



# Archaeological discoveries in Tuva: excavations of the Ala-Tey and Terezin cemeteries of the Xiongnu period in 2015–2016

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## Abstract

Archaeological sites in the territory of Tuva possibly related to the Xiongnu culture include the burial sites of Bay-Dag 2, Aymyrlyg-XXXI, Urbiun-III, and the recently discovered burial sites of Terezin and Ala-Tey, all located in the Ulug-Khem (Yenisei) River basin, at the entrance to the Sayan canyon of Yenisei. This critical location marks the start of the route to the Minusinsk Hollow through the Sayan Mountains and possesses the largest and best grazing areas in Central Tuva. About 50 flat graves of the Xiongnu period have been excavated at Ala-Tey and Terezin: burial types include stone cists and pits faced with stone or wood. Burial positions were mainly stretched, supine but several burials feature flexed legs. Each grave contained either one or two ceramic vessels. Unlike Ala-Tey, at Terezin, weaponry was found, namely, a bone bow strengthener and an arrowhead. Burials at both sites include many decorations for belts and clothing, beads, pendants, earrings, Chinese *wu zhu* coins, and Western Han mirrors and their fragments. The openwork bronze belt plaques represent true masterpieces of ancient nomadic art. Artifact types and AMS dates suggest these sites may date to the second-first centuries BC.

**Keywords** Xiongnu · Tuva · Late Scythian archaeology · The Ulug-Khem culture · Stone cist burials · Ordos bronzes · Openwork belt plaques

Archaeological sites related to the Xiongnu 匈奴 Culture first appear in Tuva in the beginning of the second century BC after the northern campaign in 201 BC of the Xiongnu leader Maodun (=Modu) Chanyu 冒顿单于. Previously in this region, from the seventh to second centuries BC, the “Scythian” Uyük-Saglyñ Culture prevailed. Historical events of the second century BC to AD first century led to Xiongnu influence in the Tuva territory, but not only the Xiongnu occupied this region, and foreign cultural groups and other tribes of the Xiongnu state are represented here during this period, as well.

Monuments of the Xiongnu were already known in Tuva, but most of these remain unpublished. At the Bay-Dag II cemetery in Central Tuva, several large stone kurgans with “dromoi” and deep grave pits have been excavated. These

are analogous to tumuli of the Xiongnu nobility in Northern Mongolia and the Trans-Baikal. The burials include richly decorated coffins placed in timber constructions. Even though they were plundered, the remaining grave goods and the burial ritual itself indicate that this site can be considered as evidence of the Xiongnu presence in Tuva (Mandel’shtam and Stambul’nik 1992: 196–198; Nikolaev 2003: 260–262; Savinov 2010: 19–22).

Some interesting results were obtained in the course of the excavation of the cemetery of Aymyrlyg-XXXI in Central Tuva. About 200 graves, mostly untouched, were excavated here. Some finds suggest the connection of some graves, if not with the Xianbei 鲜卑 themselves then, at least, with tribes culturally influenced by the Xianbei (Khudyakov et al. 1999). The cemetery apparently dates to the AD first-second centuries (Savinov 2010: 23), although some of the burials could still be older. Sadly, the Aymyrlyg-XXXI cemetery excavation results still have not been published in full and the dates remain unknown. The available publications comprise only general information and single finds (Stambul’nik 1983; Mandel’shtam and Stambul’nik 1992: 196–198).

An interesting intrusive burial was excavated at the cemetery of Urbiun-III in Central Tuva. The occupant was put in a

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stone cist dug into an earlier grave of the Scythian period. The interred lay with his head to the north, on the right side with flexed legs. An openwork plaque depicting a scene of a struggle between a tiger and a griffin was found on the belt of the dead. This scene is analogous to some on Xiongnu bronzes in Northern China. Two ceramic vessels, bone arrowheads, and bone bow plates of the Xiongnu type were also found here (Savinov 1969: 104–108).

The archaeological sites listed above are situated in Central Tuva, in the west of the Ulug-Khem Basin, on the left bank of the Ulug-Khem River (Upper Yenisei). A considerable part of the Ulug-Khem's left bank is now flooded by the Sayano-Shushenskoe reservoir, so numerous archaeological sites have been submerged and are inaccessible to researchers, and many archaeological monuments are destroyed each year.

Since 2007 the Tuvan Archaeological Expedition of the Institute for the History of Material Culture RAS under support of the “Society for the Exploration of EurAsia” (Switzerland) has been conducting survey and excavations of damaged archaeological sites of the Xiongnu Age. In 2007, the burial ground of Terezin was revealed on the eroding bank of the reservoir. Fifteen burials (3 relatively undisturbed and 12 destroyed) were found and a number of surface finds were collected (Leus 2008: 42–44; Leus 2011: 515–536; Leus and Bel'skiy 2016: 93–104). In 2015, the cemetery of Ala-Tey 1 was discovered 4.5 km from the Terezin cemetery, and 33 undisturbed flat-grave burials have been excavated there.

Archaeological research in this area is hindered by extreme natural factors. In the mid-1980s, the cemetery of Ala-Tey was found to be located at the bottom of the Sayano-Shushenskoe reservoir. Excavations are possible only within a brief time span each year. Waters from snow and ice thaw only go away by mid-to-late May, while at the same time, water feeding into the reservoir begins, so by as early as mid-June, the cemetery is submerged again. Water release starts in the end of November when it is winter already in this area. Thus the cemetery of Ala-Tey remains deep underwater during the most of the year. The usual water level in the reservoir is 540 m above sea level while the cemetery of Ala-Tey is located at 523 m above sea level (Fig. 1). Archaeological excavations are possible here for 3–4 weeks annually, but even then the work is hindered by almost daily storm winds blowing from the Sayan Canyon of the Yenisei that last for hours; sand storms produced by the winds often make it impossible to work. The surface of the bottom of the reservoir in this locality consists of fine sand washed by water.

## 1 Burial rites

A number of different types of burial rites are demonstrated by the cemeteries. In general, though, surface structures are



Fig. 1 View of the Ala-Tey cemetery. June 2016

absent and burials occur in rather shallow pits. The interred are oriented differently (Fig. 2), but southwest and northwest orientations are predominant.

The majority of burials occur in cists made from stone plates, often with a double cover (Ala-Tey and Terezin) (Fig. 3). Most of the dead are supine with extended legs (Ala-Tey) but some are interred supine or on the side with bent legs (Ala-Tey, Terezin).

