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Сборник материалов XI Международной научной конференции «Древние культуры Монголии, Южной Сибири и Северного Китая» содержит работы участников конференции, состоявшейся 8–11 сентября 2021 года в г. Абакан (Российская Федерация). Эта конференция, которая продолжает серию научных мероприятий, начатых в 2010 году в г. Улан-Удэ, была проведена на базе Южносибирского филиала Института истории материальной культуры РАН. Материалы сборника хронологически охватывают большой период времени от палеолита до современности и посвящены актуальным проблемам археологической науки, этнологии и сохранения историко-культурного наследия восточной части Северной Евразии.

The Proceedings of the 11th International Scientific Conference “Ancient Cultures of Mongolia, South Siberia and North China” contain works of participants of the conference held on September 8–11, 2021 in Abakan (Russian Federation). This conference, which continues a series of scientific events started in 2010 in Ulan-Ude, was held on the basis of the South Siberian Branch of the Institute for the History of Material Culture of the Russian Academy of Sciences. The Conference Proceedings chronologically cover a large period of time from the Paleolithic to the Modern Times and are devoted to current problems of archaeological science, ethnology and preservation of historical and cultural heritage of the eastern part of Northern Eurasia.

В оформлении обложки использована: пейзажная фотография — вид с востока—северо-востока на реку Абакан в районе впадения в нее реки Сос (фотография А.В. Поликова); художественное изделие из рога — Итколь II курган 14 могила 4 (раскопки А.В. Поликова).

In the design of the cover were used: landscape photography — view from the east-northeast of the Abakan River in the area of the confluence of the Sos River (photography by A.V. Polyakov); artistic product made of a horn — Itkol II barrow 14 grave 4 (excavations by A.V. Polyakov).
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A SURVEY OF BRONZE AND EARLY IRON AGE TOOLS AND WEAPONS FROM NORTHERN MONGOLIA

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Research has shown that the eastern part of the Eurasian steppe played an extremely important role in the formation of early nomadic cultures (Scytho-Siberian cultures). A number of excavations have been conducted in the Mongolian steppes in recent years, including joint international projects on Bronze Age and Early Iron Age sites dating from the 2nd to 1st millennia BC, which are therefore related to early nomadic cultures and their origins. This has resulted in a diversity of findings, especially in regard to Kereksury and slab-stone graves, while migration patterns have been investigated based on analyses of excavated human remains. It has also been possible to conduct carbon-14 dating on excavated organic materials, thereby helping to establish a chronology for grave sites of the period (Miyamoto, 2018). On the other hand, the wide distribution of bronze artifacts found in Mongolia is also evident in other regions of the eastern steppes, including the Great Wall and Minusinsk basins. While analyses of bronze artifacts have substantially added to discussions on the origins and backgrounds of early nomadic cultures, such artifacts are rarely found in graves and tombs of the same period, with most research involving materials collected from unknown sources. In this context, there is a growing need to link the broad cultural dynamics of the Eurasian steppes as a whole based on continued investigations into these bronze artifacts. Archaeological research must also target detailed cultural dynamics associated with various regions of Mongolia. To address these gaps in the literature, large quantities of bronze artifacts must therefore be recovered through scientific excavations at variety of sites. However, we believe the first step is to investigate known bronze artifacts from museums throughout Mongolia, thus clarifying the dynamics of bronze culture on a more detailed level.

In this study, we conducted surveys of two bronze artifact collections from November 13th–15th 2017, including those owned by the Burgan Provincial Museum and the Khovsgol (Murun) Provincial Museum, both of which are located in Mongolia (Fig. 1). While we were able to examine and document bronzes dated from the second half of the 2nd millennium BC to the modern period, this paper focuses on weapons and tools dating from the second half of the 2nd millennium BC to the mid-1st millennium BC (see Tab. 1). Before reporting on these bronzes, the next section briefly discusses the dynamics of bronzes from the eastern Eurasian Steppe during the period lasting from the 2nd millennium BC to early 1st millennium BC. For additional details on these issues, please refer to Matsumoto (2018, 2020).

