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TYPOLOGY OF HORSE EQUIPMENT OF THE EARLY SAKA PERIOD

Horse equipment is considered to be one of the main categories of the so-called “Scythian triad” and is a key element of the equestrian culture, the material base of which has been significantly replenished in the course of research in recent decades. As you know, parts of horse harness are among the most popular finds, as the burial rite burials with horse is a characteristic burial monuments of the nomadic Scythian-Saka period of Kazakhstan. Items of horse harness are the most indicative for determining the chronology of monuments of the Early Saka period. Accordingly, the agenda includes comprehension of the collected data, analysis of the problems of evolution and transformation of horse armament of the Early Iron Age, based on the typological method of scientific knowledge. The object of this study is the bridle complex and its constituent elements, the development of which originates in the Bronze Age and already in the Early Iron Age is characterized by the search for the most optimal functional variations of use. The article presents a typology of ways to connect bits and bit hoops, and also considers the saddle complex and its components. A graphic reconstruction of the bridle of the Early Saka period was made.

Key words: Kazakhstan, Early Saka period, horse equipment, bits, bit hoops, saddle, complex, type, typology, reconstruction.

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Ерте сақ кезеңінің ат әбзелдерінің типологиясы

«Скиф үштігі» санатындағы негізгі компоненттерінің бірі болып саналып, салт аттылық мәдениеттің бастауында тұрған ат әбзелдер кешені соңғы жылдардағы зерттеулер нәтижесінде көптеген заттай деректермен толықтырылып отыр. Ат әбзелдер бөліктері салыстырмалы түрде ең көп табылған заттар қатарына жатады, өйткені жылқымен мәйітті жерлеу ғұрпы Қазақстан территориясындағы сақ-скиф кезеңінің көшпелілерінің жерлеу ескерткіштерінің өзіне тән белгісі болып табылады. Ат әбзелдері ерте сақ заманындағы ескерткіштердің хронологиясын анықтауда негізгі индикаторлары санатында алатын орны ерекше. Осы орайда ерте темір дәуірі кезеңінің жылқы әбзелдерінің өзіндік даму эволюциясы мен жеке және құрамдас бөліктерінің трансформациялану үдерісін ғылыми танымның типологиялық әдісі арқылы айғақтайтын зерттеудің уақыты жетті. Аталмыш зерттеудің нысаны деп қарастырып отырғанымыз өзіндік даму тарихы қола дәуірінен бастау алып, ерте темір дәуірінде қолайлы байланыс әдістерін іздестірген, ат әбзелінің негізгі бөлігі болып табылатын жүген кешені мен оны құраушы бөлшектерінің байланыс түрлері болып табылады. Барысында ауыздық пен сулықтың байланысу түрлерінің типологиясы жасалды. Ерте сақ кезеңінің жүгенінің реконструкциясы жасалып, ер-тұрманы мен оны құраушы бөліктері жайында баяндалады.

Түйін сөздер: Қазақстан, ерте сақ кезеңі, ат әбзел, ауыздық, сулық, ер-тұрман, кешен, түр, типология, реконструкция.

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Типология конского снаряжения раннесакского периода

Конское снаряжение по праву считается одной из основных категорий так называемой «скифской триады» и является знаковым элементом кочевнической культуры, материальная база которой существенно пополнилась в ходе исследований последних десятилетий. Как известно, детали снаряжения верхового коня относятся к числу наиболее массовых находок, так как захоронения по обряду трупоположения с конем являются характерной чертой погребальных памятников кочевников скифо-сакского периода Казахстана. Предметы конской сбруи являются

наиболее показательными для определения хронологии памятников раннесакского периода. Соответственно на повестке дня осмысление собранных данных, анализ проблем эволюции и трансформации конской амуниции раннего железного века, с основой на типологический метод научного познания. Объектом данного исследования является узденный комплекс и его составные элементы, развитие которых берет свое начало в эпохе бронзы и уже в раннем железном веке характеризуется поиском наиболее оптимальных в функциональном отношении вариаций использования. В статье представлена типология способов соединения удила и псалий, а также рассматривается седельный комплекс и его составные части. Была сделана графическая реконструкция узды раннесакского периода.

Ключевые слова: Казахстан, раннесакский период, конское снаряжение, удила, псалии, седло, комплекс, тип, типология, реконструкция.

Introduction

The period of the late Bronze Age and the initial period of the Early Iron Age, marked in the scientific literature by various names (Early Saka, Arzhan-Mayemer, Kurtu-Zevakino, transition period, etc.), is characterized by the formation of a nomadic society based on production needs in the steppe, mountain-plain, forest-steppe regions of Eurasia. These changes increased the importance of the horse in the economic and military sphere, and formed the culture of horse riding. In the Saka-Scythian cultures, a special place was occupied by the most complex worldview over time, the custom of burying a runaway, saddled horse with a corpse or individual wearing horse equipment on the grave (*pars pro toto*). In this regard, the structure of horse equipment, as the main part of material culture, has become one of the key indicators that solve the issues of mutual exclusion, continuity, and periodization of monuments of Early nomads.

