th</sup> Brigade of Nomgon Sum, on the road to the sum's centre. Basing on these data, it is possible to state that it is exactly the site which Kh. Perlee examined and described in the publication of 1962 under the name of Shar Tolgoin Kherem [Perlee 2001: 272–273]. According to his description, the walls of the fortress have the length of 169–166 steps from north-west to south-east and 142–146 steps from south-west to north-east. The walls are 6 m wide and 1.5 m high; the elevations at the corners have a diameter of about 8 steps. Perlee mentioned a gap 4 steps wide, probably a gully, in the north-western wall rather close to the northern corner. The site was revealed using the Google Earth system. In 2012, it was examined by a Japanese–Mongolian team and named the 'Dersen us' [Moriya *et al.* 2016: 77].

**Fortress № 12** (Gants Modny Kherem fortress, 42° 13.310' N, 105° 19.915' E) is situated 2.5 km to the south from the long wall, near a well of the same name. Judging through its location near the well Gants Modny Khudag, this is the fortress mentioned by Kh. Perlee under the name of Gants Modny Kherem [Perlee 2001:273]. It is of a rectangular plan, oriented to the cardinal points with its corners. The north-western side is approximately 111 m long, the south-eastern one — 117 m, the north-eastern and south-western sides each are about 135 m long. The height of the walls is about 1 m with a thickness of about 5 m. At the corners there are elevations 8 m in diameter and about 2 m in height. In the middle of the eastern wall there is a passageway about 4 m wide. The walls on the outside are surrounded with a ditch about 1 m deep and about 4 m wide. The site was revealed in the course of our surveys in 2007 [Kovalev and Erdenebaatar 2008].

**Fortress № 13** (fortress Vaarny Shivee, 41° 58.700' N, 105° 44.950' E) is situated 7 km to the south from the long wall, under a rock on which the fort Vaarny Shivee is built (see below). It is square in plan measuring 139 × 139 m, oriented to the cardinal points by the corners. The walls are about 6 m thick and have a height of about 1 m.

The site was revealed by surveys in 2009. In 2012, it was examined by the Japanese–Mongolian team and named 'fortress Ulaan Shivee' [Moriya *et al.* 2016: 75–76].

## 2. Defensive line fortresses in modern Chinese territory

**Fortress № 14** (41° 48.870' N, 106° 08.700' E) is situated 90 m to the south from the long wall. The fortress is rectangular in plan, oriented to the cardinal points by its corners; its dimensions are 130 m from north-west to south-east and 115 m from south-west to north-east. The walls have a thickness of 4–5 m. At the corners there are elevations protruding outwards. In the middle of the south-eastern wall, a gap for the gate about 10 m wide is traceable. The site was revealed using the Google Earth system.

**Fortress № 15** (41° 46.280' N, 106° 14.060' E) is situated 40 m to the south from the long wall. The fortress is rectangular in plan, oriented to the cardinal points by its corners; its dimensions are 140 m from north-west to south-east, 130 m from south-west to north-east. The walls are presently about 10 m thick. In the middle of the south-eastern wall a gap for the gate is traceable. The site was revealed using the Google Earth system.

**Fortress № 16** (41° 41.242' N, 106° 26.461' E) is situated 1200 m to the south from the long wall. The fortress is rectangular in plan, oriented to the cardinal points by its corners; its dimensions are 132 m from north-west to south-east, 115 m from south-west to north-east. The walls have a thickness of 7 m. At the corners there are elevations protruding outwards. In the middle of the south-eastern wall, a gap for the gate about 9 m wide is traceable. The site was revealed using the Google Earth system.

**Fortress № 17** (41° 43.713' N, 106° 47.946' E) is situated 1 km to the south from the long wall. The fortress is rectangular in plan, oriented to the cardinal points by its corners; its dimensions are 115 m from north-west to south-east and 109 m from south-west to north-east. The walls have a thickness of up to 5 m; on the outside, a ditch about 6 m wide is traceable; along its external edge there is a rampart lower and narrower than the walls. At the corners there are elevations protruding outwards. In the middle of the south-eastern wall a gap for the gate

7.6 m wide is traceable. The site was revealed using the Google Earth system. In 2007–2009, it was examined by a team of Renmin daxue (named Dehadumaolai 德哈都毛賴), Tangut pottery in modern surface were found [The archaeology of northern ethnicity research Institute, RU & The Publicity dep. of Urad rear banner's commiee, CPC 2010: 124].

**Fortress № 18** (42° 07.940' N, 107° 22.093' E) situated 180 m to the south from the long wall. The fortress is square in plan, oriented by its sides to the cardinal points with a deviation by 10° counter-clockwise; its dimensions are 65 × 65 m. The walls have a thickness of up to 9 m; on the outside, a ditch about 7 m wide is traceable; on its outer edge there is a lower bank about 7 m wide. At the corners of the walls there are elevations protruding outwards. The site was revealed using the Google Earth system.

**Fortress № 19** (42° 09.356' N, 108° 45.828' E) is situated 360 m to the south from the long wall. The fortress is square in plan, oriented by its sides to the cardinal points with a deviation by 10° counter-clockwise; from west to east its width is 160 m; its southern section is disturbed. The walls have a thickness of up to 6 m. The site was revealed using the Google Earth system.

**Fortress № 20** (42° 05.960' N, 109° 10.700' E) is situated 360 m to the south from the long wall. The fortress is square in plan, oriented by its sides to the cardinal points with a deviation by 10° counter-clockwise, its dimensions are 153 × 153 m. The walls have a thickness of up to 20 m; on the outside, a ditch about 20 m wide is traceable, on its outer edge there is a lower bank about 10 m wide. At the corners of the walls there are elevations protruding outwards. In the middle of the eastern wall there is a gap for the gate. The site was revealed using the Google Earth system.

**Fortress № 21** (42° 06.125' N, 109° 19.400' E) situated 580 m to the south from the long wall. The fortress is square in plan, measuring 180 × 180 m, oriented to the cardinal points by its corners. On the outside, a ditch is traceable; on its outer edge there is a rampart lower and narrower than the walls. At the corners there are elevations protruding outwards (?). The site was revealed using the Google Earth system.

**Structure № 22** (42° 00.700' N, 109° 41.750' E) is

situated 230 m to the south from the long wall. It is represented by a circular rampart 140 m in diameter, about 10 m thick; on the north and south, it is cut by gaps about 6 m wide. In the middle of the rampart there is a round elevation 37 m in diameter; at the four sides of the latter there are symmetrically arranged round elevations each 13 m in diameter. Possibly we are dealing here with a cult place (bases of stupas?). The site was revealed using the Google Earth system.

### 3. Network of forts and watchtowers

Evidently, all the mentioned fortresses enumerated constitute a system of defensive structures integrated with the long wall. The same system comprises the forts and watching and signal towers investigated by our expedition and Chinese colleagues in Alashan desert. Our expedition found some watchtowers located north of the fortified line (Fig. 6). Their task was to warn of the enemy's offensive. Also on Chinese territory, many signal towers were opened, with the help of which information about the attack was transmitted to the south, to the administrative centers of XiXia. These towers, as a rule, were heaps of stones of a round or square shape in plan.

