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# АРХЕОЛОГИЯ

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# ARCHAEOLOGY

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## ЭЛЕМЕНТЫ МИЛИТАРИЗАЦИИ У НОСИТЕЛЕЙ АТБАСАРСКОЙ И БОТАЙСКОЙ КУЛЬТУР СЕВЕРНОГО КАЗАХСТАНА

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Показано, что значительные изменения, произошедшие в социальной организации обществ после domestikации лошади в начале эпохи палеометалла, отразились на производстве орудий труда. Появились их новые виды, которые могли использоваться в качестве оружия. Наконечники копий, стрел, дротиков, ножи, гарпуны, молоты, боласы и другие артефакты, найденные на территории более чем 200 памятников Северного Казахстана, которые относятся к атбасарской (7–3-е тыс. до н. э.) и ботайской (4–3-е тыс. до н. э.) культурам, дают возможность исследовать формы ранней милитаризации древних обществ. Отмечается, что некоторые орудия труда могли быть универсальными и использоваться как в хозяйстве, так и в военных столкновениях. После domestikации лошади мир палеометалла вступил в полосу войн нового поколения, направленных на уничтожение противника конницей. В этом состоит принципиальное изменение характера вооруженных конфликтов в древности. Делается вывод о том, что если для охотников-собирателей, каковыми были носители атбасарской культуры, враждебные конфликты являлись локальными, то для ботайцев они вышли уже на межрегиональный уровень.

**Ключевые слова:** Северный Казахстан; неолит; энеолит; охота; коневодство; конфликт; милитаризация.

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## ЭЛЕМЕНТЫ МИЛИТАРИЗАЦИИ У НОСБИТАУ АТБАСАРСКОЙ И БАТАЙСКОЙ КУЛЬТУР ПАУНОЧНАГА КАЗАХСТАНА

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Паказваецца, што пасля дамэстыкацыі каня ў пачатку эпохі палеаметалу ў сацыяльнай арганізацыі грамадства адбыліся значныя змены ў галіне матэрыяльнай і духоўнай культуры. З'явіліся новыя віды прылад працы, якія маглі выкарыстоўвацца ў якасці зброі. Наканечнікі коп'яў, стрэл, дроцікаў, нажы, гарпуны, молаты, боласы і іншыя артэфакты, знойдзеныя на тэрыторыі больш чым 200 помнікаў Паўночнага Казахстана, якія адносяцца да атбасарскай (7–3-е тыс. да н. э.) і батайскай (4–3-е тыс. да н. э.) культур, даюць магчымасць даследаваць формы ранняй мілітарызацыі старажытных грамадстваў. Адзначаецца, што некаторыя прылады працы маглі быць універсальнымі і выкарыстоўвацца як у гаспадарцы, так і ў ваенных сутыкненнях. Пасля дамэстыкацыі каня свет палеаметалу ўступіў у паласу войнаў новага пакалення, накіраваных на знішчэнне саперніка конніцаў. У гэтым заключаецца прычына змены характару ўзброеных канфліктаў у старажытнасці. Робіцца выснова аб тым, што калі для паляўнічых-збіральных, якімі былі носьбіты атбасарскай культуры, варажыя канфлікты з'яўляліся лакальнымі, то для батайцаў яны выйшлі ўжо на міжрэгіянальны ўзровень.

**Ключавыя словы:** Паўночны Казахстан; неаліт; энеаліт; паляванне; конегадоўля; канфлікт; мілітарызацыя.

## ELEMENTS OF MILITARISATION OF THE ATBASAR AND BOTAI CULTURES OF NORTHERN KAZAKHSTAN

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The huge changes that took place after the domestication of the horse at the beginning of the paleometall in the field of material and spiritual culture, in the social organisation of societies, undoubtedly affected the production of various tools. There were new types of tools that could be used as weapons. The tips of spears, arrows, darts, knives, harpoons, hammers, bolas and other artifacts from more than two hundred sites of Northern Kazakhstan, related to the Atbasar (7000–3000 BC) and Botai (4000–3000 BC) cultures give an opportunity to consider questions of forms of early militarisation of ancient societies. Some tools, their seriality and significant standardisation indicate that they could be universal and complex, they were used in agriculture, as well as in military clashes. After the domestication of the horse, the world of paleometall entered a new generation of wars aimed at the direct destruction of the enemy by cavalry. This is a fundamental change in the nature of armed conflicts, the transformation of the content of war or armed struggle in Antiquity. If the hostile conflicts among hunter-gatherers, which were the bearers of the Atbasar culture, are primarily local, then for the Botai people they are already reaching the interregional level.

