

PRELIMINARY REPORT ON THE CERAMICS OF CHINESE ORIGIN FOUND EAST OF THE OLD MONGOLIAN CAPITAL KARAKORUM

Anne Heussner

Berlin

During summer 2011 and 2012 a survey beyond the eastern city wall of Karakorum, the ancient capital of the Mongolian Empire, was carried out in connection with a new field project of the University of Bonn and the Institute of Archaeology, Mongolian Academy of Sciences. Following the results of the excavation in the city's centre between 1999 and 2005 the new project's purpose was to document metal trade outside the city as well.¹ During the survey numerous sherds of ceramics of Chinese origin were collected. The recording of the findings in a database began while the fieldwork was still in progress. The finds were washed, photographed and labeled according to the measurement system of the Mongolian-German Karakorum Expedition.² The survey was finished in summer 2012, but so far only parts of the material of the 2011 campaign have been analyzed.

The archaeological research on Chinese pottery from Karakorum is of special interest for Mongolian history and an understanding of the economic networks in Central Asia in the 13th - 14th century CE. Karakorum is said to have been founded by Chingis Khan in 1220, but it seems certain work was started under his second son, Ögödei Khan, in 1235. It was the first Mongolian capital of the Great Mongol Empire that was soon to split into four separate but still interconnected parts.³ Some historical evidence about the medieval multi-cultural town can be found, for example, in official Chinese records like the *Yuan Shi* (元史).⁴ Further written evidence about the town is in Persian historical works such as that by Rashid al-Din⁵ and in travel accounts by early missionaries like William of Rubruck.⁶ However, detailed knowledge about Karakorum and the roughly 160 years in which it flourished is scarce. Archaeological research is necessary to flesh out the history of the town and its role in the vast medieval Central Asian network. Part of this research is the study of imported ceramics in and around Karakorum which are mainly of Chinese origin. The composition and provenance of those ceramics reflect the connections Karakorum had to central China and its industry. The study of the ceramics is therefore valuable for shedding light on the urban history of Karakorum.

The Material

By far the highest percentage in the finds around Karakorum is ceramics. Glazed ceramics of Chinese origin constitute about 77% of all finds so far recorded in the database. The material resembles the ceramics found during the excavations on the walled territory of Karakorum in the years 2000-2005.⁷ All of the major wares found inside Karakorum were found as well on the survey around it. Namely those are common Chinese wares from the Song (960-1279) and Yüan Dynasty (1261-1368) produced in Northern and Southern Chinese kiln systems: *Cizhou* (磁州), *Jun* (钧), *Jian* (建), *Longquan* (龙泉), and *Jingdezhen* (景德镇). They will be discussed in detail later. Some of the minor wares which were found inside Karakorum are missing in the surroundings, though it must be emphasized that not all of the material is recorded in the database yet. Additionally, ceramics such as lustre ware of Iranian manufacture are very rare in Karakorum itself. Only a few sherds of such ware were found during the excavation. It is not surprising that none of them was found during the survey in the surroundings. Conclusions about missing wares cannot be made before the material is recorded completely. Basically the ceramics seem to be about the same in and around Karakorum. To what extent their composition differs in and outside the town and how that may have changed over time is a subject for further research.

The sherds found during the survey usually are small to medium size. Starting in the area close to the Erdene zuu monastery, where the survey began, the sherds were about 4-9 cm² in size. They were very loosely scattered around the area. Where the survey got closer to the area of the eastern gate of Karakorum the density of the sherds increased substantially. The majority of the material was found there, and most of it is not even recorded in the database yet. The average size of the sherds in that area is slightly larger than that of the sherds found in the other areas, starting generally with at least 6 cm² and in rare cases reaching sizes of almost 100 cm². Though no complete vessel was found, an almost complete lid, which is to be discussed in the paragraph on the Northern Chinese

White wares (Cizhou wares), was found close to the eastern gate area.