Unfortunately, the modern attribution and dating of these signal towers and some forts and fortresses found south of the defensive line, *i.e.* in the Alashan desert, seems naive. Chinese archaeologists attribute some of the structures to the Han, and some of the structures to XiXia. There are almost no explanations for this. This can be clearly shown on the map (Fig. 7). Thus, in the north of the Alashan Right banner, in the atlas of cultural heritage of Inner Mongolia, and then in the publication of reports on the survey of long walls, all towers (*ca.* 30 towers,



Fig. 6 Watchtower nearby XiXia long wall in Nomgon sum

named as Sunburi 筭布日 line) and part of the forts are attributed to the Han period [National cultural heritage administration 2003: 633–635; Ministry of culture of IMAR, CPC & Institute of Cultural Relics and Archaeology, IMAR 2016: 48–53]. On adjacent territory, in the north of the Alashan Left banner, all such towers (*ca.* 25 signal towers) are attributed to the XiXia period! [Institute of Cultural Relics and Archaeology, IMAR 2016: 146–152] It really turns out that during the Han period, towers were built in one banner, and during the XiXia period, in another? Of course, the modern administrative boundary line cannot be the basis for such hypotheses. The fact is that Alashan Left aimag was examined later, and by that time the research team already knew that Alashan had been settled during the XiXia period. Therefore, they made this conclusion.

As for the forts and fortresses in northern part of Alashan, some of them can now definitely be attributed to XiXia. I think that oval fortifications with ramps inside are not typical for Han and should date from the XiXia period, as well as dry stone architecture often with using of saksaul woods. By the peculiarities of their architecture, they are also referred to XiXia by Chinese researchers. There are also forts on which artifacts from the Xi Xia period have been found. With great caution, they can also be considered part of XiXia's fortifications. In any

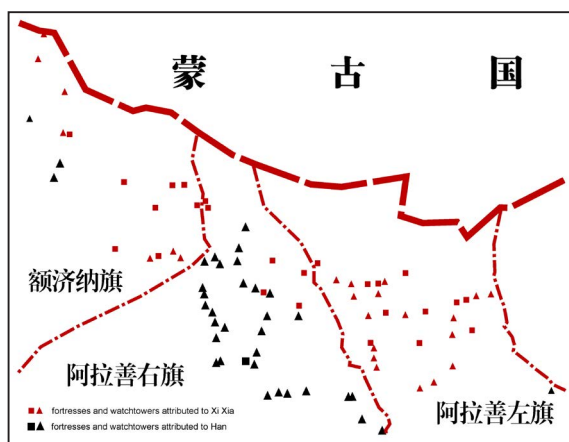


Fig. 7 Map of forts and watchtowers in North Alashan desert attributed by Chinese archaeologists to XiXia (red) and Han (black)

In Alashan Left banner all watchtowers were attributed to XiXia, in Alashan Right banner all watchtowers (Sunburi line 筭布日) were attributed to Han. [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016]

case, so far not a single fort or fortress has been found on the fortified line in Mongolia or south of it in the Alashan desert, where artifacts of the Han time would have been discovered. Not a single fort here can be considered a construction of the Han period, and there are more arguments in favor of attributing most of the forts to XiXia.

Here are the most likely cases of attribution of forts and fortresses in northern part of Alashan to XiXia.

**Fort № 1** Shivee khatavch (42° 11.640' N, 102° 58.453' E) is a powerful stone fort defending the mountain pass of Shivee Khatavch, 3 km to the north from the long wall. From this point, a territory is well viewed to as far as 5–8 km. The fort is of oval plan; its walls are gently sloping on the outside and almost vertical on the inside. It is oriented by its longer axis along the line east-north-east – west-south-west. The length at the foundation is 25 m, the width is 16 m. The internal space is 12 m long and 4.5 m wide. The height of the walls is about 4 m. A ramp 1.5 m wide is leading onto the western wall. The site was found during the surveys in 2005 [Kovalev & Erdenebaatar 2008].

The stone fort of Shivee Khatavch is well visible from the Kherem Öndör mountain, over the summit of which a long wall with small towers is running at the height of 1,310 m (42° 10.63' N, 103° 1.8' E). The visibility from the mountain is up to 10 km. This structure must have been well visible from fortress № 3 (Kherem Öndör) which is located 2.5 km to the south from that mountain.

The stone fort of Shivee Khatavch is well visible from the Kherem Öndör mountain, over the summit of which a long wall with small towers is running at the height of 1,310 m (42° 10.63' N, 103° 1.8' E). The visibility from the mountain is up to 10 km. This structure must have been well visible from fortress № 3 (Kherem Öndör) which is located 2.5 km to the south from that mountain.

**Fort № 2** (42° 1.140' N, 103° 15.922' E) is built at a height of 1,311 m. It has an oval plan, oriented along the line north-west-south-east. Its length is 13.6 m, the width is 7.4 m. The walls are up to 3 m high. The site is situated above the mountain pass leading to the modern Chinese territory from the east, *i.e.* from the mountains of Tsagan Uulyn Khyar (Khurmen Sum). The site was found during the surveys in 2005 [Kovalev & Erdenebaatar 2008].

**Fort №3** Vaarny Shivee (41° 58.620' N, 105° 44.750' E)



is located on a 30-metre high rock, 230 m to the south-west from the earthen fortress of the same name and three kilometres westward from the present-day Mongol-Chinese border. The site was found during the surveys in 2009 (Fig. 8). From this site, the long wall running 7 km to the north-east is excellently viewed, as well as the vast plain further to the north. The fort is of square plan measuring 20 × 20 m with the dry-stone walls 4 m high and 3 m thick. At the south-eastern corner of the structure there is a square donjon 内城 measuring about 5 × 5 m. Inside the fort, on the modern surface, fragments of typical XiXia greyware black-glazed pottery with carved vegetal ornamentation have been collected (Fig. 9). The name of this fort apparently reflects the fact of the presence of ceramic fragments here since 'vaar' is 'pottery' in Mongolian.

**Fort № 4** Talanbaixing 塔蘭拜興 (Talanbaixing 塔林拜興, 41° 39.413' N, 103° 03.685' E) is situated on a rocky elevation 44 km southwards from fort № 2, evidently at



Fig. 8 Vaarny shivee fort



Fig. 9 XiXia pottery from Vaarny shivee fort

the continuation of the road leading from the fortified line to the south. This structure is mentioned in the *"Atlas of the cultural heritage of Inner Mongolia"* (according to the description, it is 45 × 25 m in plan with stone walls 2.5 m high and 1.2 m thick; at the north-western corner there is a stone donjon (内城) 15 × 15 m in plan with the walls 1.3 m thick and 7.4 m high; inside, a gallery for archers is arranged); the authors of the atlas dated the site to the Han period although mentioning the fact of the finding of Tangut pottery here [National cultural heritage administration 2003: 634]. A more comprehensive description and photographs of the fort are presented in the report on the results of the third All-Chinese campaign for registration of the sites of culture [Task force for the 3<sup>rd</sup> national cultural relics survey in IMAR 2011: 48]. Judging through these materials and satellite imagery of Google Earth, the donjon is of nearly square plan with rounded corners; its dimensions are 10 × 10 m and its walls are 2.35 m thick and 2.74 m high. Inside, a gallery about 1.5 m wide is arranged. On the eastern and southern sides, at the distance of 3 m from its walls, the donjon is surrounded by an archform stone wall adjoining the tower by its ends at the corners. The wall is about 25 m long and up to 1.5 m high. At the south-eastern corner, there is a doorway 1.7 m high and 1.65 m wide in the wall of the donjon. The walls are dry-laid of stone slabs. The authors of the report third All-Chinese campaign link this structure with the XiXia state on the basis of the "features of its architecture", this is followed by more recent publications [Chen Yong-zhi *et al.* 2014: 216–218; Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 153].