On the territory of Kazakhstan, there are clearly significant similarities and features in the construction and funerary items of funerary monuments belonging to the cultures of the Early Saka period. Nevertheless, among the items of horse harness common to the Saka-Scythian-Siberian style, the regional distribution of which extends over a relatively large territory, cannot be considered as a determinant of culture. The components of the bridle are considered by researchers in most cases individually, depending on the morphological or characteristics of the material of manufacture. At the same time, using the typological method of historical knowledge, we decided to systematize, first, depending on the functional activity. At the same time, in a number of research methods, we have taken as a basis the principles of historicity and systematic historical development.

From the historiographical point of view, the connection of the bit and the bit hoops of this period

is found in the works of M.P. Gryaznov (1947), M.K. Kadyrbayev (1968), K.V. Chugunov (2005), P.I. Shulga (2008), S.B. Val'chak (2009) and other researchers. In most cases, the typology of the bit and bit hoops is considered individually. The main reason for this is that the detection of two particles in the same complex is relatively rare, usually more common without bit hoops of the bit in funerary monuments, burials, as random finds.

K.A. Akishev believes that the first originals of the bits and bit hoops appeared after or at the time when the horse was domesticated (Akishev, 1973: 53). The features of the morphological structure of horse equipment, dating from the Early Saka period, not only indicate a comparative typological period, but also trace the evolution of the development of each detail of horse equipment, the search for suitable forms, methods in order to improve their function. The most important of these are the contact types of bit hoops and the bit in the bridle, which provide the role of controlling the riding horse. In this regard, the main goal of our research is the systematic development of typologies of the bit and bit hoops belonging to the Early Saka period.

Materials and methods

The materials used in this publication mainly come from the author's archaeological excavations, as well as from the museum and archival funds of the Republic of Kazakhstan and the Russian Federation.

The typological analysis was based on the method of combining bits and psalms, which directly influenced the further development and transformation of horse equipment as a whole. The agenda includes comprehension of the collected data, analysis of the problems of evolution and transformation of horse ammunition of the Early Iron Age, based on the typological method of scientific knowledge. The object of this study is the bridle complex and its constituent elements, the

development of which originates in the Bronze Age and already in the Early Iron Age is characterized by the search for the most optimal functional variations of use.

Results and Discussion

Types of connection of the bit and bit hoops

The chronological framework of the IX–VI centuries BC considering the bit and bit hoops as a major integral part of the bridle, we will try to systematize the relationship between bit and bit hoops (despite the differences in the appearance of each part), contributing to the classification criteria.

The first type. To the three-pronged bone (horn) or bronze in the middle hole of the bit hoops the head (end) of a soft or hard bit is attached with a cheek piece (reins, martingale) (figure 1, 1), and the cheek piece of bridle passes through the other two holes of the bit hoops.

“Soft bit” made of bone (horn), belt, horse mane, are usually found with bit hoops with three holes made of horn. That is, the change of forms in accordance with the natural capabilities of the object from which the horse harness is made, indicates the inferiority of traditions in the creation of the bit and the bit hoops. Perhaps, during the funeral, the bronze bit of the horse was replaced with a “soft bit”. This type of connection between the bit and the bit hoops is associated with the Bronze Age and goes back to the end of the Early Saka period.

The second type. The bit heads are attached horizontally to a special longitudinal vertical opening of the bit hoops (figure 1, 2). In the holes in the other two heads of the bit hoops pass and fasten the cheek piece of the bridle, as in the first type. This type of connection between the bit and the bit hoops, according to some scientists (Akishev K.A. & Akishev A.K., 1978: 46; Gryaznov, 1980: 61), belongs to the early period (the second half of the VIII – beginning of the VII century BC), it is considered by the second scientists as a local regional type (Vishnevskaya, Itina, 1971: 202). However, such types of communication are found in Central (Beisenov, Shablavina, 2015: 106) and Eastern Kazakhstan (Besetayev, 2016: 41).

The third type. The two heads of the bit are connected by a bit hoops, from the middle part of the bit hoops they are tied on a hook, similar to the head of the bit. The two holes of the bit hoops are attached to the cheek piece (figure 1, 3). This type of relationship between the bit and the bit hoops, according to P.I. Shulga, arises as a more perfect

version of the above-mentioned second type (Shulga, 2008: 75). In addition to this species, all bronze bit of the Early Iron Age found on the territory of Kazakhstan consist of two parts connected by an inner ring, and heads of various shapes.

The fourth type. Two heads of the bit are attached from the middle part of the bit hoops to the growth of the type “T” or “Y” (figure 1, 4–5). And a cheek piece is attached to the holes in both heads of the bit hoops. On one head of the bit hoops of the “Y” type, the cheek pieces are passed through two holes. This connection of the bit and the bit hoops is the most common form of activity of the Early nomads in search of the most favorable sides in the management of the riding horse.