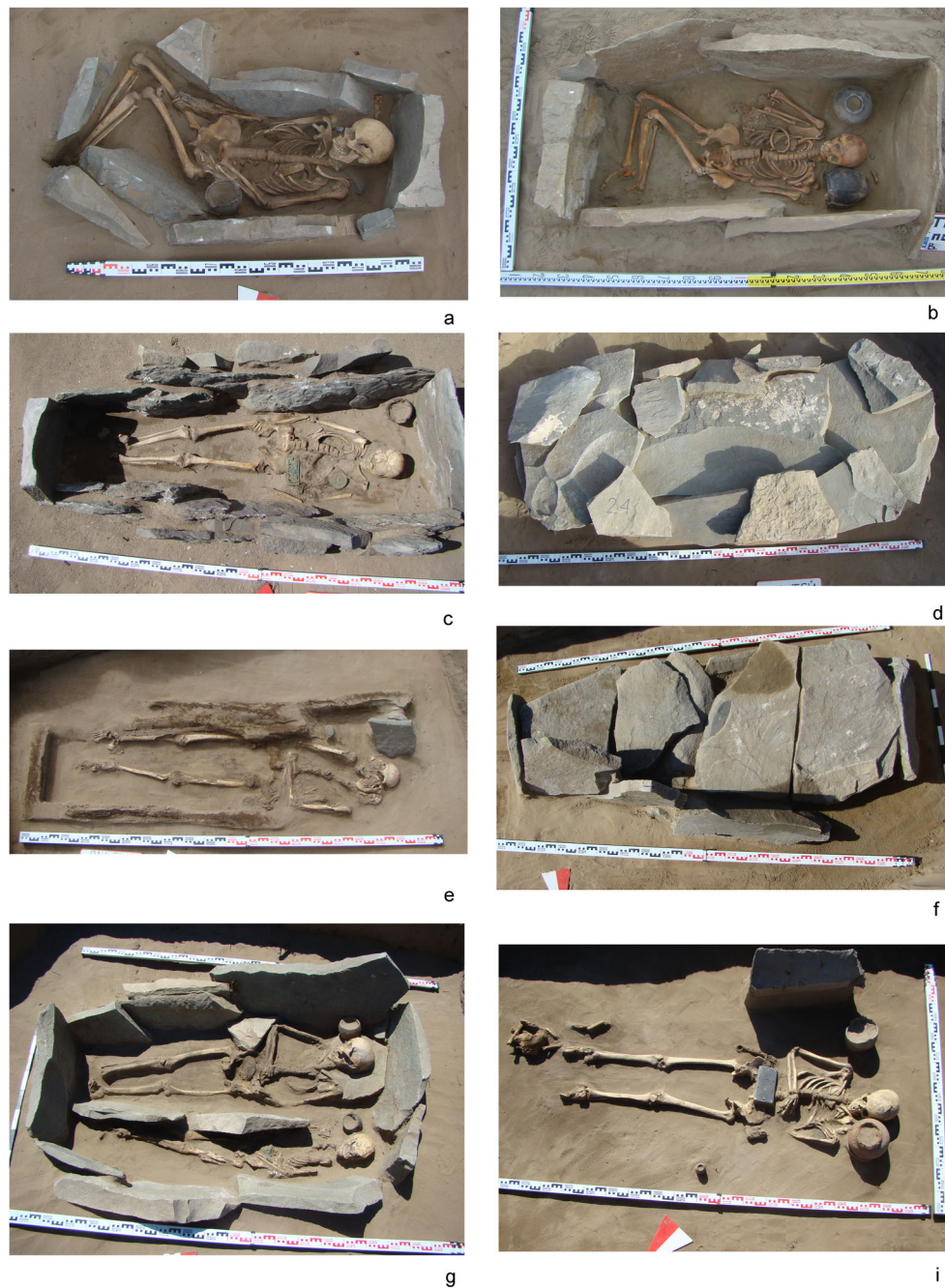
Some burials are made in narrow trenches lined with stone or stone plates (Ala-Tey). These structures are usually rectangular in plan (or boat-shaped in one case). The remains of rectangular wooden frames are occasionally traceable inside the burials (they could be coffins, but due to the regular exposure to water, the wood is either poorly preserved or is not preserved at all).

A few burials have no traceable structure inside the grave (Ala-Tey, object 29; Terezin, object 1).

For burial rites at the Terezin cemetery, it is essential to consider that both of the undisturbed burials (nos. 2 and 9), where the interred were lying in supine position with bent legs, are relatively “poor” ones, whereas practically all of the “rich” burials were completely destroyed by the collapse of the shore. The burial rites in these burials could be different, with the interred probably lying in supine position as in most graves at Ala-Tey and with similar grave goods. Also, the majority of the disturbed “rich” graves are situated slightly aside from graves nos. 2 and 9.

## 2 Grave goods

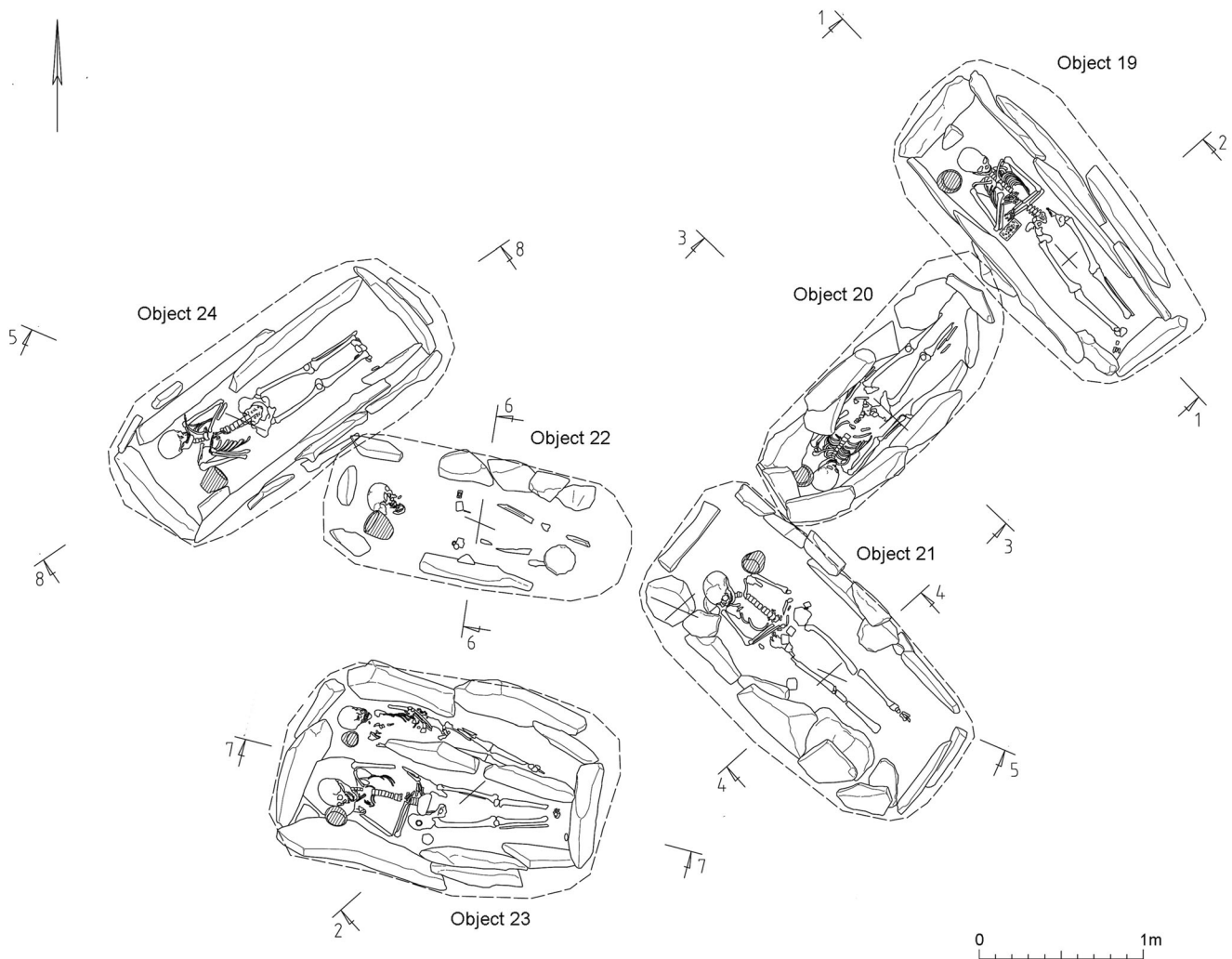
**Pottery** Two ceramic vessels (Fig. 4) were found in two completely preserved burials at the cemetery of Terezin: a hand-built pot and a wheel-thrown, narrow-necked pot with a square stamp on the bottom. At the cemetery of Ala-Tey, each burial contained one hand-built vessel, usually of a simple “jar”



