

SUMMARY

INTRODUCTION

The history of the Early Middle Ages of Eastern Europe is hardly thinkable without Khazar khaganate. The authority of Khazaria unified peoples of different ethnic group and derived enrichment experience of craftspeople from Byzantine centres of the Black Sea Littoral; thereby, they were able to create an economically powerful state with potent military capabilities. As a result, the Khazar khaganate became one of the most high-powered states in the Black Sea region in military and political ways at the end of I millennium among Byzantium, Kyiv Rus, Persia, and the Arabic Caliphate. Modern archaeological reflection of material and intellectual culture of the khaganate is Saltov archaeological culture (the middle of VIII — the middle of X cc. AD).

One of the most considerable contribution to its formation and development was made by Alan tribes, that were partially resettled from the North Caucasus to forest-steppe zone of the Seversky Donets and the Oskol by the khaganate authorities and lingered on up to the middle of X c. AD. The basis of their householding, as well as khaganate economics, was agriculture and a farming sector.

All of this determines the importance to study a latter occupation of Saltov culture bearers exactly in a forest-steppe zone as one of the bases of khaganate economic power and big military and political potential at its northern-western boundaries. This particular item was analysed in the authors' works among which the monographs of 2010 and 2013 are (Koloda, Gorbanenko, 2010; Gorbanenko, Koloda, 2013). However, since the latter was published (2013), there have been obtained new archaeological, palaeoethnobotanic and archaeozoological material. They enrich our knowledge about agriculture and farm sector of forest-steppe Khazaria and these need introducing into scientific discourse.

The basis of introduced research serves the data which have been received for 25 years while archaeological excavating such settlements as Verhnij Saltov, Koropovy Khutora, Mokhnach, Pyatnitske I, and Chuhuiv.

The aim of the research is, firstly, introducing new data on farming sector of the population in a forest-steppe zone of the Khazar kaganate and, secondly, advanced analysis involving large quantity of data from natural sciences.

Chapter 1

HISTORIOGRAPHY, THE HISTORY OF ARCHAEOLOGICAL SITES STUDIES

Despite of the fact, that the Khazar question has been in scientific discourse for almost 250 years, an issue of khaganate economics had hardly been discussed up to the last third of the XX century.

In 1960^s Kharkiv researcher V.K. Mikheiev started to purposefully explore the economy of northern-western territories of Khazaria using all the available materials about the south of Eastern

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Europe. His two theses (1968, 1986) and a monograph (1985) are devoted to socio-economic development of the Don population within the Khazar khaganate. There are also some generalized monographs which enlighten agriculture development of Crimea (Baranov, 1990) and the North Caucasus (Magomedov, 1983). In the last quarter of the century there have been excavated settlements in the territory of Kharkiv region (an upper part of the Seversky Donets basin). The analysed materials gave an opportunity to have a new look at agriculture development of a forest-steppe zone of Khazaria. Summarized conclusion about the sphere of activities of early-medieval population was made by the authors in 2010. They also made comparative analysis household basis of forest-steppe population of Khazaria and neighbor Slavonic tribes (involving new artifacts) in 2013. Lately, there has been published a volume work on the analysis of archaeo-zoologic artifacts from Saltov sites of the region (Koloda, Kroitor, 2015; 2016; 2017).

Analyzed sites have been studied not equally. At Mokhnach hillfort there have been examined more than 9500 m² (95 % — 1999 onwards). In Koropovy Khutory have been excavated 20 % of the hillfort area and ≈1 % — at the settlement.

More than 2000 m² of the settlement and about 1000 m² of the hillfort have been excavated and studied at early middle-ages Verh-nij Satov. Mokhnach hillfort is surrounded by numeral settlements, 18 of which belong to Saltov culture. One of the most researched one is Mokhnach II settlement — ≈4000 m². Large Pyatnitske I settlement has been examined with the help of 9 pits, where total area of excavated zone amounts to ≈2000².