The fifth type. To the growth in the middle part of the bit hoops, similar to the fourth type, attach a bit through an additional hole (figure 1, 6). The cheek piece is tightened into the holes in both heads of the bit hoops. To date, this type of bit hoops has not yet been found in Kazakhstan, but some finds can be found by traces left in additional holes at the beginning of the bit (Chekin, Tulegenov, Besetayev, 2019: 413, fig. 4). In general, the appearance of loops in the central part of the bit hoops is a method in finding suitable options for connecting the bit hoops and the bit (Bokovenko, 1981: 56–57; Marsadolov, 1998: 14, fig. 1).

The sixth type. The bit hoops with three holes tightens the knot with the laces of the belt, divided into three. A belt laces is passed to the additional hole in the bit head or to the middle hole in the head, and the bit head is attached to the reins (figure 1, 7–8). This type of connection is based on the cheek piece found during excavations from the preserved bit of bridle, M.P. Gryaznov contact with the bit hoops through the additional hole of the bit (Gryaznov, 1947: 10, fig. 3, 1), and M.K. Kadyrbayev reconstructs two types of fixed bit hoops through the head of the bit (Kadyrbayev, 1968: 29, fig. 2, 3).

The seventh type. To the additional hole at the beginning of the bit is provided with two holes of the bit hoops, the head of the bit is attached to the reins and martingale, and the cheek piece to the two holes of the bit hoops (figure 1, 9). This type of connection between the bit hoops and the bit is close to the above mentioned second and third types on the functionally acceptable side. However, there are exceptions on the mounting side. This type of connection is currently found only in the Izmailovo burial ground in Eastern Kazakhstan (Ermolaeva, 1987: 159, fig. 3, 18; 2012: 189, fig. 59, 2).