Dating

The majority of the material can be dated to the Yüan (1261–1368) or Song (960–1279) dynasties. Many of the innovations made in the development of ceramics and new wares that came into existence during the Song dynasty, which is a highpoint in the history of China's ceramic industry, lasted from Song times up into the Ming (1368–1644) period. Therefore some of the sherds cannot be definitely dated to one or the other period. In general the material is consistent with the historical dating of Karakorum. Few ceramics from post-Yuan (meaning post-Karakorum) times were found. They date roughly to around the end of the Ming dynasty – beginning of the Qing dynasty (1644–1911), i.e., the beginning of the 17th century. Around this time the monastery of Erdene zuu was built on the ruins of Karakorum, and life in the area revived.⁸ Still those younger ceramics constitute only about 3.5% of the Chinese ceramics recorded so far. They are not known from the excavations in Karakorum itself.

Methods

Chinese ceramics deriving from Song and Yüan Dynasty times are, in general, divided into different kiln systems and the wares they produced. The wares are distinguished by the color and character of the glaze

and of the sherd itself. Groups of ceramics classified by the glaze roughly correspond with kiln systems in which the wares were produced. Though a single kiln system might have produced more than one ware, often it was renowned for a specific one. Sometimes a kiln system copied the wares of another. They were several kiln sites belonging to one kiln system that could have produced different wares as well. So grouping the material by glaze is a preliminary means of determining the origin of the ceramics. Another indicator of the origin is the character of the sherd itself. Due to natural resources, different kinds of kilns, and different clay that was used for the production, Northern Chinese wares usually are to be defined as stoneware, whereas Southern Chinese wares are porcellanous.⁹ Further indicators such as décor or marks can be used to assign a sherd to a kiln system and possibly even to a specific kiln site. In the case of the small fragments found on the survey this is not possible. Still they do contain information about their approximate origin via their glaze and the structure of their sherd. Therefore they reflect the connections Karakorum had to the different parts of China and thus constitute a valuable subject of research.

The sherds were collected by Birte Ahrens, University of Bonn, Mongolian students and partly by the author herself. In 2011 the survey started southeast of the walled territory of Karakorum, close to the monastery Erdene zuu. It reached the area close to the eastern gate of Karakorum and was continued there in 2012.

After being cleaned the sherds were photographed and recorded in a database. The main criteria recorded were: ID, localization, number of sherds, the kind of fragment found (rim, wall, and bottom), the color and character of the sherd, the color of the glaze, forms of decoration, motifs, marks, signs of repair, and signs of production. On the basis of those criteria general groups of wares were formed, the main criterion being the glaze. The main groups being discussed in this preliminary report are: White ware, Black and Brown ware, Thickly-glazed Blue ware (Jun ware 钧), Green-glazed ware (Longquan Celadon 龙泉), Bluish White-glazed ware (Qingbai ware 青白), Blue and White ware (Qinghua ware 青花), and Post-Yüan Polychromous wares. Examples for those wares are given in the following paragraphs (Fig. 1).



Fig. 1. Distribution of Kiln Sites in Ancient China.

White Wares

White wares make up about 50% of all Chinese wares found and recorded during the 2011 survey. White glazed wares and wares covered with a white slip and an almost transparent glaze were quite common during the Song and Yüan dynasties. A lot of those wares were produced in the Cizhou kiln system which is named after a location of excavated kilns in Cixian district, Hebei province (Pierson 2009, p. 23). This kiln system produced a wide range of popular stonewares during the Song and Yüan dynasties. The production sites were spread across northern China. Kilns belonging to this system were, for example, found in Hebei and Henan provinces.¹¹

The best preserved piece recorded from the survey so far is a Cizhou-type lid. It consists of creamy stoneware that was coated with white slip and has underglaze painted decoration showing brown floral sprays on a white ground. The inside is partly glazed and has a diameter of 12.7 cm. Its outer diameter measures 19.0 cm and its height is 5.6 cm. It is most likely to be dated to the Yüan Dynasty, though those wares started to be produced during the Song Dynasty. The slip painting decoration seen on the lid is a characteristic technique of Cizhou-type wares (Pierson 2009, p. 23). The black/brown and white design is a stylistic development that foreshadows the blue and white designs which dominated Chinese ceramics in the Ming Dynasty (Fig. 2).

Only a few Cizhou-type sherds showing decorations other than black or brown painting on white ground were found in the area surrounding Karakorum. However, they could be decorated in many other ways as well, including relief created by cutting layers of slip, and overglaze enamel decoration. An example for White ware with

Fig. 2. Lid of Cizhou-type.