Bronze cultures of the eastern steppe region during the 2nd and 1st millennia BC

The emergence of a distinctive bronze assemblage common to the whole of Mongolia (Mongolian Plateau)
occurred during the 2nd millennium BC. Its transformation and development from the end of the 2nd millennium BC onward was spurred by relationships with South Siberia (Fig. 1), which lies to the north of Mongolia across the Sayan mountains.

Bronzes were already present in Mongolia before the first half of the 2nd millennium BC, including those of the Chemurchek culture in the northwest and Great Wall region. Among them were a certain number of simple tools and ornaments with strong connections to both the Afanashevo and Andronovo cultures and Seima-Turbino type bronzes.

A large number of unique Mongolian bronzes appeared during the mid-2nd millennium BC (the Mongolian Bronze Complex). The most conspicuous items among these were simple knives (type A: Fig. 2-1), which were cast in one or two-piece stone molds without the use of models (directly carving stone). This complex also includes refined knives (type C: Fig. 2-9), daggers (type A), spearheads (type M), and battleaxes (types I, II, and IIIA). Refined knives and daggers, which often feature animal-shaped or rattling pommels, seem to have been cast in clay or metal molds using wax or fat-like models. On the other hand, a group of bronzes (the Early Karasuk Bronze Complex) with a different tradition from the Mongolian Bronze Complex were present in the Minusinsk Basin of South Siberia during the same period. Here, simple knives (type Ba) of a local tradition (possi-
bly originating from the Okunevo culture (Fig. 2-10) were cast using a model, thus leaving a rudimentary organ (Fig. 2-2→). At the end of the 2nd millennium BC, the Early Karasuk Bronze Complex in South Siberia maintained its own cast techniques, and adopted forms such as daggers and knives from the Mongolian Bronze Complex. This catalyzed the emergence of a new group of bronze types: knife types Bb (Fig. 2-3) and Bc (Fig. 2-4) and dagger type B of the Late Karasuk Bronze Complex. The Late Karasuk Bronze Complex then spread from Southern Siberia throughout Mongolia, thus displacing the Mongolian Bronze Complex by the end of the 2nd millennium BC. The diffusion of this bronze complex reached the western part of the Eurasian Steppe, and was confirmed based on remains attributed to Cimmerians in the Pontic steppe.

This situation of uniformity resulting from the Late Karasuk Bronze Complex continued until the early 1st millennium BC, when regional differences gradually emerged. The influence of the Central Plains became evident from the 8th to 6th centuries BC (knife type Bp) (Fig. 2-5) in the Great Wall region, which is located between Mongolia and the Central Plains of China. In Mongolia, the distribution of this type was less pronounced, with the Bc type persisting into this stage. In Southern Siberia, another type of knives appeared (D1) (Fig. 2-6). Although this time corresponds to the beginning of the early nomadic cultures (Scytho-Siberian cultures), it was associated with stronger regional diversity in bronze culture when compared to the preceding period.

The special technique of carving with a “mysterious pattern” (Грач, 1980) became popular in the southeastern Urals and Southern Siberia during the 7th century BC. A new group of bronzes using this technique appeared in these regions before spreading to Mongolia around the late 6th to early 5th centuries BC. This is represented by knife type D3 (Fig. 2-8; Matsumoto, 2020) and akinakes daggers or swords, such as No. 12. Many iron tools and weapons emerged in the eastern steppes from the 4th to 3rd centuries BC, at which time the daily use of bronze tools gradually began to disappear.