**Keywords:** Northern Kazakhstan; Neolithic; Eneolithic; hunting; horse breeding; conflict; militarisation.

### Introduction

During archaeological researches done at the monuments of the Holocene meso-Neolithic and Eneolithic period (4000–3000 BC), particularly at the sites and settlements with rich cultural layers filled with artifacts, significant number of original burial and religious structures, and residential household complexes have been investigated [1, p. 305–306]. Our results suggest more and more that some facts can be connected to economic and household activity of ancient people, but also to elements of militarism. It is commonly known that hunting, fishing, and gathering, which had held an exclusively extensive character and did not fully satisfy human life needs, formed the main source of life-sustaining human activity in the first half of the Holo-

cene. The tradition of expropriation and appropriation of valuable religious, sacred, and everyday objects had got a significant role in that period. Naturally, the appropriation of another's property was generally far from being peaceful and was accompanied with violence also with using hunting tools which from that moment had become instruments of armed violence and war. To some extent, the process of militarisation of everyday life of Ancient hunters and fishermen was accompanied with an ancient feature of human society – cannibalism, and it was one of the reasons of hostile conflicts which had fanned the flames of the militarisation of everyday life of people in the late Stone Age. According to archaeology, the gradual disappearance of that custom is

observed within the transition of the economy to productive forms of husbandry, when «the man of industry» has begun to sacrifice wild and domesticated animals in rituals and ceremonies instead for people.

From the modern point of view, the concept of war may have taken its beginning in the era of the late Eneolithic – early Bronze Age, when stable patriarchal socio-political structures began to form itself on the basis of diversified forms of property. The period of wars was preceded by evolutionary processes of domestic and social conflicts. The latter occurred within the tribal organisation between members of paired families, as well as external and internal conflicts, due to sources, took place for natural resources, women, and children. The creation and regulation of family-tribal structures in which militarised men and women, that defended the

safety of their property and also expropriated neighbouring territories, made the result of permanent conflicting relations. Those relations began to play a significant role. These processes had got its starting point since Botai people had become professional horse soldiers and had radically changed the socio-economic and political line of development, forming a legendary and heroic but always dehumanised image of war.

Representatives of the Atbasar culture were the first to create their own culture. At the end of the Neolithic and at the beginning of the Eneolithic, part of the population of Northern Kazakhstan united in the Botai culture. They co-existed together for a while. The tangible economic development of the Botai culture gave them superiority and they gradually absorbed the Atbasar culture.

### Research results

**Natural-ecological characteristic of Northern Kazakhstan and the particularity of the topography of the sites of Atbasar and Botai cultures.** Atbasar culture, members of which settled the river valleys of the Ural, Tobol, Ishim, Nura, Iman-Burluk, Irtysh, and other rivers, emerged in Northern Kazakhstan on the local Mesolithic basis at the beginning of the Holocene. On the whole, the monuments of this culture are located on high floodplain and first terraces. Such a topographical situation is completely consistent with the climatic conditions of the beginning of the Holocene, characterised by dry continental climates and low groundwater levels and the dominance of wormwood-grass steppe surrounding valleys [2, p. 63]. The largest settlements and encampments of Vinogradov, Iavlenskii, Akkanskii, Kurgalzhinskii and Temanskii microdistricts of Northern Kazakhstan, part of Atbasar territory [3, p. 40–98] are confined to these topographical levels in particular. Living in the river valleys, the Atbasar developed their calendar cycle and structured their economic and social activities, breaking their territory up on a functional basis: the main living space was basic settlements, seasonal workshops, seasonal workshops for extracting raw materials and preparing goods, seasonal hunting camps and points of tracking and slaughter of animals during hunting seasons. This structure was regulated by experts in the surrounding environment, skilled hunters and fishermen.