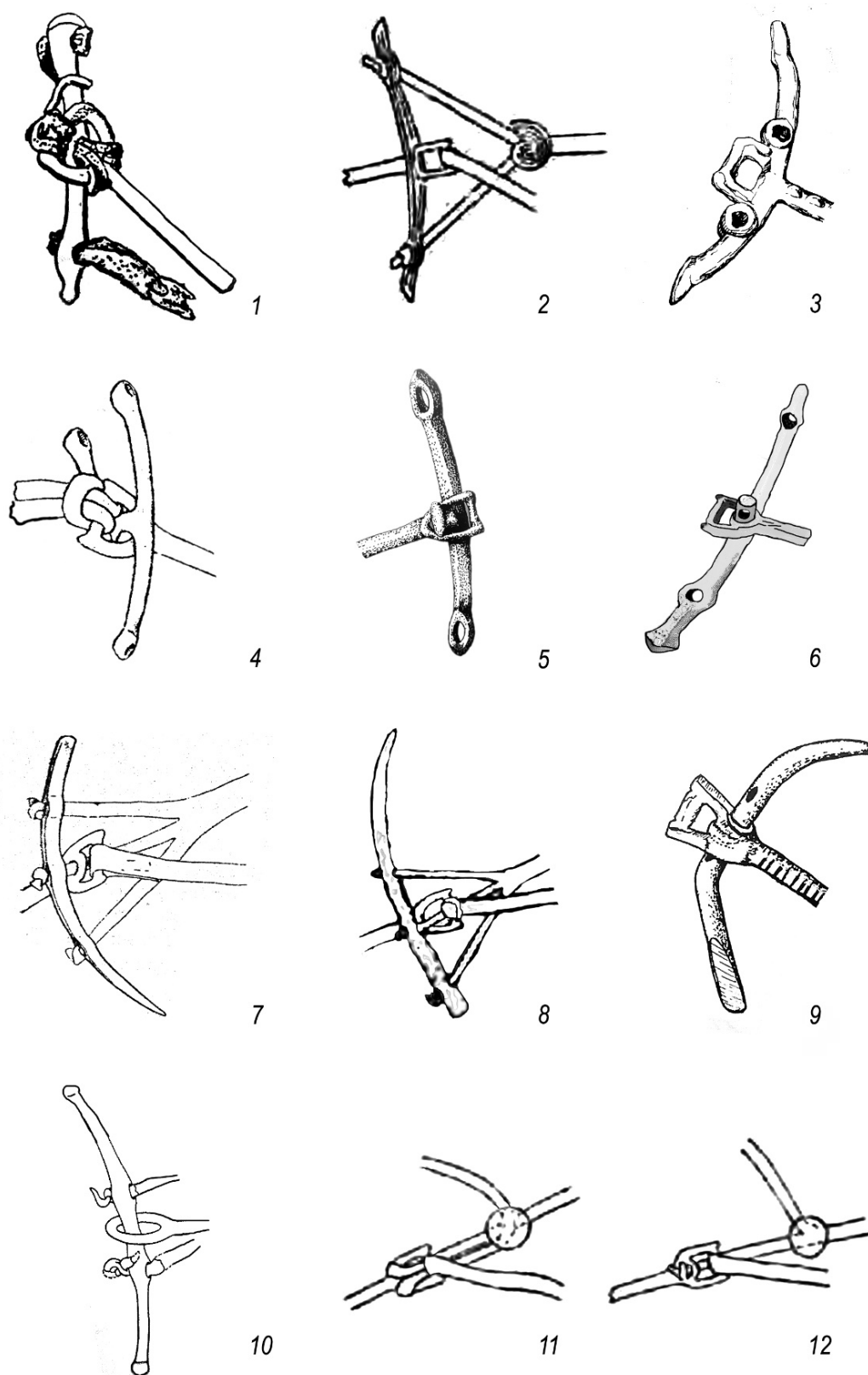


Figure 1 – Types of connection of the bit and bit hoops of Early Saka period: 1 – first type (Shulga, 2008); 2 – second type (Kadyrbayev, 1968); 3 – third type (Vishnevskaya, Itina, 1971); 4–5 – fourth type (Gryaznov, 1947; Tkachev, Tkacheva, 1999); 6 – fifth type (Besetayev, 2021: in print); 7–8 – sixth type (Gryaznov, 1947; Kadyrbayev, 1968); 9 – seventh type (Ermolaeva, 1987; 2012); 10 – eighth type (Shulga, 2008); 11–12 – curbing bit without bit hoops (Kadyrbayev, 1968).

The eighth type. The bit heads are attached to the bit hoops with two holes, and the two holes of the bit hoops are attached to the cheek piece. The reins are tied to the heads of the bit (figure 1, 10). By the end of the Early Saka period, both ends of the bit hoops were decorated with images of various animals and mythical beasts. This type of communication has survived to this day, except for the change in the type of material from which it is made.

In addition, there are cases when in some funerary monuments only the bit hoops itself

is found (figure 1, 11–12). The head of the bronze bit hoops was tied to the bridle and reins. M.K. Kadyrbayev refers them to the type of saddle without bit hoops, and considers them as one of the types of putting on the bridle (Kadyrbayev, 1968: 21). There are cases when only the bit hoops itself is found in funerary and ritual monuments and burial grounds, but this type of connection remains presumed due to the lack of preservation of the bridle, i.e. the type of putting on the bridle is unknown to us.