### Bronze tools and weapons found in Northern Mongolia

#### Daggers

No. 12 (numbers are reflected in Tab. 1 and Fig. 7-12; 9-12). This artifact is owned by the Burgan Provincial Museum (no. 4450, 84.86; length of 27.2 cm, width of 5.6 cm, and weight of 284.7 g). It is of the so-called akinakes type, which features butterfly-shaped guards. The hilt contains two grooves on the front and back, while the pommel of the hilt features the heads of two facing birds. The body of the sword contains a single narrow spine. The metal color is white-gold, it is partially covered with black rust, but there is no green patina. In Mongolia, similar daggers are known from Chandmani (Fig. 3-1, 3-2), while a knife with a similar pommel (two griffin heads with ears) is known from the Hobud province (Erdenechuluun, Erdenebaatar, 2011, no. 293).

At first glance, the present dagger is similar to those found in the Tagar culture of the Minusinsk Basin...
(Southern Siberia). According to N.L. Chlenova, this type of sword did not exist at the beginning of the Tagar culture, but appeared during the 6th to 5th centuries BC due to the influences of Altai and East Kazakhstan (Членова, 1967). Fig. 3-6 shows a similarly formed iron sword from the Krasnoyarsk region (Завитухина, 1983). Looking for similar objects in the Great Wall Region, the most similar is a sword from the Tenri University Sankōkan Museum (Fig. 3-3), which is nevertheless thinner and features a guard shaped more like a semi-circle. The sword from the Tomb 59, Maoqinggou, Inner Mongolia (Fig. 3-4) is also similar in regard to the shape of the hilt, guard, and narrow spine, although there is no groove in the hilt. Another similar sword was found in the Tomb 58 at the same site (Fig. 3-5). These have been dated to the late spring and autumn period to the early Warring States period (5th to 4th centuries BC) (Neimenggu wen wu gongzuo-dui, 1986). In terms of overall form, quantity and rusting, the Burgan material is closer to daggers from the Minusinsk Basin (the Tagar culture) than to those from the Great Wall region. This may be related to the slight or the location of Bulgan County in Mongolia.

**Spearheads**

No. 11 (Fig. 9-11). This artifact is owned by the Burgan Provincial Museum (no. 83.83; length of 18.4 cm, width of 4.8 cm, and weight of 249.6 g). The spine tapers toward the tip. There is a hole on one side of the hilt and another irregularly shaped hole at the middle of the spine on the opposite side. The latter was probably caused by a casting defect. The wings show pronounced grinding marks and feature rounded tips. Although there are few examples of this type of spear in the Great Wall Region, notable examples include bronze spearheads from the Gaohong Tomb in Shanxi Province (Fig. 4-2) and the Houbanjiu site in Naimanqi, Inner Mongolia (Fig. 4-1). These have thick spines at the base which then taper to the tip, as seen with the Burgan Provincial Museum example. The bronze weapons and tools from the Gaohong Tomb feature characteristics seen in the Mongolian Bronze Complex (15th to 11th centuries BC); indeed, such a spearhead may be related to this complex. It is not clear when the tip was sharpened to a rounded shape, but this may have occurred immediately after casting. There are many
daggers with rounded tips in this complex, which is interesting considering the “weapon” functions generally found in the Mongolian Bronze Complex.

A smaller piece with a similar shape to this spearhead was located in the exhibition room of the Khuvsgul Provincial Museum. V.V. Volkov previously reported on this (Волков, 1967; Fig. 4-3).

**Battleaxe**

**No. 10 (Fig. 7-10; 9-10).** This artifact is from the Khovsgol Provincial Museum collection (Y-64-32; length of 12.6 cm, width of 5.5 cm). The hilt is almost completely missing and the blade is noticeably worn away. It appears that a socketed hilt originally protruded from the body of the axe. The cross-section of the damaged part was polished. Three spines run parallel to the blade. A similar example can be seen by referring to Karlgren (1945) (Fig. 5-1).