Since the valleys were settled by several ethnic groups, conflicts always arose for convenient topographical places of settlement and activity. Most likely the Atbasar's military conflicts and confrontations took place on a local level. During this period, economic migration took place in a longitudinal direction to utilise the gifts of the environment at different times of the year. The goal was to possess the most favorable places, where settlement became the object of socio-ethnic strife and even war. Consequently, the ecological niche occupied by crops within the valley was a cause of militarisation. Stocks for winter, livestock, and other material valuables could also be bones of contention among different groups.

Monuments of the late Neolithic-Eneolithic occupy the second terraces, bedrock shores and exit out onto the watershed and are based on the shores of lakes and streams (fig. 1). Numerous Neolithic Atbasar settlements are located on the bedrock terraces of the Ishim River. Taking into account materials of soil analyses [4], it should be noted that during that time there were periods of an increase of the river regime in the steppe of Northern Kazakhstan. Landscape and climate changes to some degree influenced the dynamic of economic and cultural types of the population of the Ural-Kazakhstan steppe over the past 10 000 years.



Fig. 1. Northern Kazakhstan (Botai culture).  
Source: personal archive of D. S. Baigunakov

The main topography of Neolithic monuments bears witness that the ruggedness of floodplains 4000–3000 BC was no less significant than today. In turn, the stable river regime of the rivers was determined by the relative humidity and warmer climate in the region. A low level of flood waters and short duration of spring floods did not destroy the settlement sites located on the slopes and at the bases of the first terraces, but renewed the water of the lakes and river-formed lakes, ensuring reliable fishing [5, p. 8–32]. In the conditions of dry steppe landscapes between rivers and stable river regime of river valleys, the economy of the population of the steppe zone was based on high-productivity fishing with hunting and gathering in an auxiliary role.

According to expert observations, in the late Neolithic-Eneolithic, the river and temperature regimes changed. Prolonged spring flooding of rivers and high water levels disrupted traditional forms of economy. A more moist climate led to the flourishing of the steppe ecosystem, a diversity of plant communities, and the establishment of a hierarchical structure of animal ecology within which ungulates, including horses, took a visible place. Here it is worth noting that the directions of calendar migration were subordinate to natural and ecological conditions, of which the level of solar radiation, the main wind rose, and the topographical distribution of aquatic, terrestrial, geological, faunal and geographical resources. The main resources for the Botai became quality clay in sediment from the late Pleistocene and early Holocene on the right bedrock shores of ancient lakes and rivers, pine forests and forest outliers, and lakeside reeds and rangelands on vertically expressed steppe expanses. Botai settlements were laid out in the habitat of numerous horses, which made use of not only pastures but also forests which acted as windbreaks and shelter from poor weather and blizzards. The most comfortable places for settlement, naturally, also served as objects of discord between Eneolithic ethnic groups.

A particularity of the Botai's calendar cycle was the cultivation of a complex, diversified economy and domestic crafts according to the seasons. Against the backdrop of specialised horse breeding, fishing, gathering, and hunting developed. These forms of engagement adapted to seasonal economic migration and the Botai inhabitation of various ecological niches. Forms of hunting most actively improved. Besides the procurement of wild ungulates and fur game, much attention was allocated to means of control, slaughter, and exploitation of wild horses living in the area within 100 km of Botai settlements. A particularity of such hunting is the fact that these horsemen invented a series of devices (kuryk (lasso for catching horses in the form of a long pole with a loop at the end), hair roping, hammer-bits, bits, halters, etc.) which very effectively solved the issue of meat for winter and daily needs.

The task of hunting carried a passionate character. Numerous herds were the object of discord of ancient horsemen and hunters. At their core, the conditions of horse breeding form the physical strength and valor of a warrior.

**Motifs of militarisation in the economic life of members of Atbasar and Botai culture.** According to experts, the production inventory from the excavated and examined Neolithic monuments (Atbasar culture) consists of more than 10 000 items. These include tips of spears, javelins, arrows, scrapers for preparing skins, knives for cutting meat, wood, bones, knife and dagger sheaths, and sheaths for composite hunting equipment. The percentage of hunting tools from individual archaeological sites is as follows: Vinogradovka-14 – 41.8 %; Vinogradovka-2 – 46.7 %; Telmana-14 – 39.7 %; Zhabai-Pokrovka-1 – 42.2 %; Iavlenka-2 – 48.0 %; Telmana-12 – 41.7 % [3, p. 158].