Photos © Nico Becker



Photos © Anne Heussner

Fig. 3. a) Potsherd with overglaze enamel decoration of Cizhou-type; b-e) Potsherds of Black & Brown ware.

cut relief decoration is a sherd on which the relief of a chrysanthemum can be seen. The best example for colored overglaze decoration from the survey so far is a sherd showing red and green floral enamel decoration on white ground. The overglaze enamel decoration is

of special importance since it was the earliest overglaze decoration in China. It was created in the Cizhou kiln system (Wang 2002, p. 237; Pierson 2009, p. 25) (Fig. 3a).

Those examples of Cizhou-type wares date to the Yuan Dynasty. Generally most of the Chinese wares used in Karakorum that seem to derive from this kiln system were produced during the 12th - 14th centuries. Sherds of Cizhou-type ware showing different decoration techniques were found during the survey of the surrounding areas of Karakorum as well as during the excavations on the walled territory of Karakorum itself. The findings published so far cannot be connected with a specific Cizhou kiln site.¹²

Black & Brown Wares

Another ware partly produced within the Cizhou kiln system is Black and Brown ware that is

(left) Fig. 4. Black & Brown ware bowl from the excavation in the city's center of Karakorum.

(right) Fig. 5. Jun-bowl from the excavation in the city's center of Karakorum.

generally connected with Song dynasty tea-drinking ceremonies. The more popular Black and Brown wares though derive from the Southern Chinese Jian kiln system. They are also known as *temmoku* wares, which is their Japanese name. This rather southern Chinese ware was imitated and produced in northern Chinese kilns as well. Black and Brown wares constitute almost 11% of the Chinese ceramics recorded in the survey so far. They derive from kiln systems that include the Cizhou, the Ding (Hebei province), the Jian (Fujian province), and the Jizhou (Jiangxi province).¹³ Sherds of Black and Brown ware found on the survey are rather small. Examples are shown in Fig. 3c–e. Black and Brown wares found around Karakorum frequently show russet streaks on a black ground as decoration. This decoration can be seen on finds from the excavations inside Karakorum as well, where larger pieces of tea ware like the example shown in Fig. 4 were found. Fragments showing a white glazed rim as further decoration were found in and around the town (Fig. 3b). However, the sherds of Black and Brown ware found on the survey do not show the big variety of the ones found inside Karakorum. They partly re-semble the black wares excavated by the Russian archaeologist Sergei V. Kiselev in Karakorum in 1948–49. Those are assumed to derive from Henan, Hebei and Shanxi provinces (Meikotu and Ochir 2007, p. iv), thus being – like the Cizhou-type wares – wares of northern origin.

Thickly-glazed Blue Ware (Jun Ware 钧)

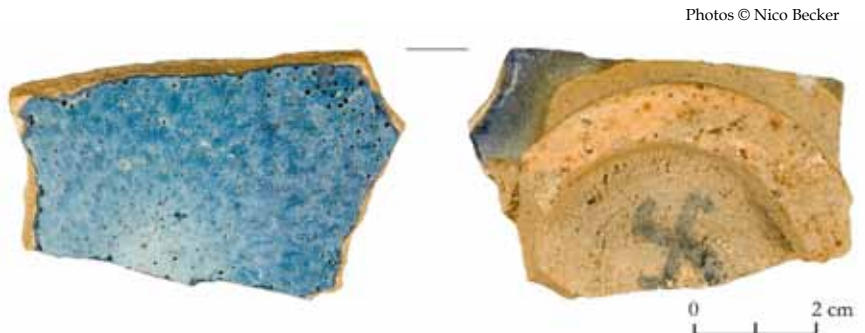
Another connection from Karakorum to regions of Henan province is shown by the thickly-glazed blue Jun ware sherds found on the survey and in Karakorum itself. The Jun kiln system produced thickly glazed blue (sometimes green) bowls of different shades that could be decorated with purple splashes in in-glaze decoration. The



thick glaze is very distinctive and sherds of this ware are easy to classify.¹⁴ They were mainly produced during the Song and Yüan dynasties. Interestingly Jun ware was of such fame that it was imitated in the Southern Chinese kiln system of Jingdezhen during the Qing Dynasty (Kerr 1993). None of those younger Jun imitations were found in or around Karakorum. The Jun ware from Karakorum dates from the Song and Yuan dynasties. A few nearly intact bowls were found during the excavations (Fig. 5).