**Fig. 2** Burial types. b. Terezin (object 9). Ala-Tey: a. object 8; c. object 11; d. object 24; e. object 12; f. object 32; g. object 23; i. object 29

shape, occasionally with a stand and applied ear-handles (Fig. 5). Grave 29 is an exception: here, along with a common jar, there was a red ware vase-shaped pot with an “H” sign (Fig. 5: 1). Such vessels are not typical here. In addition, in grave no. 25, along with the usual pot, there was a small ceramic vessel of quadrangular shape (Fig. 6: 2) uncommon for Tuva but typical of the Tesin Culture of the Minusinsk Hollow (Kuzmin 2011: 198). Some of the pots show traces of repairs, i.e., paired holes at the edges of fissures in the upper body (Fig. 5: 2).

**Weaponry** At the cemetery of Terezin, bone strengtheners for a bow of the Xiongnu type and bone arrowheads typical of the Xiongnu period (Fig. 7) were found in one of the undisturbed burials (no. 2). In the disturbed burial no. 8, among the artifacts from its stone cist were found a large bronze openwork buckle and a bronze socketed three-bladed arrowhead. Fifty meters from this findspot, an iron three-bladed arrowhead was found. No item of weaponry has been found at the cemetery of Ala-Tey so far.



**Fig. 3** Ala-Tey. Objects 19–24

**Coins** In burial no. 29 at Ala-Tey were found two bronze Chinese *wu zhu* 五铢 coins that served as ornaments for the belt of the female occupant. Coins of this type serve provide a *terminus post quem* of 118 BC for this burial (Fig. 8).

**Mirrors** Complete mirrors and some mirror fragments were found at both cemeteries. These were mostly original Chinese mirrors of the Western Han dynasty period or their local imitations. The only exception so far is an example from burial no. 29 at Ala-Tey, where a simple round bronze mirror with a loop-shaped handle (Fig. 9: 7) was found. Fragments of three mirrors were found at the Terezin cemetery: one piece is Chinese “white bronze” (a chance find from the vicinity of several disturbed burials) (Fig. 9: 2) and the two others are fragments of local imitations of Chinese mirrors (Fig. 9: 1, 3). One of these latter fragments was retrieved from the disturbed rich burial no. 12 (Fig. 9: 2) and represents an imitation of a Chinese mirror like that of the Chinese “white bronze” fragment. An identical but unbroken mirror is known from the

excavations at the burial ground of Yaloman-II in Altay, which is also a local copy (Tishkin 2006: 113–114, Fig. 1: 3). Another fragment, also a stray find, is very interesting as it was cast after a Han model but has a lateral loop-shaped handle (Fig. 9: 3) which is a feature more typical for mirrors of the late Scythian period in Tuva.

To date, two complete Chinese mirrors (local imitations) and two fragments of mirrors of this type have been found at the cemetery of Ala-Tey. One of them, of “white bronze,” was probably imported from China (Fig. 9: 5). All the mirrors from the burials of the cemetery of Ala-Tey, except for one, were discovered to the left of the chest of the interred (objects 2, 11, 29, 31). One mirror was found near the right shoulder of the buried (object 25). This complete mirror bears a hieroglyphic inscription (Fig. 9: 6). An identical, undamaged mirror (also a local imitation) was found in the Minusinsk Hollow in the course of the excavation of the burial ground near the Yesinskaya MTS (Vadetskaya 1999: 245, Fig. 95). A fragment of a similar mirror was found in Altay (Tishkin 2006: 114,



Fig. 4 Pottery from Terezin

Fig. 1: 4). The inscription reads, “When I look to the sky I always think about the Ruler (天上见长,心思君王)” (Lubolesnichenko 1975: 118–119). The second complete mirror from Ala-Tey (Fig. 9: 8) is typologically identical to the two fragments from the cemetery of Terezin.

**Knives and awls** Iron knives were found in some of the graves. Regrettably, by effects of the constant influence of water, the preservation of iron is usually very poor and the shape of the knives is often difficult to determine. There are knives with a ring-shaped pommel and stemmed knives, one of them with a handle made of a ram’s phalanx. Sometimes iron awls are encountered together with the knives (Fig. 10: 1–3).

**Iron buckles** Small round iron clasps or their remnants are occasionally found near the belt of the interred (Fig. 10: 4).

**Iron buckles on footwear** Small iron buckles, probably for footwear, are sometimes found near the bones of the feet of the interred (Fig. 10: 5–7).

**Bronze openwork belt plaques** Among all of the grave goods, nine bronze openwork belt buckles with animal representations are especially noteworthy.

