ON THE QUESTION OF THE EVOLUTION OF THE BITS OF THE SALTOV-MAYAK CULTURE

Dziuba Alexey Yurievich

Student, Belgorod State University, Russia, Belgorod

Abstract. In article process of reconstruction of the bit of Saltov-Mayak archaeological culture simulated on the basis of materials from excavation in the basin of Volga and Don is described. Obtained during the experimental analysis of bits data, are used for detection of features of management of a horse at the ancient population of the region.

Keywords*:* Saltov-Mayak archaeological culture, iron bit, typology.

In Russian historiography, the problem of evolutionary analysis of Sallow-Mayak culture rises for the first time. Its choice is due to the following factors: firstly, it is associated with the approach to the study of horse ammunition, which is widespread in modern archeology, as a historical source, usually reduced to describing the most characteristic features of individual finds. Its characteristic feature, inherited from Soviet archaeologists, is the lack of information on the purpose of individual bits' elements, the essence of the differences between their different designs and, as a result, the insufficient validity of the proposed interpretations (Gening, Khalikov, 1964; Puzikova, 1997; Ilyukov, Kosyanenko, 2007; Kovalevskaya, 2012). Secondly, the absence of even general ideas, not to mention reliable information, regarding horse management in the early Middle Ages.

The purpose of the work is an attempt to trace the evolution of the QMS clothing complex (hereinafter referred to as the Saltov-Mayak culture) using the example of iron rods. Further, on the basis of the fundamental stages of the evolutionary change of the rods, their typology by functional characteristics will be compiled. The uniqueness of the present typology lies in the fact that for the first time the isolation of typological features and the identification of the nature of functional differences between types will be carried out on the basis of the study of the horse management process in the early Middle Ages, which, in turn, will be made specifically using experimental copies of the Saltov-Mayak culture.

Among the main tasks: 1) to make steel models of rods; 2) analyze the handling and behavior of the horse, in relation to different types of rods and on different allures; 3) perform comparative analysis of modern and experimental samples; 4) summarize and systematize the obtained data in the form of a typology.

To make copies of the bits, a detailed drawing of them was previously compiled, accurately reproducing the three most widely represented in the materials of the QMS, of the udil type (2 of them belong to the Saltov-Mayak culture), which existed on the gigantic territory of the Eurasian steppes in the early and early developed Middle Ages. In the process of designing the bits, materials of monuments of the Saltov-Mayak culture and, the so-called "late nomads" (3rd type of bits) were used (Gening, Khalikov, 1964; Pletneva, 1989; 2003). Soon, the drawings were transferred to the forging workshop of Belgorod - "Two Blacksmiths," where, by individual order, from steel (St 3G sp GOST 380-2005), by hot forging and subsequent welding of the ends of the links, three copies of bits were produced, differing in their design parameters. When the bits was cleaned and polished, they were ready for use.