It should be noted that in the Neolithic, individual and collective corral hunting was practiced. Ethnographic materials provide such information: animals were driven not only into narrow valleys or sharp cliffs where they were then killed but also into artificial pens which were built by skillfully using the rugged terrain, in so far as convenient and appropriate natural sites for corral hunting were few and far between [6, p. 9]. In addition, the choice of region for permanent settlement was determined by the needs of fishing. Therefore, the introduction of artificial elements in the terrain with the goal of corralling animals in an area not far from the community's permanent settlement could be a very real phenomenon. The Atbasar's historical experience of corral hunting in the Neolithic served as a basis for the use of these skills by Botai horsemen, who mastered not only the skill of riding but also honed military discipline while rounding up animals, which prepared them for military actions against potential enemies.

The very idea of artificial corrals built with the help of fencing was akin to the idea of a stop net or stake-net [7, p. 18–28]. An important new feature of hunting in this system of husbandry was that it allowed people to not immediately utilise of all the animals held in the corral, where they could be kept for a longer period of time to be slaughtered as food or ritual requirements required. The idea of holding wild animals in corrals could be achieved only among settled fishermen and hunters. This was the first important step (the stage of animal domestication) which laid the groundwork for an extraordinary event – the domestication of the horse, which took place in the late Neolithic – Eneolithic.

Due to the fact that the economic structure of early horse herders was formed on the use of pasture lands, regular renewal of territory at the expense of new undeveloped lands was required. This was the main motivation for militarisation since the space of the open steppe was an arena for constant contact of ancient

ethnic groups in the process of claiming ecological niches and fulfilling calendar cycles. Naturally, these numerous contacts were not always peaceful in nature. Animal husbandry, migration, and war became characteristic features of the steppe ecumene. Making lightning raids, horsemen used tactics of cavalry combat with the use of ranged weapons. In close quarters they could use spears, javelins, knives, axes, possibly even excavating equipment, bolas for repelling attacks, and also disk-like stones which were designed for slaughtering livestock. Battle tactics depended on the area's geography. Early horsemen could use those same skills in battle which they used every day in animal husbandry, such as corralling livestock [8, p. 48], organisation of ambushes of various types and other maneuvers designed to demoralise and open up groups of enemies.

Early Botai horse breeders were not only innovators in the era of horse-transport communication, introducing advanced technologies in animal husbandry, architecture, jewellery, medicine, numerous domestic crafts, but were also the first political and military warlords, seated on proud, beautiful, and spirited horses, covering the vast expanses of the Old World, bringing the whole world new ideas.

**The domestication of the horse and the emergence of regional conflicts.** From the moment of the domestication of the horse, humanity crossed over after several million years of evolution from walking to horse communication. This moment was the beginning of steppe civilisation, a dynamic accelerator of the world historical process [9, p. 246]. It began with the change of social institutions of early horse breeders, the change of economic structures, and the replacement of matrilineal and matriarchal structures with patriarchal family and community institutions. A horseman and his mount come to the fore of ideology and worldview. The first becomes the head of the family and the second occupies the dominant place in the pantheon of totem deities and symbols in a three-dimensional ideological and mythological space of the cosmos and biosphere. This natural process was a factor of the spread of horse breeding and horses from the multi-pedigree Botai herds [10, p. 361]. The movement of passionaries' horse breeding confederations in different directions of Eurasia leads to economic and social connections and to political and military conflicts. From this moment in particular at the turn of the period 4000–3000 BC begins stage of stormy, passionate, according to L. N. Gumilev, ethno-cultural processes for the peoples of Eurasia [11, p. 387–388]. Horse breeding and war become an everyday occurrence of horsemen. The domestication of the horse enabled the emergence of regional conflicts.