**Fort № 5** Wulanbaixing 烏蘭拜興 [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 154] is situated southeastwards of Talan baixing. It is square fortress 20 × 20 m in plan, have stone walls 1.2 m thick and 1 m high; in the southern wall there is a gap 2.8 m wide; at the north-western corner there is a square donjon 内城 5 × 5 m in plan with the walls 5 m high and a terrace 1 m wide. In ruins fragments of Tangut pottery have been found [National cultural heritage administration 2003: 634].

**Fort № 6** Barunhaierhan 巴潤海爾汗 [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016:

152] has the shape of an irregular quadrangle 12 m wide. Its walls are made of dry stone and saxaul.

**Fortress № 7** Wuhaixibei 烏海希貝 [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 153] (Wuhaixibo? 烏海希勃?) [National cultural heritage administration 2003: 634] with dry stone-saxaul walls has rectangular shape in plan *ca.* 120 × 90 m. Inside walled area fragments of XiXia pottery have been found [National cultural heritage administration 2003: 634].

**Fortress № 8** Tulegengaole 圖勒根高勒 [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 146] is almost square in plan, its dimensions are *ca.* 86 × 86 m. The walls are made of poured earth, from the outside are lined with stones. On modern surface fragments of XiXia pottery have been collected.

**Fort № 9** Zonghaierhan 宗海爾汗 [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 149] has oval shape in plan *ca.* 15 m in diameter. Walls were composed of layers of dry stones, earth and saxaul.

**Fort № 10** Huretu 呼熱圖 [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 150] is almost square with rounded corners in plan, its dimensions are *ca.* 57 × 57 m. The walls are made of poured earth, saksaul and cobblestones. On modern surface fragments of XiXia pottery have been collected.

**Fort № 11** Xibotobuke 希勃特布克 [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 151] has oval shape in plan *ca.* 12 m in diameter. Walls were made of cobblestones and saxaul.

**Fort № 12** Gashuntobukexibo 嘎順特布克希勃 [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 151] has square shape in plan *ca.* 15 m wide. Walls were made of cobblestones and saxaul.

**Fort № 13** Wurigennaigashun 烏日根乃嘎順 [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 152] has oval shape in plan *ca.* 12 m in diameter. Walls were made of cobblestones and saxaul. Inside walled area fragments of XiXia pottery have been found.

In the course of the expedition in Khurmen Sum in 2005, we have collected wood samples for radiocarbon analysis in order to determine the date of the construction of the defensive line. The samples included the stems of saxaul used in the construction of the long wall,

pegs from the defensive rampart and pillars dug into the ground in the fortified camp Kherem Öndör, as well as wood from the lower horizon (upon the rocky base) in the trench inside the fort Shivee Khatavch. All these samples were investigated in the radiocarbon laboratory of the Institute for the History of Material Culture (IHMC) RAS in St Petersburg (see Table 1). In addition, some radiocarbon dates were obtained during the works of later expeditions.

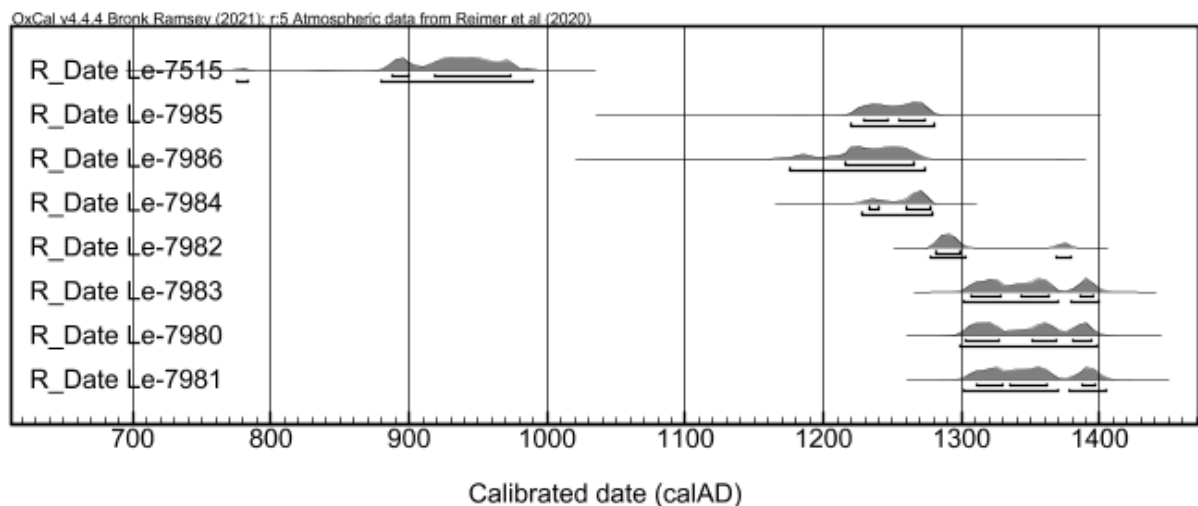
As is known, the plant in relation to photosynthesis is divided into two groups – C<sub>3</sub> and C<sub>4</sub>. For C<sub>3</sub> plants, the average value of  $\delta^{13}\text{C} = -26.7\%$ . Plants of the C<sub>4</sub> group show a lesser fractionation effect and have an average value of  $\delta^{13}\text{C} = -12.6\%$  [Vogel 1980]. Thus, they differ by 1.3% in the content of about <sup>13</sup>C or 2.6% in the content of <sup>14</sup>C.

The standard correction for isotopic fractionation for plants was taken based on the C<sub>3</sub> group. However, by the type of photosynthesis, saxaul belongs to the C<sub>4</sub> group, in contrast the poplar belonged to the C<sub>3</sub> group. Therefore, the correction for isotopic fractionation for saxaul should be different than for poplar. If we apply the correction to the saxaul sample as for the poplar, the result is a later date. Unfortunately, the level of <sup>13</sup>C content in the samples analyzed in 2007 – 2009 at the Institute for the History of Material Culture was not determined, so the standard correction was applied for saxaul. This led to a significant rejuvenation of the saxaul dates given in our Table 1, these dates were within the 14<sup>th</sup> century, which is an obvious absurdity (it seems impossible that in Yuan or Ming periods anyone built such defensive line in middle of Gobi region).

If we take into account only more correct dates, including dates based on poplar samples and a date based on saxaul sample IAAA-120681, obtained by the AMS method, they will mainly relate to the 11<sup>th</sup>– early 13<sup>th</sup> centuries. This was the period of the existence of Xi Xia state, characterized by the increasing expansion of the Mongol tribes initially depending on *Liao* and *Jin*, especially intensified since the beginning of the reign of Chinggis Khan. It will be possible to more accurately determine the date of construction of these border fortifications after correct analyzes of newly obtained samples.