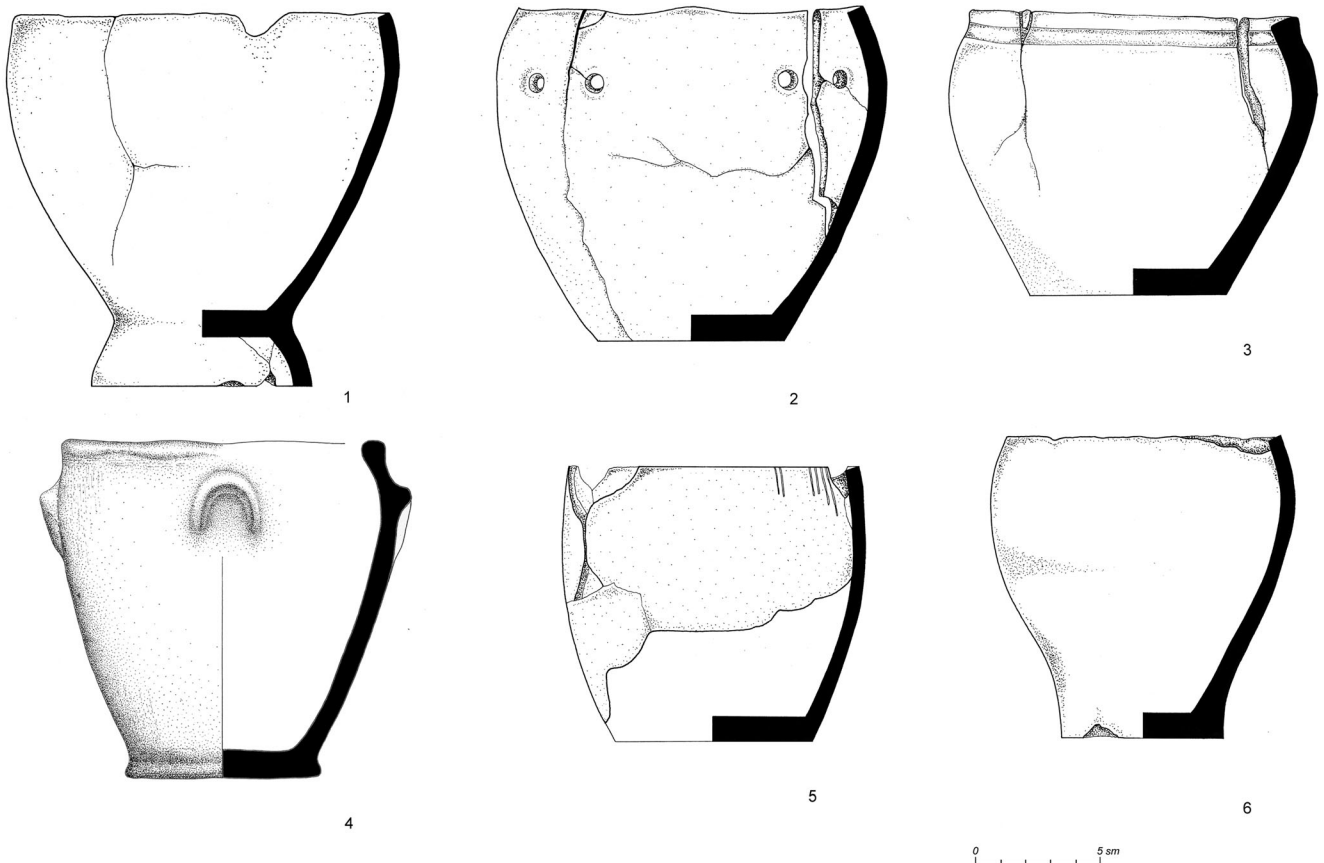


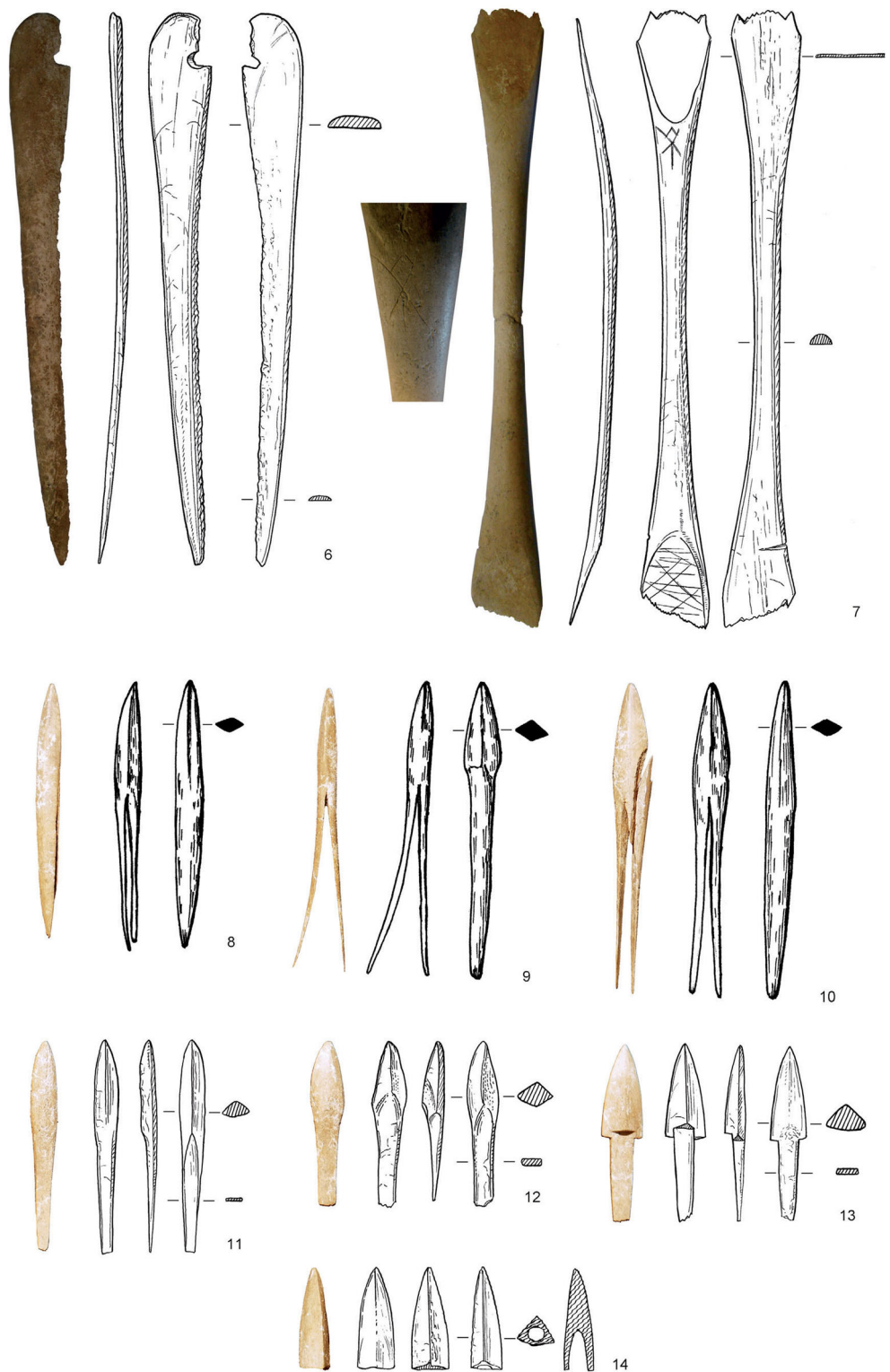
Fig. 5 Pottery from Ala-Tey



**Fig. 6** Ceramic pot with “H” symbol (object 29) and quadrangular vessel (object 25) from Ala-Tey

1. A round belt buckle, diameter of 8.5 cm, decorated with a representation of 6 heads of griffins (Fig. 11: 1). This buckle was found in the disturbed burial no. 8 at Terezin. No direct parallels to it have yet been found, but in terms of style it is similar to two buckles from grave no. 120 of the Ivolga burial ground in the Trans-Baykal region (Davydova 1996: Table 36: 3–4; Table 72: 36; Davydova and Minyaev 2008: 104).
2. A large belt buckle with a full-face representation of a yak bull (Fig. 11: 1), measuring  $10.8 \times 7.2$  cm (Ala-Tey, grave 23, skeleton 1, found on the belt). Stylistically it resembles buckles with bulls from the Ordos (Kost 2014: pl. 6) and a buckle from the Dyrestuy burial ground with the representation of a lynx attacking an Altai argali mountain sheep (Davydova and Minyaev 2008: 97).
3. A rectangular buckle with a scene of struggle between two tigers and a dragon (Fig. 11: 5), measuring  $13.5 \times 6.5$  cm. It was retrieved from the disturbed burial no. 12 at the cemetery of Terezin along with some other bronze objects, including belt plaques, an imitation of a cowry shell, a fragment of an imitation of a Han mirror, etc. Parallels to this buckle are known primarily in the Trans-Baykal region where, in the course of excavations of Xiongnu sites, several examples were found including some paired ones. A few related buckles are stored in museums and private collections, but their exact proveniences are unknown, but they were perhaps Mongolia or Northern China (for details see Bogdanov 2006: 69; Leus and Bel’skiy 2016: 102; Brosseder 2011: 372–377; Erdy 2004: 50–52; Leus 2011: 520–521). A unique pair of buckles of gold with inlaid turquoise, coral, and amber was discovered during excavations of the cemetery of Sidorovka on the Irtysh River (Matiushchenko and Tataurova 1997: 48, 72–73, Fig. 27; Bunker 2002: Fig. 45). A rather interesting variant of a similar buckle, probably of Mongolian origin, is manufactured from dark-green jade and is kept in a private collection (Rawson 1995: 311–312, no. 23:1; Bunker 2002: 134, no. 106; Linduff 1997: 88).
4. A rectangular buckle with a representation of four wriggling snakes was found in the partly disturbed burial no. 1 at the cemetery of Terezin (Fig. 12: 1). The buckle was found at the belt of the interred. Its dimensions are  $12.5 \times 7$  cm. Similar buckles and their fragments are well known at sites of the Tesin Culture in the Minusinsk Hollow (Devlet 1980: 24, Tables 13–14) and in burials of the Xiongnu in the Trans-Baykal area (Davydova and Minyaev 2008: 98; Kharinsky, Korostylev 2011: 200).
5. A buckle with a geometric design representing a stepped lattice and ornamented on the edges with representations of six animal heads. At the cemetery of Terezin, two similar examples have been found: one in the disturbed burial no. 5 (Fig. 12: 3), and the second is a poorly corroded chance find (Fig. 12: 2). The dimensions of the first buckle are  $12 \times 6$  cm. Analogues are known in the Minusinsk Hollow and are represented by stray finds (Devlet 1980: Table 16–17).
6. A buckle with geometric design representing a stepped lattice (Fig. 12: 4). One example was found at the belt of the interred (object no. 2 of the cemetery of Ala-Tey). Dimensions of the buckle are  $11 \times 5.6$  cm. Parallels are known in the Minusinsk Hollow as stray finds and among the finds of the Tesin burials (Devlet 1980: 16–17; Kuzmin 2011: 196).
7. A rectangular buckle with a representation of two standing yak bulls (Fig. 13). Four examples have been found so far (2 buckles amid the stone slabs of the disturbed graves no. 13 and no. 14 at Terezin; 2 buckles at the belts of the interred in graves nos. 11 and 19 at Ala-Tey). The buckles differ in dimensions: the Terezin buckles are  $14.8 \times 7.2$  and  $13 \times 6.5$  cm (broken in two), and Ala-Tey’s are  $14 \times 6.8$  and  $14.3 \times 7$  cm. Analogues are known mostly within the Minusinsk Hollow. 19 examples of complete buckles or their fragments come from this area. These are mostly stray finds, but a few examples come from burials (Devlet 1980: 20–21, Tables 1–6). One comes from a cemetery in Liaoning 辽宁省 Province in Northeast China