Anthropological data and archaeological artifacts bear witness to the stability of demographic dynamics over the course of 500–800 years during the period 4000–3000 BC. The demographic dynamic was due to

the stability of the Botai economic and cultural type [12, p. 19–20]. Of course, the primary cell of Botai society was the family. According to archaeological sources, it is possible to determine the number of people living in one dwelling; for example, in Botai settlements, the minimal quantity of residents consisted of 2–4 people (in dwellings No. 12, 51), the maximum being 18–20 people (dwellings No. 15, 16, 33, 35, 41) [13, p. 308]. Several families formed familial exogamic communities, closely connected by common economic and cultural ties. It is possible that the Botai had a tribal structure, which was, in essence, a form of military organisation. During periods of military clashes, the heads of clans, exogamic communities, families, or tribes momentarily became military leaders. Their compatriots (in particular men) made up the backbone of the army. Cohorts of horse warriors or the number of early horsemen depended on the external threat. The acquisition of pastureland, livestock, sources of copper and other resources was resolved at the level of familial exogamic communities or family and tribal structures; obviously, they then sent forth small detachments. For more distant campaigns, the number of warrior horsemen grew several times over [14]. Most likely, the type of military organisation was similar to a people's militia; primarily young warriors were sent to regional battles. The preservation of certain economic and cultural types made it possible not only to unite various family and tribal groups but also forced the ancient Botai tribe. A council of elders of family and tribal communities or tribal structures made the major decisions upon the advent of regional conflicts, determining the role of every member of a military detachment.

In the era of the Eneolithic, in the Ural-Irtysh interfluvium, there were three cultures – the Surtand, Botai, and Ust-Narym – connected by the border contacts of different cultures and regions. At Botai sites there are Surtand ceramics with talc as imports; an analogous situation is observed in comparison when comparing Ishim and Irtysh monuments, beads with close analogs in Zaman and Babin (Bukhara, Uzbekistan) monuments, etc. Occupying an intermediate position between Surtand and Ust-Narym cultures, and also Kelteminar culture in its later stages, the Botai closely interacted with all their neighbours [13, p. 252–254]. A part of imported items could have been brought as part of the spoils of regional conflicts. In excavations of Botai settlements and other complexes, heavily exploited individual human bones were often found. It's possible that such condition of individual human bones speaks to instances of cannibalism among the Botai. These bones possibly even belonged to external and sworn enemies, which were brought as slaves and prisoners of war from far away for ritual purposes.

In the process of the domestication of horses and the constitution of Botai culture, militarisation begins to take on the classical forms of military relations in

a significant area of Central Asia. The formation of a new image of the horseman-warrior that took place in the Botai culture determined the character and vectors of military conflict for centuries to come. The Botai became the first political and military warlords, crossing enormous expanses of the Old World on the horse. Steppe confederations of early horse breeders steadily drew numerous ethnic groups into the new civilisational process.

**Types of armaments of the Botai horseman.** The flint inventory of the Botai is genetically connected with the industry of the last stages of Atbasar neolithic culture, undergoing the process of change from plate industry to flaking. The continuation of the traditions of making cutting tools from the Neolithic to the Bronze age also speaks to the uniformity of stone technology in

the framework of Atbasar and Botai culture [15, p. 96]. In the Botai Eneolithic collection one can see specialisation and intensive use of tools. For example, a widely used series of arrowheads, spears, and javelins used in ranged combat are generally found in fragments. It should be noted that among the arrowheads predominate instances with a leaf-shaped and willow-shaped form with a rounded or acuminate base. Arrowheads with a protruding shaft and sub-triangular form are one of a kind. They are all made with a pressure flaking, which in some cases forms serrated edges (fig. 2, 3). Careful production of arrows says a great deal since arrows symbolise authoritative and ambassadorial powers; weapons and the threat of their use were used in rituals of protective magic [16, p. 110].

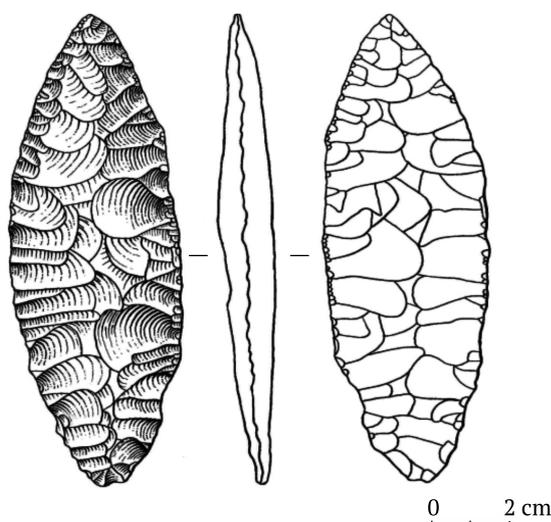


Fig. 2. The tip of the spear (Botai culture).  
Source: personal archive of D. S. Baigunakov