Table1 <sup>14</sup>C dates of the structures of the South Gobi defensive line

Site	Laboratory code	Material dated	<sup>14</sup> C date, BP	Range of the calibrated age (68.3%)	Range of the calibrated age (95.4%)
Fortress Kherem Öndör, tethering post (?)	Le-7515	Wood (poplar)	1135±20	888AD (12.2%) 900AD 918AD (56.0%) 972AD	775AD ( 1.9%) 783AD 880AD (93.6%) 990AD
Fortress Kherem Öndör, pegs in the wall	Le-7985	Wood (poplar)	780±30	1228AD (31.4%) 1246AD 1254AD (36.9%) 1274AD	1219AD (95.4%) 1280AD
Fort Shivee Khatavch, trench, spit 3	Le-7986	wood	820±30	1216AD (68.3%) 1264AD	1175AD (95.4%) 1272AD
Long wall 4 km west of Shivee Khatavch	Le-7984	Wood (saxaul)	770±16	1233AD (10.6%) 1240AD 1260AD (57.7%) 1278AD	1227AD (95.4%) 1279AD
Long wall near the fortress Bayshint	Le-7982	Wood (saxaul)	690±16	1280AD (68.3%) 1299AD	1277AD (81.4%) 1302AD 1368AD (14.0%) 1379AD
Long wall near the fortress Bayshint	Le-7983	Wood (saxaul)	610±20	1307AD (28.2%) 1328AD 1342AD (26.4%) 1363AD 1385AD (13.7%) 1396AD	1302AD (74.9%) 1369AD 1379AD (20.5%) 1400AD
Long wall near the fortress Kharaa Shivee	Le-7980	Wood (saxaul)	620±25	1302AD (30.6%) 1326AD 1350AD (20.4%) 1368AD 1380AD (17.2%) 1394AD	1299AD (95.4%) 1398AD
Long wall near the fortress Kharaa Shivee	Le-7981	Wood (saxaul)	605±25	1310AD (23.8%) 1329AD 1335AD (32.9%) 1361AD 1387AD (11.5%) 1396AD	1300AD (73.1%) 1370AD 1377AD (22.4%) 1404AD
Long wall near fortress No. 8	IAAA-120681	Wood (saxaul)	814±24	1222AD (68.3%) 1260AD	1180AD ( 2.8%) 1190AD 1208AD (92.7%) 1273AD
Fortress No. 6	IAAA-120682	Wood (poplar)	906±21	1048AD (33.9%) 1082AD 1151AD (25.8%) 1178AD 1191AD ( 8.6%) 1204AD	1044AD (37.3%) 1086AD 1092AD ( 3.7%) 1105AD 1120AD (54.5%) 1215AD



IV . Fortifications of Chinggis Khan wall in comparing with Western Han "GuangLu line" fortifications

Could the defensive line under consideration ('northern section' of 'outer wall' with additional defensive struc-

tures) have been built in the Han period (2<sup>nd</sup> century BC – 2<sup>nd</sup> century AD) and then only reused (completed) in the 11<sup>th</sup>–13<sup>th</sup> century AD? As already mentioned above, the Chinese scholars date all the defensive structures of the so-called 'outer long walls' to the period of Western Han, including this 'northern section' ('Chinggis Khan's Wall')

and the 'southern section' running at forty-two kilometres parallel to that rampart southwards; these both sections of 'external fortifications' are attributed by Chinese scholars as 'GuangLu's defences' 光祿塞 built in 102 BC [Li Yi-you 2001: 23–26]. According to the evidence of "Shi ji" 史記, Xu Zi-wei 徐自爲 as the high official *GuangLuXun* 光祿勳 built the defensive line by the order of the Han emperor *Wu-di* 武帝 in 102 CE beginning from the fortifications of the Wuyuan district "more than thousand" li to as far as the locality named *LuJu(qu)* 廬胸<sup>(4)</sup>. "DiLiZhi" 地理志 allows us to define more precisely the situation of the "external fortifications of *GuangLu*": "*GuYang* 緄陽, when going north from [fortification] *ShiMengZhan* 石門障 [fortress] *GuangLuCheng* 光祿城 is located, further north-west [fortress] *ZhiJiuCheng* 支就城, further north-west [fortress] *TouManCheng* 頭曼城, further north-west [fortress] *HuHeCheng* 虜河城, further west - [fortress] *SuLuCheng* 宿虜城"<sup>(5)</sup>. In "*ZhengYi*" 史記正義 ("Comments to *Shi ji*") said: "It is exactly the line of defences and watching towers extending right up to *LuJu* 廬胸"<sup>(6)</sup>. According to this information, the outer defences of *GuangLu* must have been about 500 km long (about mentioned "thousand li 里"), running in the north-western and further on in the western direction beginning from the main defensive line of the Han period in the north of what was then the *GuYang* county of Western Han period. This description corresponds exactly to the "southern section of the external walls". As Li Yi-you writes, it has the total length of 498 km inside Inner Mongolia [Li Yi-you 2001: 24–25]. The written sources do not mention the construction of a some second line of 'outer' fortifications during the Han period.

In terms of planigraphy, special line of fortresses can be linked with the 'southern' section [Li Yi-you 2001: 24–25; National cultural heritage administration 2003: 124, 130, 132, 268, 272]; in 1975, excavations were conducted at

(4)「响犁湖單于立，漢使光祿徐自爲出五原塞數百里，遠者千餘里，築城鄣列亭至廬胸，...」(『史記』卷 110, 匈奴列傳)

(5)「緄陽，北出石門障得光祿城，又西北得支就城，又西北得頭曼城，又西北得虜河城，又西得宿虜城。」(『漢書』卷 28 下, 地理志)

(6)「即築城鄣列亭至廬胸也。」

one of these fortresses, *Chaolukulun* 朝魯庫倫 [Gai & Lu 1981: 25–33]. The results of the investigation of the cultural layer of this stone fortress, located at a distance of only 450 metres to the south-east from the 'southern' section, showed that the site is dating from the Han period. Here were found fragments of tile disks characteristic only of the Western Han [Shen Yun-yan 2006: 94–96] with a circular inscription 千秋万歲 ("thousand autumns, ten thousand years"), a 'WuZhu' coin 五銖錢, bronze crossbow arrowheads with iron tangs, and fragments of iron armour plates.

Using the Google Earth system we have succeeded to find 25 fortresses built directly near the 'southern section' of the "outer long walls" (at a distance of 50 — 500 m to the south from the wall); some of them are recorded in the "*Atlas of the cultural heritage of Inner Mongolia*" and some are first revealed (Fig. 2). Of these twenty five fortresses, twenty two (!) are built according to a common pattern similar to the *Chaolukulun* fortress definitely dated to the Han period: they are square and measuring about 150 × 150 m in plan, oriented to the cardinal points by their sides with a deviation by not more than 15°, and indispensably have a barbican (*WengCheng* 瓮城) — a wall protecting the gate (Fig. 10). Of the remaining two, one fortress simply has not survived (only the north-western corner is observable), while the second one is an structure of a specific form — a rectangular enclosure attached to the long wall with a tower in the centre. A semicircular or bracket-shaped 'wengcheng' is present in many fortresses constituting the Han fortified borderline in the north and north-west [Liu Xu-jie 2003: 505; Liu & Bai 2010: 297], including the well investigated fortresses *JiLu* 鷄鹿, *DaBaTuGou* 大埧圖溝, and *ChengTai* 城台 [Hu & Wang 2007: 102–105, Fig. 6, 8, 11] (Fig. 10, 11, 12). Meanwhile, the defensive structures tied planigraphically with the 'northern section' ('Chinggis Khan's wall') never are protected with a barbican ('*WengCheng*' 瓮城) and often are oriented by their corners to the cardinal points (Fig. 4). Moreover, the 'southern section' is additionally provided with watching towers located between the fortresses on the south from the wall, at a small distance from the latter. Such regularity is not characteristic of the 'northern section'. On the other hand, the oval form demonstrated by forts belong-