A special feature of Jun ware is that it regularly displays marks in form of written Chinese characters (such as family names of the producers or numbers). Two Jun bottom sherds found on the survey have marks that are not characters. One of them is a sherd of a blue-glazed Jun bowl, with a swastika painted in black on the bottom (Fig 6). So far, no other example of a mark like this is known to the author. The other

Fig. 6. Fragment of a blue-glazed Jun-bowl with a painted swastika on the bottom.





(left) Fig. 7. Fragment of a green-glazed Jun-bowl with a flower painted in black on the bottom from the survey.

(right) Fig. 8. Fragment of a green-glazed Jun-bowl with a flower painted in black on the bottom from the excavation in the city's center of Karakorum.

example is a sherd of a green-glazed Jun bowl, marked with a flower painted in black on the bottom (Fig. 7). A similar mark was found on another green-glazed Jun bowl excavated in the centre of Karakorum, though the flower was painted in a different style (Fig. 8). Other examples of flower-like marks on Jun ware are not yet known to the author. The only other flower mark known to the author so far is on the bottom of a plate from the southern Chinese Jingdezhen kiln system found in Jininglu (集宁路), Inner Mongolia (Chen 2004, p. 20). The meaning and derivation of these marks remain to be determined. Generally less than 1% of the ceramics recorded at the survey shows marks. Those that do frequently have only fragments of the Chinese characters. A few marks can be seen on the published pictures of the ceramics excavated in Karakorum by Kiselev (Meikotu and Ochir 2007). They have not been displayed and discussed in detail though. In the current survey, marks were found only on White ware (Cizhou ware) and Jun ware.

Green-glazed Ware (Longquan Celadon)

Though most of the wares found in and around Karakorum derive from Northern Chinese kiln systems that produced ceramics for daily use, wares of Southern Chinese origin that were produced for export were found

as well. Those Southern wares mostly derive from the Longquan or the Jingdezhen kiln system. Longquan in Zhejiang province was especially famous for its jade-like greenwares during Song and Yüan dynasty times. Those so-called celadons are porcellanous wares that resemble jade, being glazed in various shades of green. Longquan celadons were renowned export ceramics that are often unearthed in other

Asian countries, among them Japan and Korea.¹⁵

Celadons constitute only 3% of the Chinese ceramics recorded by the survey. However, they are well known in the material from the excavations in Karakorum (Erdenebat et al. 2010; Meikotu and Ochir 2007). As with most of the Northern wares described above, celadons started to be produced during the Song Dynasty and reached their peak during the Yüan Dynasty. Lots of complete celadon vessels from the Yüan dynasty have been found, for example, on the Sinan wreck – a merchant ship that sank about 1323 close to Korea and was discovered in 1975 by a fisherman.¹⁶ Some of the celadons found on the wreck resemble celadons found in and around Karakorum, which proves that the latter are (at least partly) Southern Chinese export wares from the Yüan Dynasty. One of the most beautiful sherds of celadon found on the survey is a bottom piece of a plate decorated with a lotus motif (Fig. 9). The carved

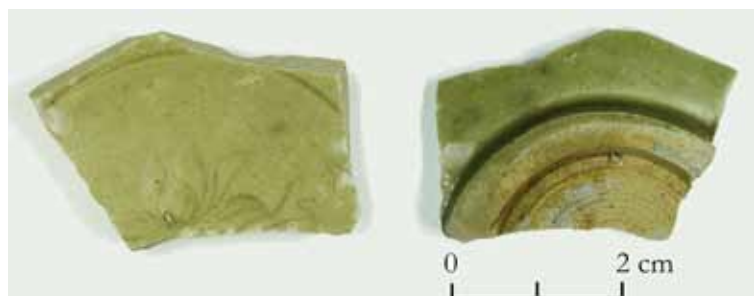


Fig. 9. Celadon potsherd.



Fig. 10. Qingbai ware.

lotus design, circled by an incised line, is situated in the middle of the plate. The lines are highlighted by the accumulation of the olive green glaze inside them. Similar pieces of Longquan dishes decorated with a lotus design have been found in Jininglu, Inner Mongolia, and date to the Yuan Dynasty (Chen 2004, pp. 84, 118–19).