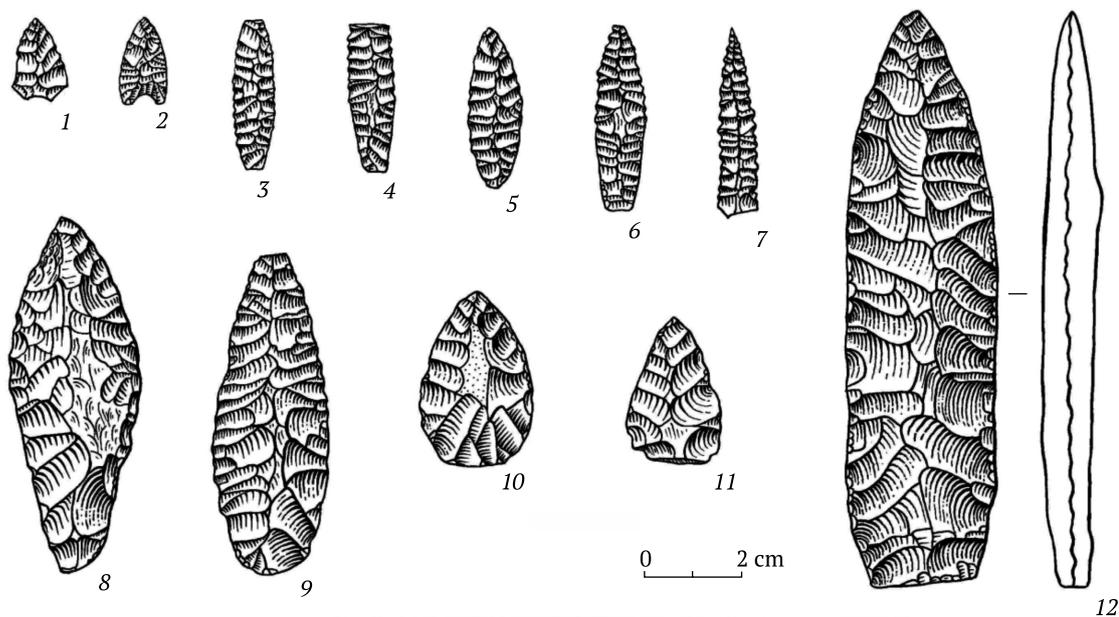


Fig. 3. Artifacts found in the settlement Botai: 1–11 – arrowheads; 12 – dart tip.  
Source: personal archive of D. S. Baigunakov

In the collections of Botai culture, javelin heads generally have a leaf-like shape; only rarely are they seen with a truncated base. The surface of the product was made with large flakes, which form the corrugated edge of the weapon. A series of spearheads includes tools, the working edge of which has acuminate, elongated form. Only the edges are chipped away. Sometimes this chipping is subtending. In their functional purpose, tools of this series could be used as drills, piercing tools, and boring tools. Some exhibits are fairly large in size – up to 10–13 cm. Spears could serve as important instruments for signaling in combat [17, p. 20].

Plates from the Botai period had anomalous facing and were used as knives, scrapers, and other objects for everyday use. On the whole, these are medial cross-sections with an aspect ratio from 1–1 to 1–1.5 cm. Stone knives were made with the same technique as the above-mentioned tools and were used in close combat.

One of the leading categories of finds at Botai settlements is macroforms (approximately 8 thousand units), which differed in seriality with the types presented. There were made of different materials: shale, sandstone, quartzite, limestone, etc. These products are divided into the following types: disk-like products (perforated stones) [18, p. 173–174]. They in their turn are divided into sub-types: disk-like with piercings, hemispherical disks, or spherical disks with cylindrical and tapered bores; the disks are flattened in profile (fig. 4). These variants of products are encountered most frequently. There are different shapes – round, oval, and sub-square ones. They also vary in size and proportions. They largely have a diameter of 5 to 15 cm. Far fewer products have a diameter less than 5 cm. The drilling of disks was done from two sides. The openings' diameter varies from 0.5 to 2.5 cm. A significant series is represented in the collection of objects with a round shape without signs of drilling. Their size are 1.6 × 2.6 cm, 4.0 × 6.0 cm. Thus, the comparison of archaeological and ethnographic sources from the territory of their distribution allowed researchers to approximately outline the possible functions of this object. The most widespread are as follows: 1) club as an element of a ceremonial character; 2) club as an element of