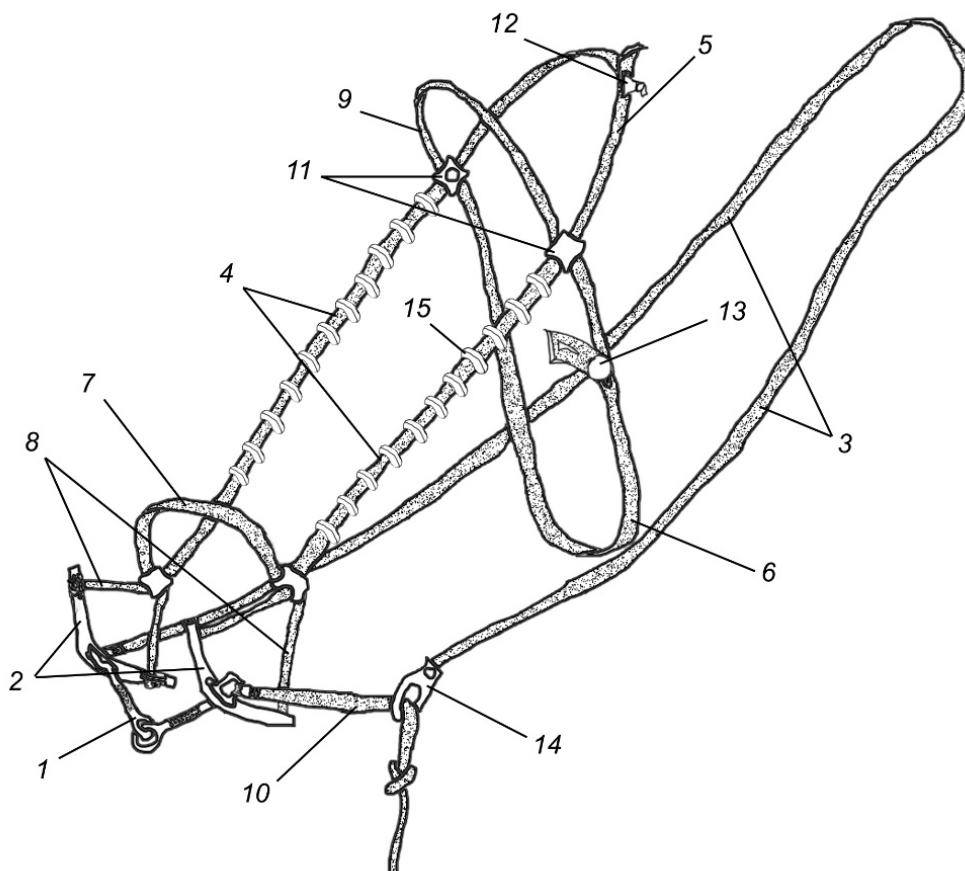


Figure 2 – Bridle belts and composite bronze details of the Early Saka period:
 1 – bit, 2 – bit hoops, 3 – reins, 4 – cheek piece, 5 – headstall, 6 – throatlatch, 7 – noseband,
 8 – bit hoops belts, 9 – browband, 10 – martingale, 11 – transmitters; 12 – warp; 13 – button;
 14 – spool; 15 – conductors (reconstruction of the author).

The components of the bridle and saddle

The harness of a riding horse can be divided into two parts: the control (bridle) and the protective (saddle). The main component – bridle belts are divided into service and decorative. Utility belts include cheek piece, headstall, throatlatch, noseband, reins, martingale and bit hoops (figure 2).

Their interaction is provided by a distributor (figure 3, 1–2), a button (figure 3, 3) and a fold (figure 3, 4), which act as a fastener. The decorative bridles are the browband and hanging belts (Besetayev, 2014: 23, fig. 2). Decorative bronze pierce and pendants can be attached to these belts. Pierce passed through the straps of harness, decorated bridle and saddle.

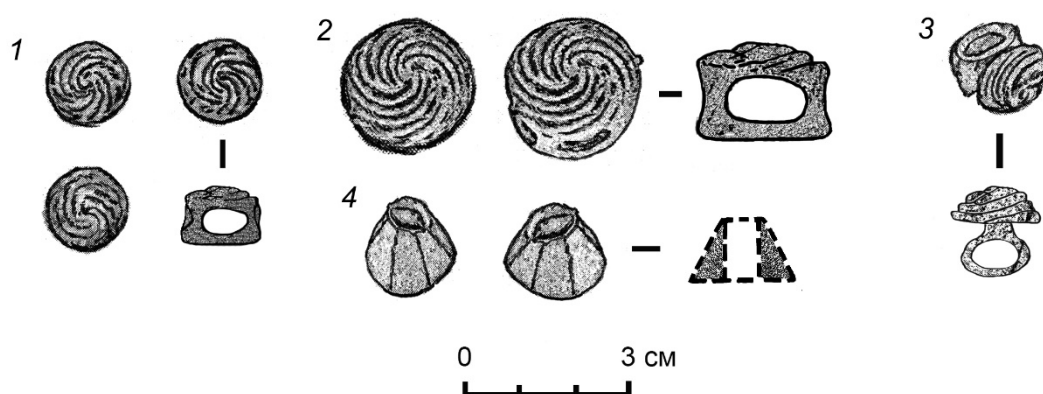


Figure 3 – Fittings bridle and breastplate: 1 – transmitters bridle; 2 – transmitter breastplate; 3 – prong bridle; 4 – fold (Besetayev, 2016: 44, fig. 2)

It is worth noting that the structure of the bridle was in the form of a halter when manually training the first horse. Since ancient times, we see that it was a chumbur with one or two strings (Samashev, 2013: 35, fig. 19–21). In the early stages bit hoops was round and rectangular, rod-shaped forms of bit hoops appear from bone over time in the transitional periods of the Bronze Age and the Early Iron Age (Bokovenko, 2017: 9). Initially, the bit hoops of the Early Saka period were made of horn, and then of bronze. Morphological forms of a metal bridle have significant features on the part of periodicity. The bronze bridles found on the territory of Kazakhstan consist of two parts, similar to a *chain*, through a hole in the inner ring (figure 4). Species of *solid*, *chain*, and *three-wheeled* bridle species have not been found in the region to date. The technology of manufacture of bronze bridle and bit hoops are produced in two types of *casting* and *forging*. At the initial stage of the Early Saka time, the holes of the bit are rounded and have a relatively smaller diameter (figure 4, 1), i.e. the main outer hole is not put on the bit hoops. The round hole at this stage is followed by holes of various shapes. The morphological shape of their main holes is divided into several types: *triangular* (figure 4, 2), *rectangular* (figure 4, 3), *stirrup type* (figure 4, 4–6), *pawn-shaped* (figure 4, 7), *8-shaped* (figure 4, 8), *oval* (figure 4, 9). And in the transition periods from the Early Saka time to the classical Saka time (VI–V centuries BC), the eighth type of connection between the bit and the bit hoops begins to manifest itself (figure 4, 10). At the same time, it should be noted that different forms of the two parts of the bit in the period under consideration lead to different ideas. In our opinion, such features arise as a result of the fact

that the functional part of the product wears out over time, and then the finished part is used during the repair process.