The next stage of the study took place on the territory of the equestrian school of the National Research University "BelSU." After saddling, the horse chosen for the experiment was replaced by the modern "iron" with "ancient" - as it was called by the staff of the equestrian school. With each type of bits, several races were made around the perimeter of the racetrack. Another replacement of the bits in the bridle followed, this time to modern ones, and several more laps were made on the training ground. The next day, the beats were analyzed and tested by the instructor in sports of the 2nd category of KSSh NIA "BelSU" I.V. Razgoniaeva. The operation process of the bits was recorded on a video camera (JVC Everio GZ-MG 150ER), thus a special video report was prepared. The design differences of experimental beats with each other on the one hand, and more significant discrepancies with modern types on the other, determined the nature of changes in horse management. Specimen No. 1 is represented by ring-shaped rods consisting of two links with round psalms for attaching loam belts and reins at the ends. The marked form of bits appears convergently back in the iron era and acquires characteristic local features in different cultures of the Old World. It is not surprising that in comparison with adjacent chronological and geographical groups of materials bits, combined in the 1st type, are characterized by a certain versatility in the design details. Therefore, it is fair to consider type 1 as the earliest representatives of the above-mentioned "triad." Their time as part of the antiquities of the Saltov-Mayak culture falls on the VIII-IX centuries. (Pletneva, 1967). Even with a cursory examination, their morphological resemblance to modern variants of sports "iron" and trench rods widespread in everyday life is striking. Differences affect the thickness and mass parameters of individual parts. When using this type, no qualitative changes in horse management were diagnosed in the riding process. It was possible to note a relatively tight fixation of the bits in the horse's mouth, due to their size and shape. The physiological changes in the horse's body, characterized by the activation of exocrine glands, in particular increased salivation, are also noteworthy. The operation of all 3 types of bits is characterized by additional irritation of the sensitive nerve endings of the toothless part of the oral cavity of the horse, due to the difference in their size in relation to the modern "iron" and the equality of the force acting per unit surface area of the mouth when the rein is stretched. However, as already mentioned, a significant similarity of experimental bits of type 1 with modern ones allows them to be considered the most loyal in terms of the level of impact on the autonomic nervous system of a horse. Ringed rods with nail-like psalms threaded into round holes, uncoupled at the ends of gnaws, are generalized within the framework of type 2. At the middle of the length of each psalia, they have welded trapezoidal staples for fastening the cap straps of the headband. This form is most fully represented in the monuments of the Saltov-Mayak culture and dates back to the 9th century. (Pletneva, 1967). Contrary to the idea entrenched in archaeological literature (Tishkin, 2004), according to which rod-shaped psalia contributed to better fixation of the rods in the horse's mouth, they not only turned out to be not adapted to perform such a function (the belt was quite freely "walking" on the surface of the brace, which in turn drove the gnawing), but moreover, had a different purpose. The presence of straight cheek-pieces can be legitimately explained by the desire to improve control over the control of the horse during turns, since the section of the bit opposite to the direction of movement, with the cheek-piece fixed perpendicularly, exerts pressure directly proportional to the force of the rein tension on the outside of the horse's muzzle, thereby controlling speed more strictly maneuver and the vector of subsequent movement. From this it follows that in the most expressive period of the existence of the Saltov-Mayak culture, there were certain rearrangements in the design of the bit, which led to the emergence of a specific form that occupies an intermediate position, both in terms of the severity of control and the strength of the effect on the horse's body. It is likely that such changes were caused by military-tactical considerations. The activation of the external threat from the Hungarians (at the beginning of the century) and the Pechenegs (at the end), internal upheavals ("Fronde"), created an urgent need for a mobile and highly maneuverable cavalry to suppress uprisings from within and repulse the enemy from outside. Model No. 3 is represented by ringed bits without bending with round cheek-pieces (rings) at the ends of the bits. In general, the 3rd type of experimental bit is characteristic of the nomadic cultures of the post-Saltov time, starting from the 2nd 1/2 X – 1st 1/2 XI centuries. (Pletneva, 2003). A striking feature of the whole group is the absence of an inflection of the bit, which causes the action of the bit on two jaws at the same time, which does not allow the horse to take advantage of the weakening of the pressure of the links, by means of a rein, on one side or the other, as is traced in two other examples. S. A. Pletneva explained its appearance among the Pecheneg tribes of the 9th century. a long (about 100 years) period of residence in the forest-steppe Trans-Volga region (the interfluve of the Volga and the Urals) and, as a result, the need to move over rugged terrain, for which earlier two-piece bits were unsuitable (Pletneva, 1958). Meanwhile, the indiscriminate distribution of bits without a bend far to the west (Porosye) and

southwest into more steppe landscapes of the lower Don (Belovezhsky burial ground) and their absence, for example, in the materials of Volga Bulgaria, lying in the zone of broad-leaved and mixed taiga forests, is not entirely clear. As a result, of all three, the third type of bit turned out to be the most severe in terms of the amount of opportunities for physiological stimulation of the horse that can be used when riding. This was directly reflected in the quality of the performance of the rider's commands by the horse. The speed of reaction to the tension of the reins during stops, turns and other movements has increased, the time of transition to higher and lower gaits has decreased. As in previous cases, was observed increased salivation.

In the issue, we can distinguish three stages in the evolutionary development of bits and horse harness in general among the population of Eastern Europe in the early Middle Ages, chronologically coinciding with the boundaries indicated above for each of the 3 types of bits. Nevertheless, a detailed consideration of the reasons that served as a kind of catalyst for each of those large-scale processes that we managed to name is an independent scientific study and remains outside the scope of this work.

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