There are many examples of battleaxes with multiple spines and flat blades, such as those shown in Fig. 5-2 and some axes found when excavating burials at the Yinxiu site of the Shang dynasty (Zhu Fenghan, 2013, Fig. 8-1, 8-2), which may also be of this type. Regarding the Khovsgol example, the details of the handle are not known, but all battleaxes from Mongolia and the Great Wall Region from the second half of the 2nd millennium BC feature protrusions on the upper portions of the hilts, similar to the “nei” on the Chinese “Ge” dagger axe from the Central Plain. The present example probably featured such a projection, which are also found in Andronovo culture battleaxes; it is likely that the projections and spines seen in this example originated in the Andronovo culture, which then further developed in the context of the Mongolia Bronze Complex (Мацумото, 2017). With its triangle-shaped blade tip, the Khovsgol example is thought to be a product of the Late Karasuk Bronze Age (11th–9th centuries BC), which followed the Mongolian Bronze Complex (Ibid). It is overall black-green in color and partly covered with lime coating. V.V. Volkov previously reported on this item (Волков, 1967). The drawing in Fig. 5-3 is considered a relevant example.

**Knives**

A total of 15 knives were examined from the two museums in Khovsgol and Bulgan provinces. The following descriptions are based on classifications previously listed by one of this study’s authors (see Matsumoto, 2018, 2020). Please refer to Tab. 1 for information on sizes and weights.

**Type A** (Fig. 2-1) is a product of the Mongolian Bronze Complex (15th to 11th centuries BC). The entire handle is deeply grooved, while the outline shows curvature when the back is viewed from above (the middle part of each figure or picture). Most knives of this type are characterized by prominent mold-joint marks and ornamental patterns protruding from the surfaces. These features suggest that they were cast by combining either two carved stone molds or one flat stone mold and one carved stone mold, the latter arrangement being referred to as “the single molding” in the following examples.

**No. 6 (Fig. 8-6; 10-6)** (Khovsgol Provincial Museum) features a nun ornamented handle with a ring pommel. A hole on the inner side of the pommel partially extends in to the handle. The molding line is distinct, but the curved out line on the back is not very sharp. The body is generally thin and of blackish-gold color without green patina.
No. 16 (Fig. 10-16) (Burgan Provincial Museum) is similar to No. 6. The blade is warped toward the tip, which has a wide cutting edge, possibly the result of sharpening of the broken part. The body is blackened with reddish rust on one side.

No. 14 (Fig. 10-14) (Burgan Provincial Museum) was cast via the single molding, with many holes and chips resulting from the casting process. There are also large mold joint marks. Despite such casting defects, the blade has been sharpened well, but does show some nicks indicating that it was used for practical purposes. The chipped area of the pommel shows noticeable wear. The edge of the groove on one side of the handle is relatively thick, and extends to the middle of the blade. The overall surface was darkened. There is a well-preserved golden metal and no greenish patina.

No. 8 (Fig. 10-8) (Khovsgol Provincial Museum) may be an ornament (e.g., pendant) or fragment of the head of a knife handle. It is flattened on one side, suggesting that it was cast via the single molding. The mold joint marks were markedly worn. If it is a fragment of a knife, then it can be classified as type A based on the grooved handle. The body is darkened without any patina.

No. 17 (Fig. 10-17) (Burgan Provincial Museum) was cast via the single molding. It features a circular hole under the top of the hilt without a pommel. The body is markedly worn through, retaining much of its golden metallic quality.

No. 5 (Fig. 10-5) (Khovsgol Provincial Museum) is similar to No. 17, but the hilt is very short. It may have originally been a knife without a handle, unlike other examples. In this case, it would have been inserted into a handle made of wood or bone. The groove on the base indicates it should be classified as type A. Some parts of the body are blackened, while other parts are slightly yellowish-gold without any patina.