**Fig. 7** Bow strengthener and arrowheads. Bone. Terezin, object 2



dating to the early Han period (second-first centuries BC) (Kost 2014: 221, pl. 17). Some chance finds probably come from Inner Mongolia (Brosseder 2011: 419; Rawson and Bunker 1990: cat. no. 222).

8. A buckle with a representation of two camels (Fig. 11: 3) cropping leaves from a small tree or bush growing between them. It was found in grave no. 21 at the cemetery of Ala-Tey on the girdle of the interred woman. The

**Fig. 8** *Wu zhu* coins. Ala-Tey, object 29



buckle measures  $9.5 \times 4.5$  cm. The object was broken in half in antiquity and re-fastened together with small leather straps with their traces preserved. The same straps served to fix the buckle to the base of the belt. A number of chance finds of similar buckles come from northern China, and half of an analogous buckle was found during the excavation of the cemetery of Daodunzi 倒墩子 in Ningxia 宁夏 (Devlet 1980: Fig. 2–2; Kost 2014: pl.23).

9. A fragment of a buckle with a representation of a horse with bent legs (Fig. 11: 4) (Ala-Tey, burial 23, skeleton 2). It was found on the belt near another fragment of a buckle (the latter is difficult to identify but most probably was part of another buckle). The two fragments both were possibly tied together. On the right side of the first buckle there are two holes for fixing it to the belt or to the second fragment. A number of similar buckles with a single



**Fig. 9** Bronze mirrors and their fragments. 1–3. Terezin; 4–8. Ala-Tey





Fig. 10 Iron artefacts from Ala-Tey: awl, knives, buckles, rings

representation of a horse with bent legs are known as stray finds from northern China. One example was found during excavation of the cemetery of Daodunzi (Kost 2014: pl. 7–8; Wagner and Butz 2007: S.2–3).

**Bronze belt plaques** Decorations on belts include some small rectangular openwork bronze plaques. The majority of these are rectangular plates with hexactinal designs (Fig. 14: 1, 2); the plates measure ca.  $4 \times 2.5$  cm. They may be considered as “standard” belt ornaments for both cemeteries. Similar plaques are known from the Kosogol hoard from the southwest of Krasnoyarsk Krai (Devlet 1980: 16, Fig. 6: 30). A similar, although not identical, buckle was found at the cemetery of Daodunzi in Ningxia (Pan 2011: 465, Fig. 3). These hexactinal design plaques probably represent a simplified version of some of the Ordos bronzes (Devlet 1980: Figs. 3–5).

The cemetery of Terezin yielded two very interesting small plaques representing two figures of yak bulls, measuring

$4.5 \times 2.8$  cm (Fig. 14: 3, 4). The distinctive feature of these objects is that the horn of the bull standing left is bent and closed with the frame, forming a loop for clasping the belt. No direct parallels of these clasps have been found so far, but some stylistically resembling the representations of the single bulls are known.

In several burials at Ala-Tey there were found bronze belt plaques decorated with volutes (dimensions  $3.3 \times 2.7$  cm) (Fig. 14: 5, 6).

**Jet belt plaques** Objects of this type were previously unknown in the territory of Tuva. At the cemetery of Ala-Tey, large and small jet belt plaques were discovered in three burials. These small plates measure 4–5 cm in length and 2.5–3 cm in width. There are holes on the short sides of the plates for fixing to the belt. Three pieces have two holes at each short side (Fig. 15: 2–4), and one example has a single hole at each of the sides (Fig. 15: 5). Between the holes, there are clearly discernible grooves possibly worn in by leather straps. One of the examples is ornamented with an X-shaped dotted design (Fig. 15:



Fig. 11 Bronze openwork belt buckles: 1, 5. Terezin; 2–4. Ala-Tey

3) comprised of round hollows filled with colored inlays: the hollows at the center and ends of the X-design are larger and include inlays of carnelian, while the smaller hollows between them are filled with turquoise.

In burial no. 29 there was found a massive belt plaque measuring  $18 \times 9$  cm lying over the pelvis bones of a young woman (Fig. 15: 1). This buckle is ornamented by a dotted design and inlaid with turquoise, coral and mother-of-pearl. On the short sides of the buckle there are holes, with the two round holes on one side for fixing the buckle to the belt and one oval hole on the other side, probably for clasping.