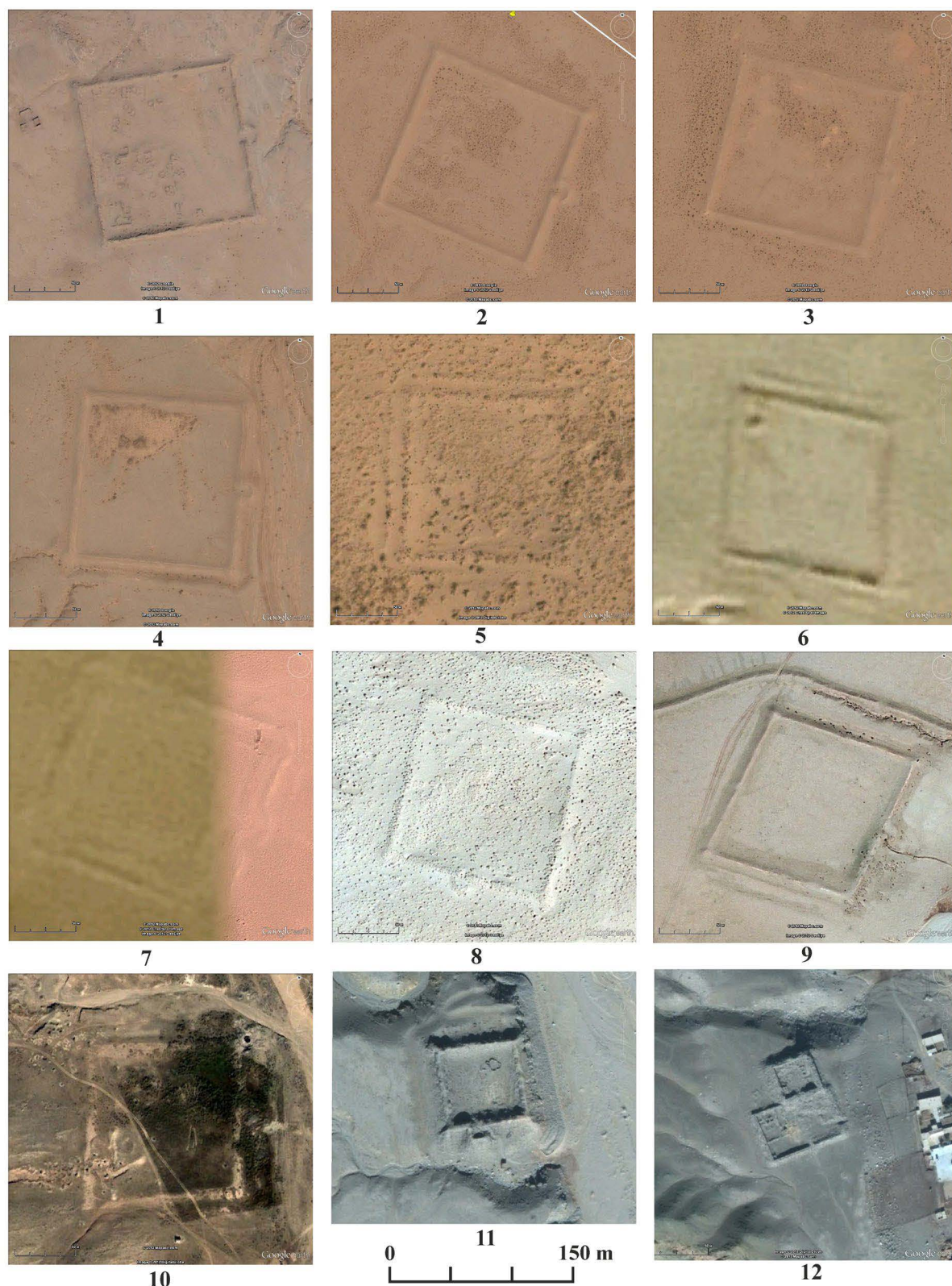


Fig.10 Fortresses of Han "GuangLu line".

1- Chaolukulun 朝魯庫倫； 2 - Qingkulun 青庫倫； 3 - Wulankulun 烏蘭庫倫； 4 - Wuliji 烏力吉高勒； 5 - Hariwusu 哈日烏蘇； 6 - Arihure 阿日忽熱； 7 - Woboerhure 沃博爾忽熱； 8 - Wulanxi 烏蘭西； 9 - Wulan 烏蘭； 10- Baisheng 白生； 11 - Jilu 鷄鹿； 12 - Dabatugou 大埧圖溝. (Google Earth photo by names in "Atlas of the cultural heritage of Inner Mongolia" [National cultural heritage administration 2003])

ing to the 'northern section' is uncommon for the Han architecture.

Thus the aggregate of the presently available evidence on the 'northern' and 'southern' sections of the 'outer defensive line' suggests different dates of their construction. The 'southern section' together with the adjoining fortresses and watching towers was built in the Han period and represents the so-called 'fortified borderline of *GuangLu*' the construction of which started in 102 BCE. The 'northern section' jointly with the adjacent fortresses, forts, watching and signal towers was built by the state of XiXia.

## V. Settling the northern lands with tangutes and organizing their defense

The presence of the Tanguts at the 'external fortifications' is suggested also by the finds of Tangut pottery. As mentioned above, fragments of light-coloured pottery with black glaze were found by our team at the refuge fortress Bulag (Fig. 2, find № 4) and in fort № 8 (Vaarny Shivee) (see above) (Fig. 2, find № 5).

In the territory of Alashan Right banner, as mentioned above, Tangut pottery fragments were found at the Xixia forts Talanbaixing 塔蘭拜興 (Fig. 2, find № 1) and Wulanbaixing 烏蘭拜興 (Fig. 2, find № 2) and at the fortress Wuhaixibe(bo) 烏海希貝 (勒) (Fig. 2, find № 3). In the territory of Alashan Left banner, as mentioned above, Tangut pottery fragments were found at the XiXia forts Tulegengaole 圖勒根高勒 (Fig. 2, find № 23), Huretu 呼熱圖 (Fig. 2, find № 24), Wurigennaigashun 烏日根乃嘎順 (Fig. 2, find № 25) as well as in refuge fortress Duerbenmaodao 都爾奔毛道 [Ministry of culture of IMAR, CPC & Institute of Cultural Relics and Archaeology, IMAR 2016: 150].