Chapter 2

INTERPRETATIVE METHODS FOR AGRICULTURE MATERIALS

The aim of the chapter is selection and exposition of the data which have been accumulated in scientific literature and which enable to interpret agriculture materials fully.

General analysis of agriculture. In general scheme of agriculture the least section of

analysis is a settled site. In this regard all possible pieces of information are important: data on palaeoecology, movable and immovable archaeological context, definitions of natural science. Obligatory constituents of agriculture are natural and anthropogenous ones and their correlation. As palaeoecological studies show us enough data for their reconstruction, the most important thing is analyzing soil and terrain around the site. Next important type of analysis is different instruments for agricultural activities. The correlation appears while growing crop plants and cattle-breeding.

The research of potential resource zones of settlements of global level is accessible to analyze using available studies; and local levels are specifying. For *studying potential resource zones of settlements* the radius of 5 km is accepted as an «operating tool». The reasons for this fact are well-known in scholarly literature. This measure is used for relief and soils that are limited to four principal types (according to the manner of fertility regeneration and according to usage): 1) soils formed under woodlands; 2) black soils; 3) fertile soils influenced by close water; 4) useless for agriculture soils.

Soil cultivation tools. The tools for primary soil cultivation and the result of potential zone analysis make an opportunity for concrete interpretations. The tools for secondary soil cultivation are less effective for interpretation due to studied components and their correlations.

Palaeoethnobotanic materials give an opportunity not only depict the palaeobotanic spectrum of different sites, but also to get information for interpreting due to the analyses of the components, because each cultivated or weed plant is characterized by specified advantageous conditions. The result of is caryopsis recount taking into account mass ratio: millet — 1; chaffy barley — 5.5; emmer wheat — 6.2; naked grain wheat — 5.7; rye — 4.8; oat — 3.4.

The tools for harvesting and processing (their quantity, quality and variety) are not informative enough for interpretation. However they allow to identify the difference in husbandry traditions.

Examination of osteological materials allows us to judge stock-breeding (panels of herds,

age distribution of a herd etc.). Meat-type reconstruction gives us an opportunity to qualify different animals in herds. Their correlation in herds and palaeoethnobotanic spectrum helps to define subordination or equal share of agriculture and cattle-breeding.

Therefore, present scheme contains all possible data in spite of their fragmentary. For further detalization and improvement of interpretative capability of the materials it is necessary for archaeologists to work closely with scholars on natural sciences.

Chapter 3

NATURAL ENVIRONMENT AND SETTLED ZONES

As agriculture depended on environmental conditions pretty much, it is important to study nature to understand the process. Fig. 3.1. demonstrates natural and climatic chronological correction of historical eras that is essential for accurate comparison of different school spheres. The considered historical period conforms with the second phase of Holocenic subatlantic period (SA-2; 1600—800 years ago). It consists of two substages: SA-1A (1600—1200 years ago) and SA-2A (1200—800 years ago). The era of interest corresponds to SA-2A substages. It coincides with Minor climatic optimum.

The natural zone of the territory is forest-steppe area in the centre of East Europe. The sites located in different provinces of the named zone.

Geographically this territory matches the central part of Russian platform. Against the flatland the territory characterized by unevenness with valley and clough system. Three types of relief prevail: watershed table lands, flat inclined and ascents of rivers and clough, valley bottoms at rivers. The relief of the territory influences area microclimate to wide extent.

The climate of the Holocene changed more than once. It was more humid at the beginning of that time; then rainfall was down (here and elsewhere: in comparison with nowadays) by 50—70 mm. In that case average annual temperature was up not more than 0.5 °C.

The coefficient of channel density for this territory (0.13 km/km²) is deemed to be enough for

longtime agriculture usage. It is possible that the coefficient was a bit higher before. And it was 0.17—0.18 km/km². Also bogginess of the territory was in a low level.