Similar objects from jet, including those with identical ornamentation to those above, are known at archaeological sites of the Xiongnu period across many contiguous regions: numerous examples of small and large stone plates have been encountered in the Trans-Baykal area—at the Ivolga cemetery (Davydova 1996: 20–21) and Ivolga fortified settlement (Davydova 1995: 39), at the Dyrestuy cemetery and settlement-site of Dureny (Davydova and Minyaev 2008: Figs. 34, 87–89), and in barrow no. 54 in the Ilm Pad (Konovalov 2008: Figs. 48–49). Two stone plates were found at the cemetery of Daodunzi in Ningxia, northern China (Kost 2014: pl. 89). A large jet plate with a decoration was found in Mongolia (Eregzen 2011: 134–135, Figs. 169–172) and in

Uzbekistan (Brosseder 2011: 361). Rare examples also were discovered in burials of the Tesin Culture in the Minusinsk Hollow (Kuzmin 2011: 352, Tables 41, 197, Fig. 41).

**Cowry shells and their bronze imitations** While only one natural cowry shell has been found so far, from the Ala-Tey cemetery, bronze imitations of cowries (totaling about 60 pieces) (Fig. 16) were discovered in a number of graves there, as well, and in the disturbed burial no. 12 at Terezin (1 piece). All of them served as belt ornaments. In burial no. 29, thirteen bronze cowries lying near a large stone plaque clasp with inlay and Chinese *wu zhu* coins were found. In burial no. 25, 36 bronze cowries arranged in two lines were found near the waist of the dead.

Belts ornamented with cowry shells are well known in burials of the Scythian period, including those in Tuva (Semenov 2003: 21), as well as during the subsequent periods. Belts ornamented with cowry shells or their imitations are typical for the Xiongnu sites in the Trans-Baykal region, e.g., at the Ivolga cemetery, where the majority of cowries were imitations made from clayey limestone (Davydova 1996: 21, Table 73), and at the Dyrestuy cemetery (Davydova and Minyaev 2008: Fig. 93). Cowry shells were encountered near the belt buckles in some graves at Daodunzi,

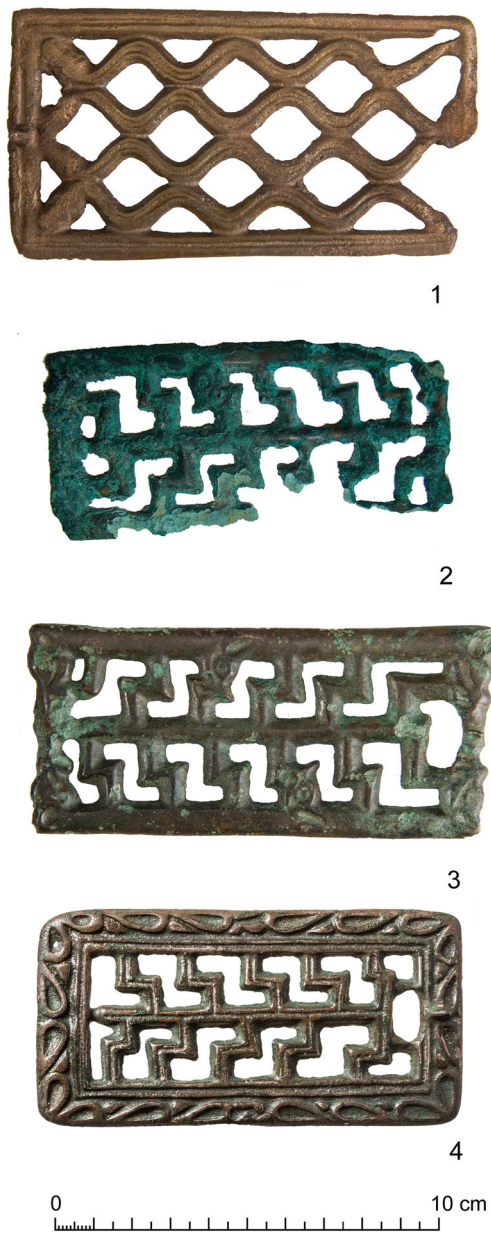


Fig. 12 Bronze openwork belt buckles. 1–3. Terezin; 4. Ala-Tey

as well (Kost 2014: 206, 208). In burials of the Western Han period in China, belts with cowry shells are also fairly numerous (Brosseder 2011: 384).

**Bronze openwork belt rings** Openwork rings, 5–6 cm in diameter, were found in many burials at Ala-Tey and Terezin (Fig. 17: 9, 11, 12, 14). These rings make up part of a belt set and have a widespread distribution within the majority of the areas controlled by the Xiongnu. Numerous examples have been found in Trans-Baikal, at the cemeteries of Ivolga and Dyrestuy, at the Ivolga settlement site, and other sites. In the Minusinsk Hollow they are known from burials of the



Fig. 13 Bronze openwork belt buckles with representations of yaks. 1–2. Terezin; 3–4. Ala-Tey

Tesin Culture. Finds from northern China also are reported (Pan 2011: Figs. 2, 6).

**Iron and bronze belt rings** A standard part of belt sets is represented by plain metal rings of about 3 cm in diameter. Such rings have been found in many burials of the Ala-Tey cemetery and in some disturbed graves of the Terezin cemetery. Most of them are bronze, but iron rings also are present (Fig. 17: 1–6).

**Stone belt rings** In burial no. 21 of the Ala-Tey cemetery, there was found a ring made from white stone (probably clayey limestone), 4.5 cm in diameter, which was a part of the belt set of the interred woman (Fig. 17: 7). Similar rings are known



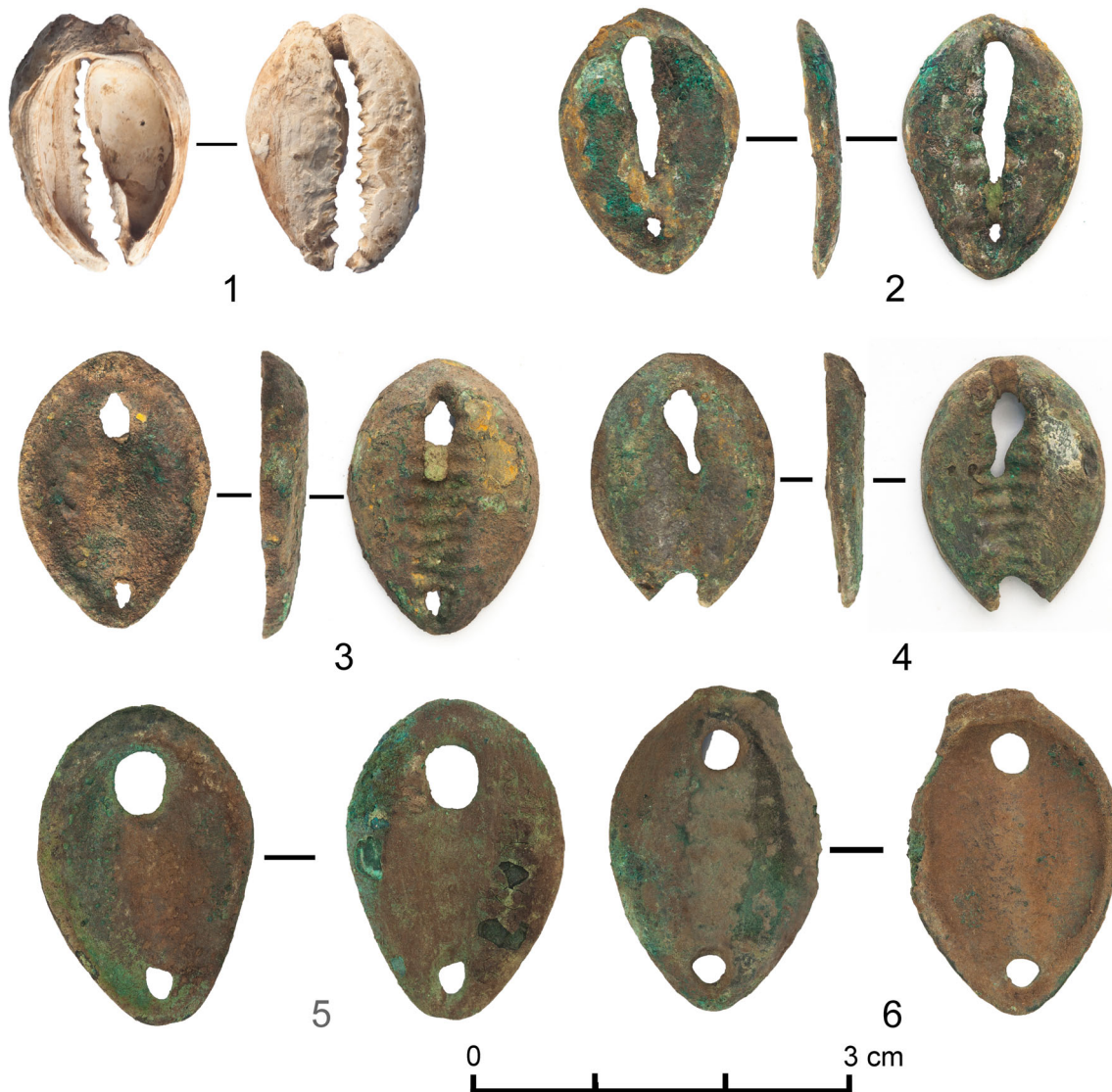
Fig. 14 Bronze belt appliques with six-rayed ornament, representation of two yaks, volute ornament. 3, 4: Terezin; 1, 2, 5, 6: Ala-Tey