The history of the development of bit hoops in the Early Iron Age can be divided into several stages. In the Early Saka period, the bit hoops, like the bit, was made of natural materials (bones, horns). As mentioned above, in the early stages of the Early Iron Age, rod types of bit hoops were widely used. Among the oldest bit hoops in the Early Saka period are the bit hoops with three holes made of horn (figure 5, 1–2) (Sorokin, 1966: 44, fig. 5, 1; Akhmetov, Samashev, Kariyev et al., 2019: 11–12, fig. 4). The marked bit hoops were found in the burial grounds of Kurtu 2 and Eleke sazy. The first monument was initially considered by scholars as an early stage of the Mayemer culture, and then separated from the Mayemer culture and leads to conclusions as the first stage of the Bike culture (Tishkin, 2011: 278). By analogy, such bit hoops are found on the monuments of Arzhan-1 (Gryaznov, 1980: 29) and the Chauhu culture in Xinjiang (Sulga, 2020: 34). According to the latest publications on the basis of radiocarbon examination, the monument of Arzhan-1 and Mokhuchakhan is dated to the IX century BC (Alekseev, Bokovenko, Vasiliev et al., 2005: 68; Sulga P.I. & Sulga D.P., 2020: 81). The holes from the bit hoops found on the second monument, which belongs to the Early Iron Age, are different: the middle hole is vertical, the other two edges are pierced on the side. Bit hoops made of horn with such holes are found in the Altai mountains and date back to the Bronze Age (XI–X centuries BC) (Bokovenko, 2017: 19, fig. 6). The authors, analyzing the features of the construction and the finds found, date the monument to the middle of

the IX century BC (Akhmetov, Samashev, Kariyev et al., 2019: 13). The horn bit hoops found may have reached the Saka period, starting from the last

Bronze Age. However, these types of bit hoops, made from natural material, served as the basis for the formation of metal bit hoops.