The vegetation of Central-Russian forest-steppe geobotanic province (the examined region belongs to it) was presented with forest and steppe districts. In the past the vegetation contained about 40 % from plowed meadow steppes. Broad-leaved patterns prevailed in sylvia. They were common at that time.

The soils of the contact zone have been divided into four types (fig. 3.4.). The most widespread one is black soils of different nature. About a fourth part contains various soils that have been formed under woodlands. The areas that are useless for agriculture are absent. The nearest position to ancient settled sites is typical for minor soil areas; their fertility depended on flood.

There are main settled Saltov sites: Verhnij Saltov, Pyatnytko I, Mokhnach hillfort, Mokhnach II, Koropovy Khutory. Having analyzed the adjacent territory it is necessary to notice that floodplain soil is found out everywhere and there are other types of relief and soils. On all occasions there has been discovered sizable territory for ploughing. On the whole as the sites are located in similar environmental conditions, they demonstrate much similarity of the territory that is adjacent to the settlement. The sites combine field areas and areas for cattle-grazing.

The general analysis of environmental factors shows excellent conditions for high farming.

Chapter 4

AGRONOMY

Studying the settlement-adjacent territories allows to confirm that choosing the places for settlements depended on the fact if there were areas for agriculture and cattle-breeding. In all the sites there have been identified preserved tools and their details in good quality. They provide insight into all agricolous processes. Among these are instruments for soil cultivation: several types of tusks and gouters — ploughable tools (for primary process), hoes and maybe iron

tips for spades for secondary process. Harvesting instruments are represented with hooks and scythes. There are three types of hooks, one of which — telescoping one — is known only in Saltov culture. A beaked hood that was found is in a unique copy. There are two types of scythes. The specific feature of Saltov farming is a considerable amount of rotating grinding plates; some of them were capable to control size of fractions.

Millet prevails over other cultivated plants (as judged by the marks on the potters). Then there is chaffy barley, naked grain wheat, rye, chaffy wheat and oat in decreasing order. There are few peas. However according to the size of effective corn mass the superiority belongs to chaffy barley. Then there are ordered naked grain wheat, rye, chaffy wheat, millet and oat in decrease.

For crop keeping corn lofts as special places were used. Corn might be kept either in soil pit or in big vessels, or also in leather or cloth sacks, or in withy or splint basket. The major part of corn was kept in ground pits of special purpose (there are four types singled out) or vaults which might be single constructions or form a set of household outbuildings. Sometimes small corn pits were inside dwellings. Each settlements had its own approach to keep. It depended on a soil type and on the role of agronomy in lives of local people.

On the whole, agronomy of forest-steppe population of Khazaria appears to be highly-developed for that time; also we consider the agronomy to be well-organized and quite equipped with numerous varied trade tools. It is documented by a great many specialized grain pits, that allowed to keep up to 6 tons of grains.

Chapter 5

CATTLE-BREEDING

Forest-steppe people of the khaganate hardly ever used hunting to supply their inhabitants with animal protein. The exception is provided by some artifacts from Right-Bank Tsymlyansk hillfort (it was researched in 1987—1988). There were not any bones of wild animals at some sites. Cattle-breeding was the second

(equally important) bases for house holding of the forest-steppe tribes of Khazaria.

Speaking about cattle-breeding of the contact zone for Saltov sites, it should be noticed that the leader was beef-cattle which remains dominated according to cattle number and according to meat quantity. Depending on the site the second and the third place belong to swine and horses. Heap of times small cattle didn't play a great role in meat production. It must be noted that there were such exotic animals as a camel and a donkey. Cattle-grazing in summer-spring periods took place in the contact zones of the sites. In cold seasons warm stables were used.

Breeding tools contain caparison, tools for cattle grazing (tethers, bells for the neck), spring sheep clippers, and cleavers.

On the whole, speaking about settled and semi-settled population of forest-steppe Khazaria it should be noted that cattle-breeding development was rated high. Cattle-breeding, as well as agriculture, gave additional animal feedstuff.