Type B originates from the Minusinsk Basin of Southern Siberia. The earliest subtype of type B (Ba)
Fig. 7. Bronzes from the Burgan and Khovsgol Provincial Museum [1]

Рис. 7. Бронзовые изделия из Провинциальных музеев Бурган и Хубсугул [1]
Fig. 8. Bronzes from the Burgan and Khovsgol Provincial Museum [2]
Рис. 8. Бронзовые изделия из Провинциальных музеев Бурган и Хубсугул (2)
(Fig. 2-2) is based on the local knives made of bone handles and bronze blades found in the Okunevo culture; in type Ba, the handle and blade form an almost vertical angle. The chronological changes seen in type B are characterized by a gradual fading of the hilt/blade distinction (Fig. 2-3) and Bc (Fig. 2-4). The curved outline of type Bc without the hilt/blade distinction is similar to type A. It is therefore possible that changes between types Ba, Bb, and Bc occurred due to the influence of the Mongolian Bronze Complex, including type A. Unlike type A, the knives of type B (Ba, Bb, Bc, and Bp; Fig. 2-5) do not feature deep grooves on their hilts (the shapes of the cross-sections are almost flat). Although mold joint marks can be seen, they are more indistinct than in type A. Moreover, the outline is straight when the back is viewed from above, not curved as seen in type A. According to these features, type B seemed to have been casting clay or metal molds using a model. Although types Bb and Bc show morphological features from Mongolia, their casting method maintained the local tradition in the Minusinsk basin, such as in type Ba, which is not found in any Mongolia sites. Rather,
it is concentrated in the Minusinsk Basin. While type Bb is also scarce in Mongolia, this study found two examples. In addition, four knives of type Bc were recorded. There were no knives of type Bp, which is a characteristic of the Great Wall Region.

**Type Bb**

*No. 1 (Fig. 8-1; 10-1) (Khovsgol Provincial Museum)* features zigzag patterns that were cast on both sides of the slightly swollen hilt. While they initially seem to protrude, the zigzag lines were actually cast on the same surface as the blade. There are no ornamental patterns protruding from the blade, which is another characteristic of type B. Such a zigzag pattern is similar to the continuous square pattern (*Fig. 6-1*), which is common in types Bb and Bc. There is a narrow lump slightly off the top of the ring-shaped pommel, which may be a trace of pouring. The boundary between the blade and hilt is clearly delineated by a ridge or projection. The body color is slightly reddish-black.

*No. 15 (Fig. 8-15; 10-15) (Bulgan Provincial Museum)* features a rather deep groove and no expression of the border between the blade and hilt, but can be classified as type Bb based on the outlines of both the whole
form and back. The body color is blackish white-gold with no patina. This knife corresponds to figure 6-2 in Volkov’s article (Волков, 1967). Type Bb can be dated to the 12th to 11th centuries BC (Matsumoto, 2018).

Type Bc
No. 7 (Fig. 8-7; 11-7) (Khovsgol Provincial Museum) features a nun marked hilt with a square-shaped cross-section. The outline is curved. No pommel was
attached to the head of the handle. The body color is entirely black. On the both sides of the blade, the sharpening lines are clear from the base to the tip of the blade, which is also a characteristic found in some type Bc knives. Similar knives were present in the Dzhydy hoard of Zabaikalie (Гришин, 1981).

No. 3 (Fig. 7-3; 11-3) (Khovsgol Provincial Museum) features a similar overall shape to that seen in No. 7, but the handle is slightly thinner than the ring-shaped pommel. The tip of the blade was broken off. It is somewhat similar to type D3 in regard to some aspects, thus indicating a later manufacturing date than that for No. 7.

No. 18 (Fig. 11-18) (Burgan Provincial Museum) features a similar construction to that of No. 3, with a circular hole at the end of the handle. There is a raised area around the hole on one side, which may have been left behind when the clay model was drilled before making casting molds. There are two circular depressions near the hole, where metal samples may have been taken. The sharpening of the blade is clear, as in other examples of type Bc. There are a number of cast cavities. The body is whitish gold with no patina. Shown in figure 6-4, this knife seems to correspond to the example described by Volkov (Волков, 1967).