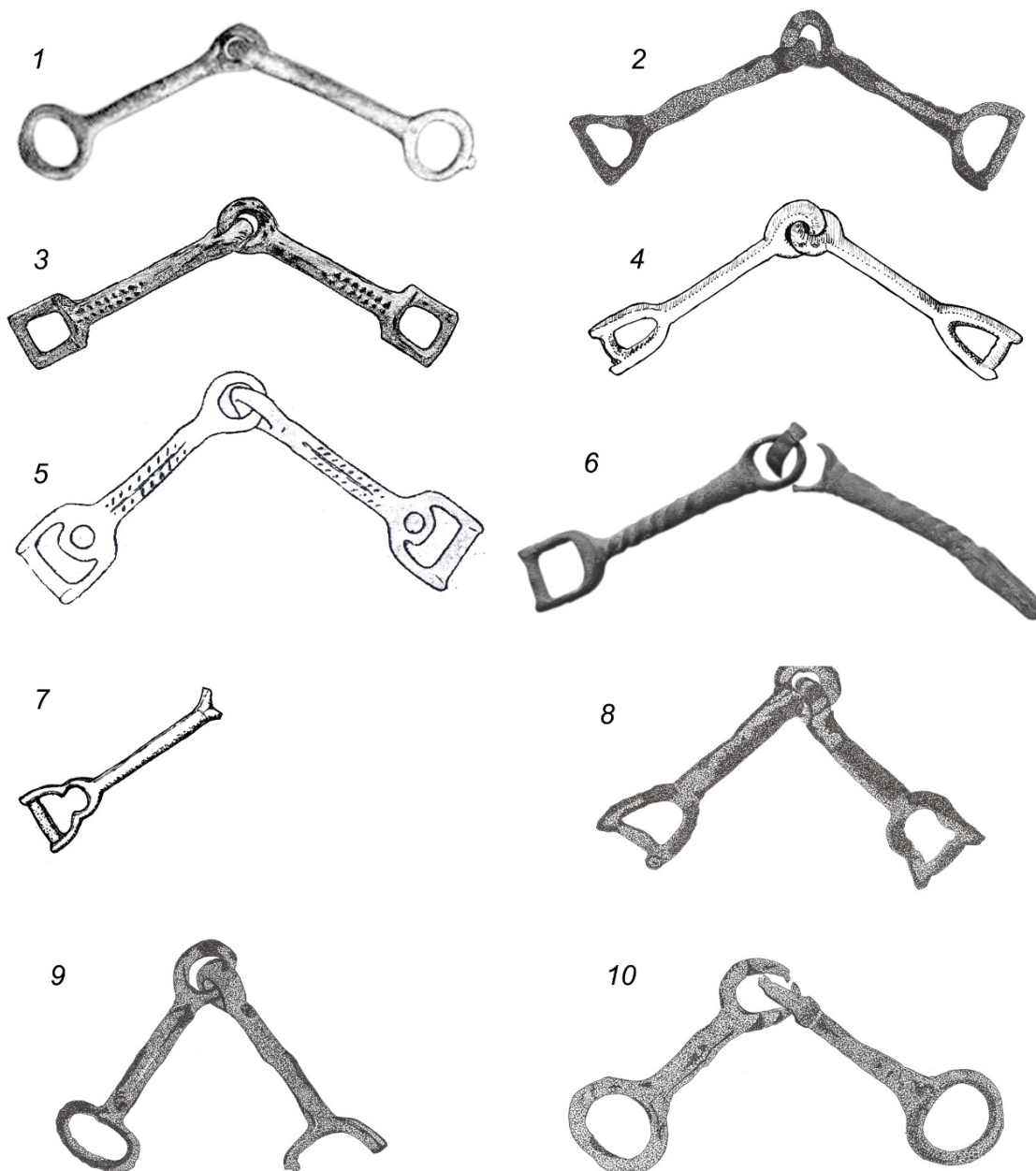


Figure 4 – Classification of bronze bits by external holes: 1 – circular (small), Arzhan-1 (Gryaznov, 1980); 2 –triangle, random find (from the museum in Ust-Kamenogorsk, East Kazakhstan, figure by the author); 3 – rectangle, Barshatas, random find (Besetayev, 2016); 4 – stirrup type, Gerasimovka (Besetayev, Kariyev, 2016); 5 – stirrup type, with an additional hole (Gryaznov, 1947); 6 – stirrup type, random find (from the museum in Zaisan, East Kazakhstan, figure by I.V. Merz); 7 – pawn-shaped, Eleke sazy (Toleubayev, Zhumatayev, Omarov et al., 2020); 8 – octagonal, random trophy (from the museum in Ust-Kamenogorsk, East Kazakhstan, figure by the author); 9 – oval, random trophy (from the museum in Ust-Kamenogorsk, East Kazakhstan, figure by the author); 10 – round (large), random trophy (from the museum in Ust-Kamenogorsk, East Kazakhstan, figure by the author)

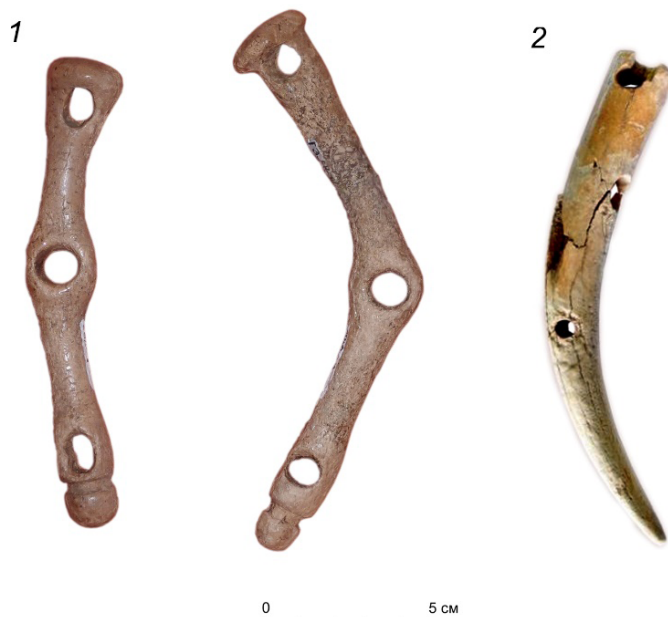


Figure 5 – Bit hoops from the horn: 1 – Kurtu 2 (Sorokin, 1966); Eleke sazy (Akhmetov, Samashev, Kariyev et al., 2019).