Bluish White-glazed Wares (Qingbai Wares 青白)

About 8% of the Chinese ceramics from the survey recorded so far are of a fine porcellanous structure with a bluish white glaze known as *qingbai* (青白, bluish white) or *yingqing* (影青, shadow blue). The kiln system most famous for producing this ware is Jingdezhen in southern China.¹⁷ Like the green Longquan celadon wares, these qingbai-glazed wares are supposed to appear jade-like. The decorations on the sherds found around Karakorum are incised or impressed. Insofar as the motifs are recognizable, the designs are usually floral (Fig 10a). Most of the sherds from Jingdezhen are rather small (Fig. 10b), which makes it hard to distinguish their features and compare them with other finds. Still they provide evidence of fine Southern Chinese export ware in and around Karakorum. They date to Song and Yüan Dynasty times.

Fig. 12. Blue & White ware.

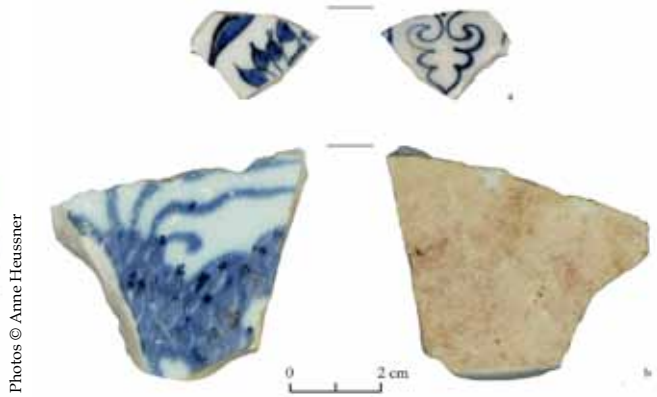
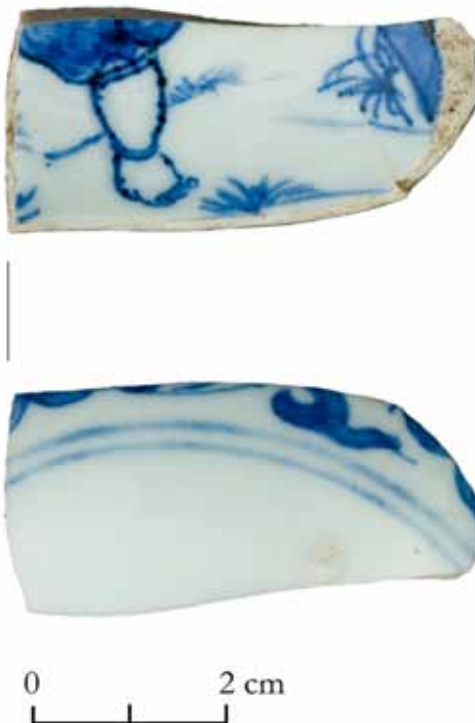


Fig. 11. Blue & White ware.

Blue and White Ware (Qinghua Ware 青花)

Blue and White ware, which is quite distinctive, derives from the same kiln system (Jingdezhen) as the Bluish white-glazed ware, though in part it is younger than the qingbai ware. The fine porcellanous (and later porcelain) ware decorated with blue underglaze painting first appears during the Yüan Dynasty. It became very popular as export ware under the Ming Dynasty. When famous Chinese Ming porcelains are mentioned today, most people think about Blue and White ware. During the survey only a very few small pieces of Blue and White ware were found. One of them shows on the outside of the vessel a cloud collar characteristic of the late Yüan Dynasty period and a floral motif on the inside (Fig 11a). On the outside of another sherd are parts of a dragon, a famous motif on Blue and White ware during the Yüan and Ming dynasties. This sherd is from a vessel that remained unglazed on the inside and most likely is to be dated to the late Yüan Dynasty, rather than to the early Ming Dynasty (Fig. 11b). Some almost complete bowls of Blue and White ware were excavated in a temple in Karakorum itself (Janßen-Kim 2006). The Blue and White ware from the excavations in the center of the town is mostly small fragments. Usually they are decorated with floral motifs. Sometimes parts of a dragon can be recognized. One piece shows the leg of a person (Fig. 12).

Photos © Nico Becker

Fig. 13. Post-Yüan Polychromous Wares.