In No. 4 (Fig. 8-4; 11-4) (Khovsgol Provincial Museum), only the hilt remains. Both sides of the hilt feature deep grooves, which are typical of type A. However, owing to the outline of the back and the unclear mold joint marks, it is considered a type Bc example. The ring-shaped pommel is broken at the top, with the broken ends crossed. The overall surface is shiny black without any patina. Although type Bc can usually be dated anywhere from the 11th to 8th centuries BC, Nos. 3 and 18 may be from a slightly later period.

Type D3 originated in the South Siberia or Ural-Altai region before spreading to Mongolia, while types D1 (Fig. 2-6) and D2 (Fig. 2-7) are unique to the Minusinsk Basin (Matsumoto, 2020). Type D3 (Fig. 2-8) features a thin body (inverted triangular cross section of the hilt), while the head of the hilt is often pierced with a small round hole without a pommel.

No. 2 (Fig. 7-2; 11-2) (Khovsgol Provincial Museum) features an undecorated hilt with an almost triangular hole at the top. The body is yellowish-black.

No. 13 (Fig. 7-13; 11-13) (Burgan Provincial Museum) features a ring-shaped pommel. Inverted triangular depressions are found just below the pommel on both sides. As in No. 17, there are two circular depressions, which may have been created when collecting metal samples. No. 13 is also shown in Volkov’s report (Fig. 6-3; Волков, 1967).

Conclusion

The types of knives reported above seem to show characteristics related to regions of Northern Mongolia, with a large number of A and Bc types and small number of Ba and Bb types. The combination of these types is similar to those from findings in other regions of Mongolia (the Great Wall and south of Mongolia), which is in contrast to the Minusinsk Basin, where the shifts from type Ba to Bb and Bc occurred sequentially. The transformation from the Mongolian Bronze Complex to Late Karasuk Bronze Complex is therefore evident in this region. On the other hand, the presence of type Bb, which is rarely found in other parts of Mongolia, indicates that the Late Karasuk Bronze Complex may have influenced the area at an earlier time, particularly due to its close proximity to South Siberia.

Regional diversity is evident in the emergence of type D3. In Southern Siberia, type Bc was followed by type D1, with types D2 and D3 appearing in the following stage. In both Inner Mongolia and the Great Wall Region, type Bc was displaced by type Bp, which features some Chinese elements from the Central Plain. Type D3 eventually reached these regions around the 6th to 5th centuries BC. No types Bp, D1, or D2 were found during the survey conducted in this study. It is therefore likely that type Bc persisted for a relatively long period of time in Northern Mongolia, while type D3 emerged due to an influx from Southern Siberia. Thus, the metallurgical tradition of Northern Mongolia continued to develop in the greater context of the eastern Eurasian Steppes, including Southern Siberia in the contexts of both the Bronze Age and the Early Iron Age.

Literature


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ИЗУЧЕНИЕ ОРУДИЙ И ОРУЖИЯ БРОНЗОВОГО И РАННЕГО ЖЕЛЕЗНОГО ВЕКОВ ИЗ СЕВЕРНОЙ МОНГОЛИИ

В Монголии в последнее время состоялись международные совместные раскопки, направленные на изучение формирования и развития ранних кочевых культур во II–I тыс. до н. э. Эти исследования способствовали значительному прогрессу благодаря анализу обнаруженных в ходе раскопок разнообразных материалов. Однако остаются неясными вопросы, связанные с коллекциями бронзовых изделий этого периода в Монголии. Несмотря на то что корпус таких изделий периодически пополняется сравнительно большим количеством находок, исследование существующих коллекций имеет решающее значение для изучения взаимосвязей Монголии с другими регионами евразийской степи, включая Южную Сибирь и регион Великой Китайской стены. В данной статье представлены материалы изучения бронзовых изделий, проведенного авторами в Северной Монголии. Обсуждается также место рассматриваемого региона в системе взаимодействий древнего населения восточной части евразийской степи в эпоху бронзы.

КЛЮЧЕВЫЕ СЛОВА: евразийская степь, бронзовый век, ранний железный век, ранние кочевые культуры, музеиные коллекции, изделия из бронзы, кинжал, нож, боевой топор.