from many archaeological sites of the Xiongnu, such as in the Trans-Baikal and the Ivolga cemetery (Davydova 1996: 21).

**Bone and horn belt buckles** A belt buckle made of horn was found in burial no. 2 at Terezin (Fig. 17: 15), and an

Fig. 15 Jet belt plaques. Ala-Tey





**Fig. 16** Cowry shell and their bronze imitations from Ala-Tey

ornamented belt buckle of bone was found in burial no. 6 at Ala-Tey (Fig. 17: 16).

**Spoon-shaped belt tips** A chance find from the cemetery of Terezin, 1 piece (Fig. 17: 13). These objects are spread across Xiongnu sites throughout all the contiguous territories.

**Bell-pendants** A chance find from the cemetery of Terezin, 1 piece (Fig. 17: 10). Similar finds are reported from many Xiongnu sites in Trans-Baikal, Mongolia, and China. In Tuva they are present in the latest burials of the Scythian period, such as in the burial ground of Khayyrakan (Semenov 2003: 50).

**Earrings** Earrings were found in two women's burials at Ala-Tey; two are of bronze (grave 29) and one is gold (grave 21) (Fig. 18: 1, 2). The earrings are of a similar type, consisting of

a ring twisted from wire with a small loop where possibly pendants from organic materials were inserted. The tip of the wire forming the loop is flattened out. Identical gold earrings were found, for example, in grave no. 13 at the cemetery of Daodunzi in Ningxia (Kost 2014: 207, pl. 99), in grave no. 140 at the Keshengzhuang 客省庄 cemetery in Shaanxi 陕西 (Pan 2011: 466, Fig. 4). Similar earrings, although with pendants, dating to the same period were found in the Minusinsk Hollow (Vadetskaya 1999: Fig. 65).

**Beads and pendants** In a number of burials in the cemeteries of Ala-Tey and Terezin, beads and pendants of different types and materials were found (Fig. 18). In grave no. 9 at Terezin and some burials from Ala-Tey, polychromatic beads and triangular pendants were found (Fig. 18: 7, 13, 20). Pendants of a similar type are known in the northern Black Sea area where they are widespread from the first century BC to the second



**Fig. 17** Belt ornaments: 1–6. bronze rings; 7. stone ring; 9, 11, 12, 14. bronze openwork rings; 8. bone strap end; 10. bronze bell pendant; 13. bronze spoon-like strap pendant; 15, 16. horn and bone belt buckles. 8–10, 13, 15: Terezin, others from Ala-Tey

century AD. They are most typical however at the turn of the BC-AD eras (Alekseeva 1978: 43, Table 27; Lankton 2003: Fig. 6.0, no. 568). Similar objects are found in the Xiongnu period in the contiguous territories, such as in Minusinsk Hollow (Vadetskaya 1999: 68) and Trans-Baikal (Davydova 1996: 22). Beads of carnelian, antler, gold, and bronze were found at both cemeteries. The girdle of a young girl from grave no. 23 at Ala-Tey was decorated with numerous large

beads made of argillite, fish vertebra, and carnelian beads and a pendant from a maral (red deer) fang. Iron rings were attached to the belt, and in the center there were fragments of a clasp with a representation of a horse. A similar belt is known from burial no. 23 in a stone cist at the cemetery of Suglug-Khem, where a young woman was interred (Semenov 2003: Tables 38, 41). These belts are a typical part of a costume in the late Scythian period in Tuva.



**Fig. 18** Earrings, beads, pendants. 1. gold earring; 2. bronze earring; 3, 21. stone pendants; 4–6, 11, 12, 14, 17, 18. stone beads; 7, 10, 13, 20. glass beads and a pendant; 8, 9, 16. bone beads; 14. fish vertebrae beads; 22. maral fang pendant; 19. argillite beads. 20–22 from Terezin, others from Ala-Tey

### 3 Dating

The assemblage of grave goods from the burials at Ala-Tey and Terezin suggests that they date to the second to first centuries BC. These dates are supported also by numerous parallels from the cemetery of Daodunzi, which has been dated to the middle and late Western Han period (Kost 2014: 205), i.e., the second half of the second to first centuries BC, the Ivolga cemetery (Davydova 1996: 24–25), and others. AMS radiocarbon determinations on samples extracted from the teeth of the interred also support these dates, although they still have to be verified by dating other carbonaceous samples.

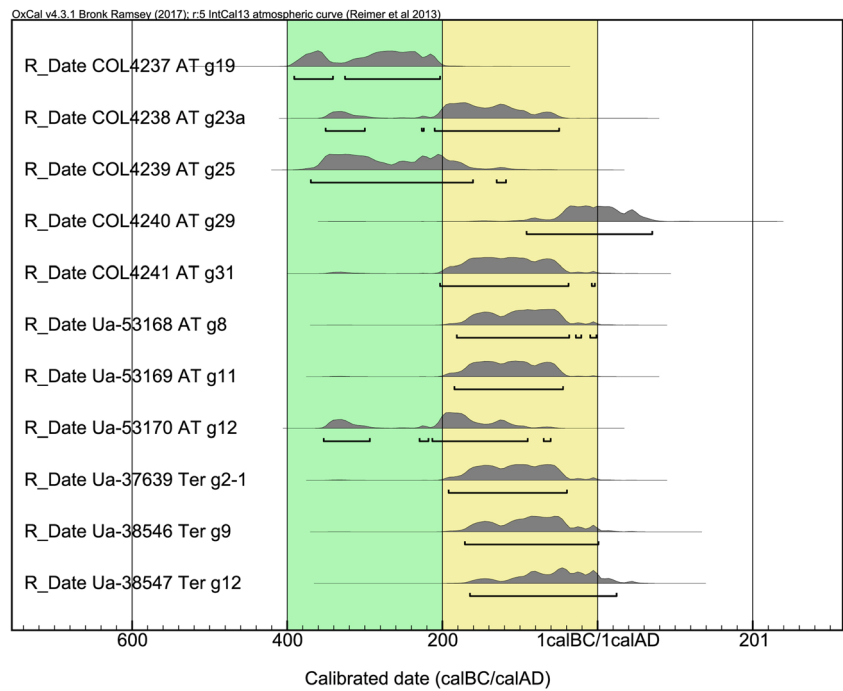
Three AMS dates for the cemetery of Terezin and eight AMS dates for the cemetery of Ala-Tey have been determined by the radiocarbon laboratories at Uppsala (Sweden) and Cologne (Germany) (Fig. 19; Table 1). The determinations indicate the two cemeteries date to the second to first centuries BC.