armament; 3) weighting (weight) for a loom; 4) spindle; 5) fly wheel for drilling; 6) playing disks; 7) weighting (digging sticks) 8) counterweights for traps; 9) nozzle bellows; 10) mallet for tenderising meat; 11) sinkers for fishing nets; 12) object for grading cylindrical shapes; 13) thrust bearing; 14) weighting for wooden pestles [12, p. 290]. Ancient residents of the Botai settlement used them extensively. Such instruments could be used for the slaughter of livestock in everyday life. It is possible they were even used against enemies in order to crack an opponent's skull or overwhelm him in close combat.

In the Botai collection, we often encounter cutting tools which are potential armaments of mounted warriors [19, p. 50]. These are axes, wedges, chisels, and flat axes. Among them are ritual axes, possibly also for the execution of prisoners (fig. 5). Raw materials for the creation of axes were primarily greenish or dark slate, from which the following shapes are distinguished: rectangular, oval, and triangular. The axes' length was 7–14 cm, width – 4–6 cm, thickness – 1.2–2 cm. Usually, the angle for sharpening axes was up to 60°. The axes' blades were curved, razor-sharp, and beveled. Some were improved by fine edge retouching. On all surfaces the axes have chips as the result of the knapping process. There are also trapezoidal axes. Such tools are ground with a narrow, straight, and symmetrical blade and have secondary working on all surfaces. At the head there is a shape of fixing ring, made with small gutter. Some tools are partially cut along the side face, the blades are carefully polished. The majority of axes were found in living quarters. This shows that axes were widely used in daily life, including not only during peace, but also war time. Some specialists propose that «in the IV and the first half of the III millennium BC, judging by the variety of visual material, the function of the axes as a real military weapon, frightening and smiting foes of these lands and protecting thanks to the patronage of the supreme gods of a given clan, tribe, nomenclature, settlement, or ancient power formed as the result of unification, is emphasised» [20, p. 219–220]. Studies of culture over 40 years also show the region of distribution of various tools [21, p. 41–42].



Fig. 4. Discoïds found in the settlements Botai, Krasnyi Yar, Roshchinskoe.  
Source: personal archive of V. F. Zaibert



Fig. 5. Ritual ax found in the settlement Botai.  
Source: personal archive of V. F. Zaibert

Products particular to the collection are distinguished as wedged-bits from 4 to 10 cm in size. Length-wise their cross-section is sub-rectangular in form, often ovular, with a thickness – 0.8–2.0 cm. As a rule, the products are cut and often have a secondary touch-up of the blade.

Boleadores (stone boleadores) also were part of a Botai horseman's arsenal. In general this was a spherical object without holes with a diameter from 2 to 5 cm. Among them there are some natural sandstone nodules and also artificial ones made by people. As a thrown hunting weapon, boleadores certainly were mostly used in ranged combat, in order to repel an opponent's attack or chase down a fleeing enemy.

Notches, scratched, engraved or sawed lines, concentric circles, geometric shapes, etc. have been recorded on the surface of a number of products made

from stone, sandstone, and clay. They can be seen on products made from bone, with tubular bones, ribs, and shoulder blades serving as canvases. The Botai created piercings with from splint bones. Bone tips were manufactured from longitudinal segments of tubular bones; they were usually 6–8 cm in length. These products generally have a tortuous shape are lenticular at the cross-section; the points of the tips are acuminate, the base is flattened or acuminate with bilateral cuts, and the surface is polished. Most of the bits and harpoons were manufactured from segments of horse metapodia. One- and multiple-tip harpoons, 7–12 cm in length are encountered (fig. 6). In the collections from encampments, numerous composite harpoons and spears have been identified, which also could have been used not only as fishing instruments, but also as instruments for hunting and weapons of defense and attack.



Fig. 6. Harpoons found in the settlements Botai, Krasnyi Yar, Roshchinskoe.  
Source: personal archive of V. F. Zaibert

A special category of macroform is the pickaxe. They have an elongated form (at the cross-section sub-square or oval) and their length reaches 20 cm. We assume that this mining instrument was used in armed conflicts in the stone, copper, and bronze ages.