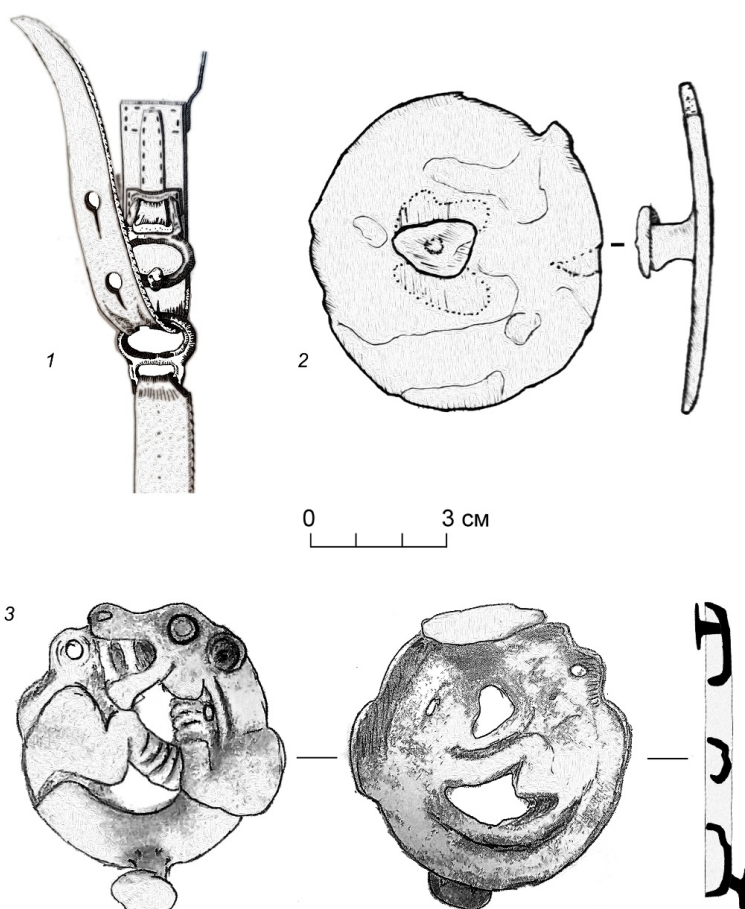


Figure 6 – Details of the saddle of the Early Saka period: 1 – a way to pull up the girth (Shulga, 2008); 2 – buckle-clasp (Besetayev, Kariyev, 2016); 3 – girth in the image of a predator, random prey (Zhetyusu, figure by the author).

Judging by the fact that the horses of the Early Saka period have not yet been found (not preserved), they were also in the form of “soft seat”. However, bronze fragments are known from many fossil materials today. Among them, the most common are *buckles, transmitters, mounting brackets, buttons*. Bronze buckles belonging to the Early Saka period consist of two parts: *the spring buckle and the spring block*. Unlike those found on funerary monuments, in the Early Iron Age there was a saddled horse, making it impossible for the horse’s saddle to move. To the left belt girth is attached the main spring girth, and to the long right belt buckle is attached the girth (figure 6, 1). In some found funerary monuments, there is a buckle-clasp connecting the right girth of the saddle belt (figure 6, 2). The bronze details related to the saddle of the mentioned horse are decorated with images in the animal style (figure 6, 3) or various patterns. Such bronze decorations are important for researchers when reproducing the worldview, emphasizing the place of the buried in society.

One of the parts of the saddle of the Early Saka period was that the breastplate straps securely held the rider without moving away from the saddle. The breastplates are connected to the horse’s chest on either side of the saddle and are secured to the breastplate by means of buttons that pass through the transmitter probes to prevent it from sliding down. The transmitters and buttons of the breastplates are larger than the bridle (figure 3, 2). In some cases, there are also two-seam models of breastplates (Shulga, 2003: 397–398, fig. 1; 2016: 98–99).

By the end of the Early Saka period (the end of the VI–V century BC), the burial rite of horses with a person, or burial with the addition of horse equipment, is canceled in funerary monuments. These changes may be the result of migration from the East (Tairov, 2017: 56–57). However, the ancient nomadic inhabitants of the Altai mountains preserved these ritual burials. There are many opinions about the replacement of the Altai mountain by Early Saka-Scythian cultures with Pazyryk tribes (Mogil’nikov, 1986: 53; Marsadolov, 1999: 107). In the Pazyryk period, horse harness *was specially made of wood for ritual burials*, decorated with images of animals, wild animals and gilded. However, in the Early Saka period, it is rare to find horse equipment specially made for the funeral rite with gilding, i.e. covered with a thin foil of gold (Beisenov, Shablavina, 2015; Toleubayev, Zhumatayev, Shakenov et al., 2020). Many finds of horse equipment parts found on the territory of Kazakhstan were used in the daily life of Early nomads.

We consider it appropriate to note that the use of iron in the manufacture of horse equipment in the early period of the Saka time, which is quite rare, indicates a high level of metalworking in this region. In Saka-Scythian times, this was still far away, but even then, special importance was attached to the external manifestations of domination during life and after death. Such things in gold attire, in this case, the details and decorations of horse equipment demonstrate not only a high level of development in terms of jewelry technology, but also issues related to social stratification, which in one way or another characterizes the status of the insignia of power.

Conclusion

Examples of horse harnesses, weapons, and military belts are common in relatively large areas with other material objects. Therefore, on the basis of these things, it is difficult to determine the boundaries of a known material culture. At the same time, the course of various migration processes contributed to the spread of the above substances over vast territories. Nevertheless, it should be noted that the connections, material and manufacturing technology, morphological forms, and stylization of the bit and bit hoops of the Early Iron Age have their own distinctive features. These features, along with the territory of distribution of horse equipment, determine the cultural ties and chronological framework.

The need to develop the typology of the metal parts of the bridle and saddle of the nomadic Saka warrior rider, taking into account the functional relationship of the species, allows, along with cultural and chronological attribution, to identify the morphological features and development processes of some parts of the harness. Returning to the question of the origins of the early stage of the “Scythian-Saka triad” and its development throughout the Eurasian cultural continuum is very complex and requires a thorough comparative study of all materials. I would only like to note that the origin in the Early Saka period of individual and constituent elements of material culture is the result of extensive cultural exchange on the vast territory of the Eurasian steppe belt at the beginning of the first millennium BC. The research work is presented as the main conclusions of the author’s dissertation work.

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