Post-Yüan Polychromous Wares

There is evidence around Karakorum for ceramics and porcelain dating to the post-Yüan period. However, there is little of it, only about 3% of the ceramics recorded so far. They seem to date from the end of the 16th or beginning of the 17th century and later. Lots of the younger pieces found are white porcelains with a transparent glaze which are not exactly datable though likely to derive from the late Ming or early Qing Dynasty. There are only a few notable pieces. One of them is a sherd of a vessel with overglaze red and underglaze blue design (Fig 13a). This decoration technique was invented in the 15th century (Wang 2004, p. 234). Since the sherd is too small to recognize the motif, a precise dating is impossible, though it is most likely from the Ming Dynasty, sometime between the 15th and the 17th century. Two very small fragments of porcelain with polychrome overglaze decoration probably date from the beginning of the Qing Dynasty in the 17th century. Unfortunately such fragments are too small to allow determination of the motif once painted on them (Fig. 13b-c), and it is impossible to date them precisely. The only younger sherd with a recognizable motif is a bluish-white rim sherd with polychrome décor. A colored key fret pattern circles the outer rim. The spirals appear in twos, each pair being painted in a different color from the next. The key frets that can still be seen are light blue, light green and red in color. The background of the scroll is painted yellow. Underneath it a dragon was painted with underglaze black lines and overglaze blue and red. The colors are not very carefully applied. Only the outer part



of the vessel was decorated. The author has so far been unable to find a matching parallel to this décor (Fig. 13d). Possibly this sherd dates to the early Qing Dynasty, but more research is needed to be certain.

Signs of Repair

A special feature of the ceramics found in and around Karakorum are signs of repair, found on sherds from almost all the kiln systems. About 1% of the recorded ceramics of the survey show non-piercing holes of about 3mm in diameter. Sometimes there are traces of metal clamps which held the vessels together. Those signs of repair are known from the ceramics excavated in Karakorum (Meikotu and Ochir 2007, p. vi). Most of the drilling holes seem to be signs of repair, though some of them were made for attaching handles to a vessel, as an example excavated in the center of Karakorum shows (Fig 14). Interestingly those repairs did not happen exclusively on fine, porcellanous wares. Most of the signs of repair found on the survey are on White ware vessels, an example being three matching sherds with four drilling holes on the outside, each having a diameter of 3 mm. Two of the holes are filled with rust. Tracks of rust on the glaze partly reveal the shape of the lost metal clamps. Traces of rust can be seen as well on the fracture of the sherd (Fig. 15). Obviously in Karakorum ceramics for daily use as well as fine wares got repaired. Examples of White ware and moon-blue Jun ware are shown in Fig 16a-b. Even wares with a very coarse temper like the one shown in Fig 16c were repaired and re-used. The drilling holes and the technique of repair are the same as the ones used on fine Southern Chinese wares shown in Fig 16d-e.

Fig. 14. Vessel with an attached handle from the excavation in the city's centre of Karakorum.



(left) Fig. 15. Rim sherds of a bowl with repair holes.

Photos (left) © Nico Becker; (right) © Anne Heussner.



(right) Fig. 16. Repair holes in different sherds.

Results

So far the evidences from the Chinese ceramics recorded on the survey east of Karakorum indicates that ordinary Northern Chinese wares as well as fine Southern Chinese export wares were in use in and around the town in the Yüan period. The vast majority of the wares are those for daily use produced in the Northern Chinese Cizhou kiln system. Around the area of the eastern gate of Karakorum the density of sherds is very high. Aerial pictures suggest that beyond there was as well a suburban settlement during the Yüan Dynasty. Wares of daily use and fine wares were repaired with metal clamps that were fixed in non-piercing holes of about 3 mm diameter drilled on the outside of the vessel. In general the material found in and around Karakorum is similar to that found in contemporaneous sites in Inner Mongolia such as Jininglu (Chen 2004). Though these are wares that often were first produced during the Song Dynasty and partly remained in vogue until the Ming Dynasty, the parallels to the finds at Jininglu and on the wreck of Sinan suggest that most of the ceramics date to the Yüan dynasty, specifically around the end of the 13th - beginning of the 14th century, as Meikotu and Ochir (2007, p. vi) have already suggested. The material from recent excavations in Karakorum is

still to be analyzed. It seems rather likely that some of the ceramics found in Karakorum could be dated to the Song Dynasty as well. Ceramics dating to post-Karakorum times have only rarely be found. While for the most part they cannot be precisely dated, it is likely that they are from the Ming - Qing Dynasty transition at the end of the 16th - beginning of the 17th century. However, there does not seem to have been much settlement in and around Karakorum beyond the Yüan Dynasty.