There is a variety of polished tiles from sandstone and slate in the collection. The largest specimens reach sizes of up to 30 cm and they have the final refinements of polished handiwork. It seems they were often used in preparing weapons for combat with potential opponents.

The overwhelming majority of weapons in the Botai collection are broken in fragments. They show not only

their wide use for domestic purposes, but also their possible use in military clashes and conflicts.

In our opinion, it can be said that the weapons of armed Botai horsemen are presented as multifunctional types of tools and weapons. He was dressed in leather armor and had weapons for ranged and close combat. Every instrument used in domestic tasks could be utilised as a weapon; therefore, the tradition of weapon veneration, military strength, and valor were widely reflected in the daily life of Botai culture. It's possible some elements of symbols of power and the tradition of weapon veneration spread widely in the Eneolithic era, when regional conflicts appeared.

## Conclusion

Thus, our analysis of materials of Atbasar and Botai cultures shows that weapons made of stone, flint, and bone were used not only in domestic and productive life, but also in spiritual and socio-political life. The latter has its tendency towards militarisation of a peaceful ethnic group in the economic, social, and thus the political sphere has been brought to life. Regulation of relationships in the latter areas becomes the lot of elders, clerics, priests, shamans, and professional horsemen warrior-leaders.

At the base of cultural genesis lie processes of global adaptation of man and society in the environment.

The environment itself presents man certain conditions for living in favorable and extreme conditions. Man is forced to submit to the global challenges of nature, deal with cosmic and biosphere cycles while maneuvering and developing sacred customs and rituals. An intermediary between society and nature were outstanding fellow tribesmen possessing psychological, spiritual, and ideological qualities. They played a key role in the preservation or destruction of ethnic groups and surrounding reality. In the contradictions of nature and society were already laid aggressive impulses in solving social problems.

Economic indicators of ancient cultures depended on the degree of closure of annual calendar cycles. The fact is that during life, two extreme factors act on man and society. The first is natural, which is characterised in Central Asia by a sharp continental climate with unstable weather manifestations. The second is the unstable demographic factor. This made it difficult to regulate the acquisition and utilisation of the base product and harmonise the balance between the economic condition of the ethnic groups and the surrounding environment. This pattern stimulated society to find sustainable economic regulators. One of the ways was the seizure of other's territories and property. Another way was the process of domestication of horses and obtaining of significant food income, allowing the possibility of an ethnic group's breaking away from a traditional way of life inhibiting the processes of innovation and migration. The union of these two paths with the example of the Botai culture gave the effect of passionary growth in the conditions of a new era of horse-transport communication.

The domestication of horses and the emergence of regional conflicts are two sides of one process of changing the sense of time in the development of new horizons of life and adaptation in concrete conditions. At the same time, in a system of sustainment of ethnic groups and in relation to other psychological, ethnic, and religious staples, traditional canons of attitudes towards the surrounding environment were broken. Cultural opacity of ethnic groups gave rise to discomfort, contradictions, conflict, and ultimately war as

a means of harmonisation of psychological aspects of ethnic groups in new geographic, demographic, and socio-economic conditions.

The fear of horsemen especially manifested among farmers and gathers who were struck by members of the Botai confederacy. The victorious procession of horse warriors across Eurasia was determined to a large degree by the frightening combination of rider and horse acting on farmers who previously hadn't seen horsemen. It is also necessary to consider the selection of ranged and close-combat weapons. These are bows and arrows, spears and javelins, knives and daggers, throwing stone-bolas, kuryk (a long pole with a hair rope loop at the end), stone hammers and axes with wooden handles. The horsemen themselves were dressed in leather pants, jackets, and shirts, with leather boots on their feet and malakhai hats on their heads.

Thanks to studies of the two permanently linked Atbasar and Botai cultures, the evolution of the emergence and phases of growth and transformation of militarisation of hunter-, fisher-, and horse herding societies over the course of the last 10 thousand years has been deduced and substantiated. The first two stages may be characterised with elements of militarisation that raised and consolidated out of contradictions of the internal nature of the process of cultural and ethnic genesis within those societies, but the last stage may have been marked with the formation of family clans and mastery of horse-transport communication, therefore their internal contradictions shifted to regional social conflicts or wars.

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