Fragments of Tangut vessels were found at ancient sites in Urad Rear banner [Gai Shan-lin 1995: 778–780; National cultural heritage administration 2003: 618–619]. Firstly, they were retrieved from Han fortresses belonging to the 'south line', i.e. 'fortified line of *GuangLu*': Chaolukulun 朝魯庫倫 (Fig. 1, find № 6), Qingkulun 青庫倫 (Fig. 2, find № 7), Wulankulun 烏蘭庫倫 (Fig. 2, find № 16), Wulijigaole 烏力吉高勒, Hariwusu 哈日烏

蘇 (Fig. 2, find № 8), as well as, according to information of the expedition Renmin university [The archaeology of northern ethnicity research Institute, RU & The Publicity dep. of Urad Rear banner's commiee, CPC 2010: 86–102, 116–133], at fortresses Hulusi (eastern) 呼魯斯東城 (fig. 2, find № 17), Wulanhuduge 烏蘭呼都格 (Fig. 2, find № 18), Chaganchaoluzhedege 查干朝魯扎德蓋 (Fig. 2, find № 19), Hana 哈那 (Fig. 2, find № 20), Arikulun 阿日庫倫 (Fig. 2, find № 21). Secondly, Tangut pottery has also been found at three fortified sites with earthen walls which, according to the data from the "Atlas of the cultural heritage of Inner Mongolia" [National cultural heritage administration 2003: 618–619], were extending in a chain from the "*GuangLu* line" fortress Hariwusu 哈日烏蘇 to the south-west: fortress HongQi 紅旗 (almost square of 108 × 110 m in plan, from the eastern side there is a gap 7 m wide, the walls are 2 m wide) (Fig. 2, find № 9), fortress Wulanhushu 烏蘭呼舒 (square in plan of 120 × 120 m, at the four corners there are protruding elevations, the walls are 3.5 m wide, on the east side there is a gap 6 m wide) (Fig. 2, find № 10), and fortress Chagan'erige 查干額日格 (with exactly the same form and dimensions as Wulanhushu) (Fig. 2, find № 11). These fortresses, in our opinion, can have been built equally either in the Han or in the Tangut period. In addition, pottery of XiXia was recorded by the expedition Renmin daxue at the fortress Dehadumaolai 德哈都毛賴 (Fig. 2, find № 22) [The archaeology of northern ethnicity research Institute, RU & The Publicity dep. of Urad Rear banner's commiee, CPC 2010: 124] which belongs, as mentioned above, of the 'northern line', i.e. XiXia line of defences. In the territory of Urad Middle banner, Tangut pottery, according to the atlas of cultural heritage [National cultural heritage administration 2003: 626], was found at the earthen fortress Arihuduge 阿日呼都格 (square of 54 × 54 m in plan, at the corners there are protruding elevations, the walls are 3 m wide, in the southern wall there is a gap 6.2 m wide) (Fig. 1, find № 12); this fortress is located approximately 10 km to the south from the 'northern' or Tangut wall; the authors of the atlas attribute the fortress to the state of XiXia. In the prefecture-level city Bayannur, near the foot of the *Lang-Shan* mountains, Tangut pottery, along with West-Han artefacts, is reported from the undoubtedly Han fortresses

JiLu 鷄鹿 (Fig. 2, find № 13), Budumaoergou 布都毛德溝 (Fig. 2, find № 14) and Dabatugou 大埧圖溝 (Fig. 1, find № 15) [Hu & Wang 2007: 102–104].

Judging from the text of XiXia "*Revised and newly endorsed law code of TianSheng era*" 天盛改旧新定律令 compiled in 1169, translated into Russian by Prof. E. I. Kychanov [Kychanov 1987–89], the XiXia State had a well fortified frontier with fortresses, watchtowers, forts and possibly with long walls, beginning from 11 century at least. "Far and near guards" have been sent to the frontier, they were submitted to commanders of "fortified settlements", and the latter -to "commandants of fortresses", while those submitted to frontier commanders disposed in "frontier towns". "If a sentry spots an enemy ... he must firstly inform a military commander of a fortified settlement to which he is himself submitted, and also a fortress, a town and neighbouring watches..." (Article 222). There were passes in the boundary through which one could only pass. Therefore the boundary line was fortified. For example the Article 229 runs as follows: "If guards at the boundary are ordered to close passes for a night, then commanders [of guards] and other officials must go to far posts and urgently arrange for the amount of men and the places where those must dispose." The frontier also had a system of signal watchtowers. "If those responsible for giving fire signals from signal towers at the boundary spot a sudden appearance of enemy troops, and if those commit an interval in giving fire signals in regular succession to cattlebreeders roaming about with their families, and to the neighbouring signal towers and military commanders ... " (Article 269). The existence of the fortified northern frontier of XiXia is also evidenced inter alia by the information from juan 60 of "*Yuan shi*" 元史 of which no satisfactory interpretation has hitherto been given: "In the fourth year [of the rule] of *Tai-zu* 太祖 [1209 CE], the Hexi invaded from the passage between the frontier posts, [situated] to the north from Heishuicheng and to the west from *WuLaHai*"<sup>(7)</sup>. Taking into consideration the mutual locations of the territory of the administrative district *HeiShui* (黑水城, Khara-Khoto) and the fortress *WuLaHai* 兀刺海 (to the north from the bend of the *Huang He*), on the basis of this information (7「太祖四年, 由黑水城北兀刺海西關口入河西, ...」(『元史』卷 60, 志第 12, 地理三, 甘肅等處行中書省)

alone, it was possible to state that to the north-east from Khara-Khoto, in the mountains in the south of modern Mongolia, there was a fortified borderline of the Tangut state having set-up passages provided with frontier posts. Article 9 of the chapter 4 of the Tangut "*New Laws*" ("*The Laws of the Year of Swine*", 1214 – 15 CE), translated by E. I. Kychanov, informs that by that time, on the eve of the fatal Mongolian invasion, "at all the frontiers in the remotest depths there are fortifications and watching towers, while the residents have the elder and junior leaders" [Kychanov 2013: 77]. Archaeological investigations have confirmed the trustworthiness of these records.

However, until now, no material remnants of the life of the pastoralist communities nearby the northern border of XiXia were known. In the 1950s –70s of the 20<sup>th</sup> century Kh. Perlee collected a lot of information about ancient settlements on the territory of modern Mongolia; according to him, in the south of the South Gobi aimag there should have been more than a dozen fortifications known to the local population [Perlee & Moidal 1970; Perlee 2001]. Unfortunately, not a single researcher has examined these fortresses, the localization of which by Kh. Perlee, as it turned out, was carried out with the greatest possible accuracy.

#### 1. Refuge fortresses of local pastoralists in modern Mongolian territory

During the work of our expedition in 2007 and 2009, we discovered and surveyed five refuge fortresses (see Fig. 2), of which at least three were known to Kh. Perlee's informants and are mentioned in his collection. Each of these structures is a dry wall made of flat stones or cobblestones, folded by masonry, with addition of wood, running along the ridge of rocks, enveloping from all sides a large gentle crevice leading to the top of the mountain (Fig. 10–13). At the edges of the cleft, the wall is interrupted to form the entrance to the fortification. This entrance was intended for the passage of herds of livestock, which were herded here in case of war danger. The sizes of the fortresses in Mongolian territory are from 110 m to 230 m in diameter. These refuge fortresses are: **Bulag fortress** (42° 11.275' N, 104° 28.850' E) (№ 1 in map, as mentioned above there had been found

fragment of XiXia pottery) (Fig.11; 14-1), **Khurmen tsagaan oboo fortress** (42° 27.970' N, 104° 41.050' E) (Fig.14-2), **Khalzaan uulyn baishint fortress** (42° 04.200' N, 105° 01.920' E) (Fig.14-3, named by Kh. Perlee), **Shivetiin shivee fortress** (42° 04.800' N, 105° 07.620' E) (Fig.12, 14-4, named by Kh. Perlee, **Chingisiin khar khot fortress** (42° 02.880' N, 104° 20.330' E) (Fig.13, 14-5, by Kh. Perlee named as Öndör khadny



Fig. 11. Dry-stone wall of the Bulag fortress with a gallery, ramp and niches



Fig. 12. Dry-stone wall of Shivetiin shivee fortress with tower



Fig. 13. The wall of the Chingisiin Khar Khot fortress made of cobblestone, earth and wood

khar khot).