About the author

Anne Heussner studied Pre- and Proto-history as well as Central Asian Studies at the Humboldt University, Berlin; she is currently a Ph.D. candidate at the University of Bonn, whose Karakorum project she joined in 2010. In 2011 she spent five months in Ulaanbaatar, Mongolia, to record ceramics excavated in Karakorum in a database and also to participate in the survey project around Karakorum which found the ceramics discussed in this article. Her Ph.D. thesis (EDC 2014), about the imported ceramics found in Karakorum, is being supervised by Prof. Dr. Jan Bemmman, University of Bonn and Prof. Dr. Mayke Wagner, German Archaeological Institute, Berlin. E-mail: <anneheussner@googlemail.com>.

References

- Abramowski 1976
- Waltraut Abramowski. "Die chinesischen Annalen von Ögedei und Güyük. Übersetzung des 2. Kapitels des Yüan-shih." *Zentralasiatische Studien* 10 (1976): 117–67.
- Bemmann et al. 2010
- Jan Bemmann et al., eds. *Mongolian-German Karakorum Expedition, Vol. 1. Excavations in the Craftsmen Quarter at the Main Road*. Forschungen zur Archäologie Außereuropäischer Kulturen Vol. 8. Wiesbaden: Reichert, 2010.
- Brandt and Gutschow 2003
- Andreas Brandt and Niels Gutschow. "Erdene Zuu. Zur Baugeschichte der Klosteranlage auf dem Gebiet von Karakorum, Mongolei." *Beiträge zur Allgemeinen und Vergleichenden Archäologie* 23 (2003): 21–48.
- Bureau of Cultural Properties 1985
- The Bureau of Cultural Properties, Ministry of Culture and Information. *Relics salvaged from the seabed off Sinan*. Seoul: Dong Hwa Publ. Co., 1985.
- Chen 2004
- Chen Yongzhi. *Nei Menggu Jininglu gu cheng yi zhi chu tu ciqi* 内蒙古集宁路古城遗址出土瓷器 [Porcelain Unearthed from Jininglu Ancient City Site in Inner Mongolia]. Beijing: Wenwu, 2004.
- Erdenebat et al. 2010
- Ulambayar Erdenebat, Melanie Janßen-Kim, Ernst Pohl. "Two Ceramic Deposits from the Territory of Karakorum." In: Bemmann et al. 2010: 4962.
- Golden 2011
- Peter B. Golden. *Central Asia in World History*. Oxford: Oxford University Press, 2011.
- Gompertz 1980
- Godfrey St. G. M. Gompertz. *Chinese Celadon Wares*. London: Faber and Faber, 1980.
- He Li 1996
- He Li. *Chinese Ceramics. A New Comprehensive Survey*. New York: Rizzoli, 1996.
- Janßen-Kim 2006
- Melanie Janßen-Kim. "Blauweiße chinesische Importkeramik aus Karakorum, Mongolei." *Zeitschrift für Archäologie Außereuropäischer Kulturen* 1 (2006): 83–92.
- Kerr 1993
- Rose Kerr. "Jun Wares and their Qing Dynasty Imitation at Jingdezhen." In: *The Porcelains of Jingdezhen. Colloquies on Art & Archaeology in Asia* No. 16, ed. Rosemary E. Scott. London: Percival David Foundation of Chinese Art, 1993. 150–64.
- Li and Cheng 1996
- Li Zhiyan and Cheng Wen. *Keramik und Porzellan in China – Vom Tontopf der Steinzeitmenschen zur Porzellankunst*. Beijing: Verlag für fremdsprachige Literatur, 1996.
- Meikotu and Ochir 2007
- Kamei Meikotu and Aiuudain Ochir. *Ceramics Discovered at the Kharkhorum Site I*. Fukuoka: Tokashobo, 2007.
- Mowry 1996
- Robert D. Mowry. *Hare's Fur, Tortoiseshell, and Partridge Feathers. Chinese Brown- and Black-glazed Ceramics, 4001400*. Cambridge, MA: Harvard Univ. Pr., 1996.
- Pierson 2009
- Stacey Pierson. *Chinese Ceramics*. London: V&A, 2009.
- Pierson et al. 2002
- Stacey Pierson et al., ed. *Qingbai Ware: Chinese Porcelain of the Song and Yuan Dynasties*. London: Percival David Foundation of Chinese Art, 2002.
- Rashid/Boyle 1971
- John Andrew Boyle. *The Successors of Genghis Khan. Translated from the Persian of Rashid al-Din*. New York: Columbia University Press, 1971.
- Rubruck/Jackson 1990
- Peter Jackson, tr. and ed. *The Mission of Friar William of Rubruck: His Journey to the Court of the Great Khan Möngke 1253-1255*. London: Hakluyt Society, 1990.
- Wang 2002
- Wang Qingzheng. *A Dictionary of Chinese Ceramics*. Singapore, 2002.
- Wood 1998
- Nigel Wood. *Chinese Glazes*. London: A. & C. Black, 1998.