The finds of polychromatic beads and the two Chinese *wu zhu* coins indicating 118 BC as *terminus post quem* suggest that some of these burials were made not earlier than the first century BC.

### 4 Cultural identification

The artifacts from the cemeteries of Ala-Tey and Terezin allow a firm association of them with the Xiongnu Culture. At the same time, funeral rites retained certain traits of the preceding Scythian Culture, such as burials in stone cists and the burial position of the dead lying on a side with bent legs. A similar burial was excavated in the region in the 1960s at the cemetery of Urbiun-III, 6 km to the north of Terezin. The burial was in a stone cist dug into the pit of a wooden chamber grave of the Scythian period. The interred lay on the right side with bent legs. Near the head there were two ceramic vessels, to the left were remains of a bow of the Xiongnu type and bone arrowheads, and on the belt there was a bronze clasp with a scene of struggle between a tiger and a griffin (Savinov 1969: 104–108). In fact we are dealing here with an exact parallel to grave no. 2 at Terezin, which lacks only the bronze clasp. Meanwhile, the majority of the burials at the cemetery of Ala-Tey are different. They are close to the Xiongnu type, such as burial featuring a supine position, occasionally inside a wooden frame, possibly a coffin. Most of the dead are found in stone cists. At the same time these different types of burial

**Fig. 19** Radiocarbon AMS dates for the Ala-Tey (AT) and Terezin (Ter) cemeteries. Lab codes: Ua = Uppsala, COL = Cologne



rites are undoubtedly contemporaneous and are found at a single, compact burial ground with similar grave goods and AMS dates.

Probably in this period (second to first centuries BC) in this key locality of the entrance of Yenisei into the Sayan canyon in Central Tuva (historically a traditional route from Tuva to the Minusinsk Hollow), new population groups appeared due to the northern expansion of the Xiongnu at the peak of their power. These people could have been either the Xiongnu (since burials of Xiongnu elite are known in Tuva, such as at the burial ground of Bay-Dag-II about 40 km to the east of

Ala-Tey) or some other tribes related to them. A gradual but relatively quick cultural assimilation of the main part of the remaining Scythian population took place. It is during this period that the large bronze belt plaque buckles appeared in Tuva. These objects possibly arrived with the new people, who brought the tradition of manufacturing such buckles with them.

At the same time, the majority of the bronze artifacts from the cemeteries of Terezin and Ala-Tey are manufactured locally, which is in general confirmed by the results of metallographic analysis (Khavrin 2016: 105–107). These impressive

**Table 1** Radiocarbon dates from Terezin and Ala-Tey burials. All samples on human bone/collagen

	Sample No.	Radiocarbon Years BP (Libby)	Calibrated BC (95.4%)*
<b>Ala-Tey I:</b>			
grave 8	Ua-53,168	2077 ± 28 BP	190–20 (94.1%)
grave 11	Ua-53,169	2092 ± 27 BP	190–40
grave 12	Ua-53,170	2144 ± 27 BP	360–290 (22.8%) 230–90 (72.6%)
grave 19	COL-4237)	2240 ± 34 BP	392–204
grave 23a	COL-4238)	2129 ± 34 BP	351–50
grave 25	COL-4239	2183 ± 36 BP	370–119
grave 29	COL-4240	2005 ± 34 BP	92 BC - AD 71
grave 31	COL-4241	2096 ± 34 BP	204–4
<b>Terezin:</b>			
grave 2	Ua-37,039	2085 ± 30 BP	200–30
grave 9	Ua-38,546	2066 ± 30 BP	180 BC - AD 10
grave 12	Ua-38,547	2044 ± 31 BP	170 BC - AD 30

\*Calibration with IntCal13 using OxCal v. 4.3.1 (Bronk Ramsey 2013), OxCal v. 4.2.4, and OxCal 3.10



highly artistic objects came to exist in Tuva within a brief time, and they mark a period of change in cultural traditions that distinguish the active participants, i.e., the bearers of the material culture of the Xiongnu. Additional information on this process possibly will be yielded by the expected results of a careful anthropological and genetic investigation of skeletons from the cemetery of Ala-Tey.

## 5 Conclusion: The Ulug-Khem archaeological culture

In 1971, Alexander D. Grach defined the Ulug-Khem (Yenisei) Culture using materials discovered in sites situated in the Ulug-Khem Hollow in Central Tuva (Grach 1971: 99–100). This archaeological culture features burials in flat graves, stone cists and vaults with fairly scanty grave goods. The burials are single, occasionally paired, and the interred lie on the left or right side with bent legs. Sites of this culture fill a chronological gap between the Uyük-Saglyñ and Kokel Cultures. Possibly, the bronze clasp from the burial at Urbiun-III, all of the preserved graves, some interments from the cemetery of Terezin, and a number of burials at Ala-Tey may be attributed to the same culture. All of them share both similar burial rites and similar grave goods. At the same time, as mentioned before, there are no doubts that they are contemporaneous with burials of other types: the interred are lying in supine positions in stone cists, in pits lined with stone slabs, and in wooden frames (possibly coffins), and with richer Xiongnu grave offerings. A number of accompanying burials of similar type were excavated around kurgans of the Xiongnu elite at the Takhiltyn-Khongoor cemetery in western Mongolia. These were interments in stone cists with the dead in supine positions with their legs bent to the right (Miller et al. 2009a: 308–311, Fig. 6). At the Xiongnu cemetery of Shombuuziin-Belchir in the Mongolian Altai, besides the common Xiongnu burials in wooden coffins, there were found interments in stone cists with a wooden top. In these burials, the dead are supine, some with their head oriented to the northwest (Miller et al. 2009b: 10–16). Many burials featuring wooden coffins inside stone cists are known at the Dyrestuj cemetery in Transbaikalia (Minyaev 2007: 22–24).

The appearance of the Ulug-Khem Culture sites in Tuva is related to the stormy events of the Xiongnu expansion period. The Xiongnu brought here foreign population groups who ousted or assimilated the local Scythians. Different burial rites co-existed here within this period, sharing common material culture.

It seems entirely reasonable to define a distinct Ulug-Khem archaeological culture since it clearly reflects the transition from the Scythian to Hunn-Sarmatian (or Xiongnu-Xianbei) period and is characterized by different burial rites and material culture types analogous to classic Xiongnu sites.

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