## 2. Refuge fortresses of local pastoralists in modern Chinese territory

In Chinese territory by now discovered not less than 7 fortresses of same architecture. The largest is the fortress Dawulan. This grandiose structure is about 1 km long from north to south, and 1.5 km from west to east. The wall covers the upper reaches of a large gorge that stretches from the top of the mountains from northeast to southwest. The entrance to the fortress was carried out from the south-west, where its wall has a gap of 25 m when crossing the gorge. The height of the wall reaches 1.5 m, the thickness is 1.2 m. Dimensions of others fortresses similar to fortresses investigated by our expedition.

### 1. Alashan Left banner 阿拉善左旗

Arigeleyinxia 阿日格勒音夏日 (№ 6: 41° 13.511' N, 105° 1.299' E by Google Earth) [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 146], Narenxibo 娜仁希勃 (№ 7) [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 147], Wendu-ermaodaoxibo 温都爾毛道希勃 (№ 8: 40° 57.400' N, 104° 24.110' E by Google Earth) [Task force for the 3<sup>rd</sup> national cultural relics survey in IMAR 2011: 50; Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 148], Ekenxibo 額肯希勃 (№ 9) [Task force for the 3<sup>rd</sup> national cultural relics survey in IMAR 2011: 50; Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 149], Duerbenmaodao 都爾奔毛道 (№ 10: 41° 8.784' N, 104° 44.251' E by Google Earth) [Task force for the 3<sup>rd</sup> national cultural relics survey in IMAR 2011: 50; Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 150], as mentioned above there were found fragments of XiXia pottery).

### 2. Alashan Right banner 阿拉善右旗

Xibei 希貝 (No. 13), Xibei XiBeiZhangCheng 希貝西北障城 (No. 14) [Ministry of culture of IMAR, CPC & Institute of CRA, IMAR 2016: 50].

### 3. GuYang county 固陽

Dawulan 大烏蘭 (№ 11: 41° 14.150' N, 109° 42.010' E by Google Earth) [Hu & Wang 2007: 46–47].

### 4. Urad Middle banner 烏拉特中旗

Shilanji 石蘭計 (№ 12) [Hu & Wang 2007: 104–105].



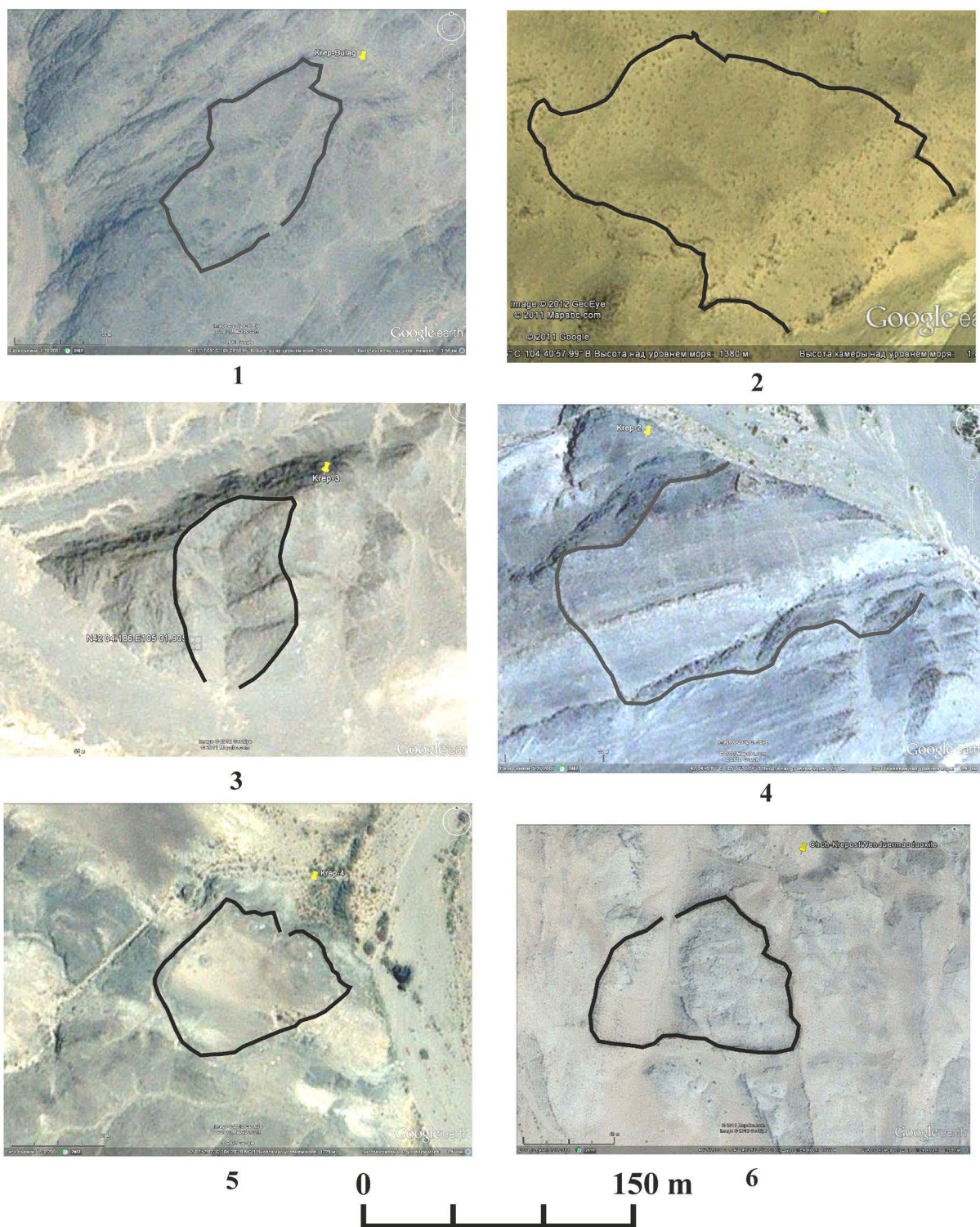


Fig.14 XiXia refuge fortresses

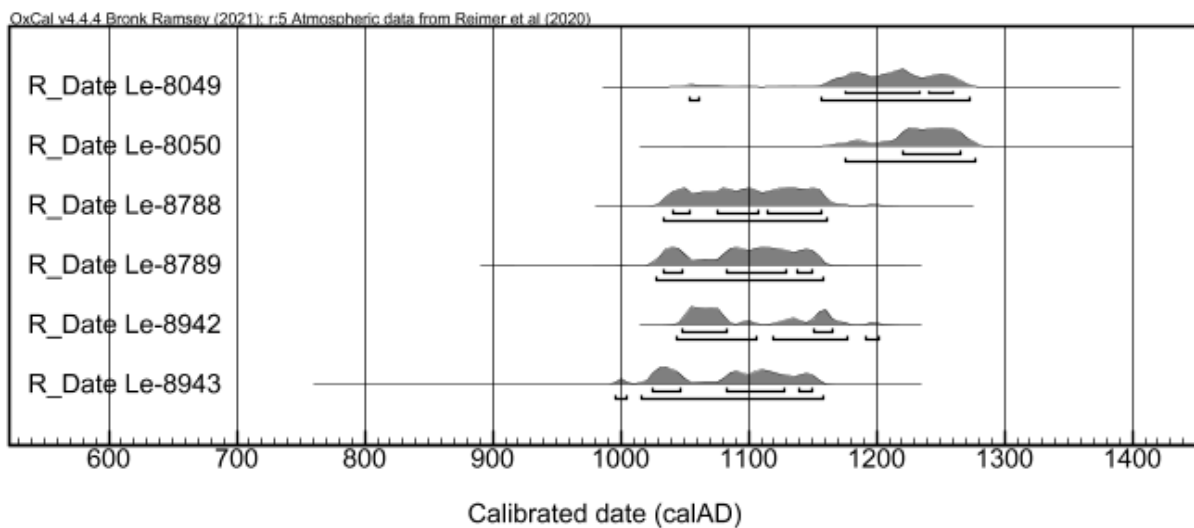
1 – Bulag; 2 – Khurmen tsagaan ovoo; 3 – Khalzan uulyn baishint; 4 – Shiveetiin shivee; 5 – Chingisiin khar khot; 6 – Wenduermaodaoxibo 温都爾毛道希勃 (by Google Earth photo)