Notes

1. See the article by Ernst Pohl et al. in this issue of *The Silk Road*.
2. For information on the project and first results see Bemmann et al. 2010.
3. Those parts are the regions of the so-called "Golden Horde" (Ulus Jöchi) extending from western Asia into Russia, the Chaghataids in Central Asia, the Il-khans in the Iranian areas of the Middle East and the Yüan Dynasty in China whose control encompassed Karakorum. For more information see, e.g., Golden 2011 with a map of the territories on p. 86.
4. The "Annals of the Yüan Dynasty," partly translated into German, for example, by Abramowski 1976.
5. Translated into English by Boyle (Rashid/Boyle 1971).
6. The standard translation into English is that by Jackson (Rubruck/Jackson 1990).
7. Excavations in the so-called craftsmen quarter were carried out by Prof. Dr. Helmut Roth and Dr. Ernst Pohl, both University of Bonn, Germany, within the framework of the Mongolian-German Karakorum Expedition. First results are published in Bemman et al. 2010. The glazed ceramics excavated in the campaigns 2000–2005 are the subject of the

Ph.D. thesis of the author of this article.

8. Erdene zuu was built in 1588. For further information on the monastery see Brandt and Gutschow 2003.

9. The term “porcellanous” refers to wares that are high fired (1200–1300°C) and contain a certain amount of kaolin (‘porcelain earth’) though not enough to call them porcelain by technical and chemical definitions. However, in China stoneware and porcelain usually are not distinguished from one another. Both are referred to as “high fired wares/porcelain,” *ciqi* (瓷器) or *taoci* (陶瓷).

10. See the article by Ernst Pohl et al. in this issue of *The Silk Road* for further information about the survey.

11. For information on Cizhou-type wares see, e.g., Wang 2002, p. 153; He Li 1996, pp. 139–40; Chen 2004, pp. 10–12; Li and Cheng 1996, p. 112.

12. See for ceramics from Karakorum Meikotu and Ochir 2007; Erdenebat et al. 2010.

13. For information on Black and Brown ware and the connected kiln systems see, e.g., Pierson 2009, p. 27; Li and

Cheng 1996, pp. 116–17; He Li 1996, p. 139; Wang 2002, pp. 154–5, 159–61, 217; Mowry 1996.

14. For information on Jun ware see Wang 2002, p. 161; Pierson 2009, p. 20; Li and Cheng 1996, pp. 110–11; He Li 1996, p. 142; Chen 2004, pp. 12–14. For Jun ware excavated in Karakorum see Meikotu and Ochir 2007.

15. For information on Longquan celadons see, e.g., Wang 2002, p. 163; Pierson 2009, pp. 27–33; Li and Cheng 1996, pp. 108–10; He Li 1996, pp. 136–8; Chen 2004, pp. 15–17; Gompertz 1980.

16. Findings published, for example, in a catalogue compiled by The Bureau of Cultural Properties, Ministry of Culture and Information, Korea (Bureau of Cultural Properties 1985).

17. For information on the Jingdezhen kiln system see, e.g., Wang 2002, p. 160; Chen 2004, pp. 19–21; Li and Cheng 1996, pp. 114–15; He Li 1996, pp. 138, 142–3; Pierson 2009, pp. 30–33; Pierson et al. 2002.