In the course of the our expeditions 2007 and 2009 years, we have collected wood samples for radiocarbon analysis in order to determine the date of the construction of the refuge fortresses. The samples are the stems of

poplar used in the walling of three out of five fortresses. All these samples were investigated in the radiocarbon laboratory of the Institute for the History of Material Culture (IHMC) RAS in St Petersburg (see Table 2). All

Table 2 Radiocarbon dates of the refuge fortresses situated in South Gobi aimag

Site	Laboratory code	Material dated	<sup>14</sup> C date, BP	Range of calibrated age (68.2%)	Range of calibrated age (95.4%)
Refuge fortress Bulag	Le-8049	wood (poplar)	840±35	1175AD (52.8%) 1233AD 1240AD (15.5%) 1260AD	1054AD ( 1.1%) 1061AD 1156AD (94.4%) 1272AD
Refuge fortress Bulag	Le-8050	wood (poplar)	810±35	1220AD (68.3%) 1265AD	1175AD (95.4%) 1277AD
Refuge fortress Shiveetiin shivee	Le-8788	wood (poplar)	940±25	1041AD ( 9.2%) 1053AD 1075AD (25.6%) 1108AD 1114AD (33.4%) 1156AD	1034AD (95.4%) 1162AD
Refuge fortress Shiveetiin shivee	Le-8789	wood (poplar)	960±25	1034AD (13.0%) 1048AD 1083AD (44.6%) 1130AD 1138AD (10.7%) 1150AD	1027AD (95.4%) 1158AD
Refuge fortress Chingisiin khar khot	Le-8942	wood (poplar)	915±15	1048AD (51.0%) 1082AD 1151AD (17.3%) 1165AD	1044AD (57.3%) 1106AD 1119AD (35.7%) 1178AD 1192AD ( 2.5%) 1202AD
Refuge fortress Chingisiin khar khot	Le-8943	wood (poplar)	980±30	1024AD (23.6%) 1047AD 1083AD (37.3%) 1128AD 1139AD ( 7.4%) 1149AD	995AD ( 2.8%) 1005AD 1016AD (92.7%) 1158AD



dates belong to 11<sup>th</sup>– 12<sup>th</sup> centuries, i.e. to period of XiXia possession.

VI . Conclusions. XiXia north border in *Gan-Su* corridor

Thus, the data of written history and archeology available to date allow us to conclude that the lands north of the Yinshan mountains, the Alashan desert completely and the southern part of Mongolia were densely populated by people of XiXia state. Supervisory military administrations *BaiMa QiangZhen* 白馬強鎮, *HeiShui ZhenYan* 黑水鎮燕, *HeiShan WeiFu* 黑山威福 and *Mi'E zhou* 弥娥州 (?) were established in this territory. At the 12<sup>th</sup>– early 13<sup>th</sup> centuries, the state of XiXia built a de-

fensive line around this territory from the north, which included a long wall and earthen fortresses-camps for military detachments. This line was designed to defend against Mongol expansion. It roughly corresponded to the northern border of XiXia. This line ran north of the Han fortified "*GuangLu* line" and was twice its length. The standard architecture of the earthen fortresses of the Tangut line differs sharply from the standard architecture of the Han outer fortifications of "*GuangLu* line". There is no evidence that at least some part of the northern fortified line used by Tanguts could have begun to be built in the Han time. The idea that the Tanguts allegedly used the already existing Han wall here is an unscientific

myth, traditionally repeated by Chinese scholars by now. From XiXia defensive line to the south, a whole network of forts and signal towers was built, providing communication of the border troops with the central regions of XiXia state.

As for the localization of the northern border of Xi Xia further to the west, it most likely ran along the Han fortified line. To re-use this line for defense, the Tanguts additionally reinforced it with a rampart made of wood, bundles of reeds and earth layers. These reed-and-earth walls opened by A. Stein more than 100 years ago are now shown to tourists as a Han structure near *DunHuang* 敦煌. However, most likely, this is the result of the completion of the Han fortifications 1300 years later. According the XiXia "Revised and newly endorsed law code of TianSheng era" 天盛改旧新定律令 compiled in 1169 translated by prof. E. I. Kychanov [Kychanov 1987-89], in state storehouses of XiXia a tremendous amounts of brushwood was stocked in faggots. Departments of transport of a corresponding territory should have been supplied with brushwood (willow) and reed. Article 1128 stated: "A transport department of military governed administrative district in accordance with the Law should obtain hay and brushwood from all owners of tax homesteads within it's jurisdiction and to create stores to keep those.". Brushwood and reed have been taken only in bunches, and there were strictly fixed dimensions of bunches of each kind: "Owners may bring reed, red willow, or "mulo" (?) instead of brushwood, in one bunch 4 *chi*<sup>(8)</sup> from each 15 *mu*<sup>(9)</sup> of his land. Bunches of above mentioned kinds should be 5 *cun*<sup>(10)</sup> each, and non-standard bunches should not be taken." (Article 1129). Thus a standard length of a bunch was 1.2 metres and it's thickness was 16 cm, that to my mind corresponds with information about reed bunches that have been used for building the long wall in *DunHuang* region. Bunches of this kind were found on the tower D 17, and other structures investigated nearby long walls in Hexi region [Wu Reng-xiang 2005: 47-131, Fig. 38]. Every layer in the *DunHuang* wall is two such bunches thick [Wu Reng-xiang 2005: 47-131, Fig. 44]. Moreover

(8 *Chi* 尺 is a unit of length.

(9 *Mu* 亩 is a unit of area.

(10 *Cun* 寸 is a unit of length. It means thick in here.

there were special stores of reed and rush that is stated in Article 1226. Article 1231 mentions "stores of reed and rush in the Rambe valley of Dingyuan district". Unfortunately, no one has done a <sup>14</sup>C analysis of these wood and reed structures so far. The problem of localizing the XiXia border in the *GanSu* corridor is described in detail in a special article by A. A. Kovalev published in 2011 [Kovalev 2011: 146-157].

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## Abbreviation:

IMAR — Inner Mongolia Autonomous Region

RAS — Russian Academy of Sciences

CPC — The Communist Party of China

БНМАУ — Бүгд Найрамдах Монгол Ард Улс (Mongolian People's Republic)

ГУ — Государственный Университет (National University)

М — Москва (Moscow)

СПб — Санкт-Петербург (Sankt Petersburg)

СССР — Союз Советских Социалистических Республик (USSR: Union of Soviet Socialist Republics)

УБ — Улаанбаатар (Ulaanbaatar)