Chapter 6

THE KHAZARS AND THEIR NEIGHBOURS. COMPARATIVE ANALYSIS (instead of conclusions)

The analysis of farming materials pertain to the inhabitants of forest-steppe Khazaria (that was a contact zone with the Slavs). It has enabled to indicate a range of tendencies on the basis of which corresponding conclusions have been made.

The inhabitants of the khaganate and neighbour Slavonic tribes had many common factors in a formative stage and in farming development. The reason for this was similar environmental conditions in the forest-steppe of East Europe. However, their types of farming were set up by different ethno cultural bases. It was embodied in some differenced of particular branches of farming. Nevertheless, constant and mainly peaceful neighbourhood of two big ethnic groups in the contact areas resulted in cross-technique interaction.

Among synchronous cultures of the southern part of East Europe Saltov artefacts are pre-

sented with a great number of different ploughing tools and their fragments. The habitancy of Khazar forest-steppe zone had a great number of the second-tillage tools — hoes and spades. There were not any iron tips of spades. Hoes with vertical free cups appeared in Saltov culture because of the Khazars. It is not improbable that hoes with horizontal cups appeared in Slavonic infiltration zone because of influence of Saltov culture. It is not improbable, that the hoes with horizontal cups appeared in the life of the Slavs of infiltration zone under the influence of Saltov culture too. The population of Saltov culture had a large variety of harvesting tools. They used three types of reaping hooks and two forms of scythes, while the Slavs had only one type of hooks and scythes. Grain bruisers and rotary mill-stones were widespread among the Slavs and the Saltovs, but grating bruisers were used more often among the Slavs. It should be mentioned that massive rotary mill-stones appeared in Slavonic boundary zones under the influence of the Khazars.

The majority of agriculture tools were famous for both groups of the contact zone. Only some of them were well-known for one of this group. For example, an ard, the working part of which was set at an angle with a guide line and fixed with a stenolobate tusk, was known only for Saltov culture. More multifarious sets of tools for secondary soil cultivation (hoes and spade) may suggest advanced vegeculture.

Palaeobotanic spectrums of archaeological cultures for the last quarter of the Ist millennium AD are similar in many items. The small amount of millet indicates the high-level technique of agriculture and the fact that cleared land didn't matter at all. The percent of oats is also not sizable. Advanced soil cultivation is proved with the fact that rye and naked grain wheat made either a third or a half of the total amount of crops. The high percent of barley in all the crops among in Saltov culture was due to the fact that the Khazars' farming was connected with the needs of cattle-breeding (horse-breeding).

There are many common ways of crop keeping. However it should be noticed the leadership of Saltov tribes in quantity and size of specialized graineries and distinct large vessels — pithoi (large pots). It correlates with higher level of Khazar agriculture.

Substantial similarity is observed in farming system. Layland predominated (two- or three-field crop rotation). For Saltov culture it was possible to use tripping-over method.

The level of cattle-breeding in the contact zone was higher among the Saltovs. The percentage of wild animals' bones is up to 10 % here, while the Slavs' index is 30—60 %. The markers, related to species, is rather different. The horse played a greater role in Saltov culture; it is supported with either bone remains or more complex elements of horse harness. The percentage of small cattle at Khazar sites was higher at average than at Saltov ones. It is possible to compare cattle and swine bones in Saltov culture and among forest-steppe population of Khazar khaganate.

In general, more stable herd is observed in Volyntsevo-Romny and Raikovetska culture with some differences. The herds of Borshevo and Saltov cultures were not so stable. The factor of instability is the amount of swine for Borshevo people and the amount of swine and small cattle — for Saltov culture. It corresponds with different natural and climatic conditions in Khazar khaganate. The cattle-breeding of Saltov culture in forest-steppe area (in the contact zone directly) had similar features with the northerners' tribes (Volyntsevo and Romny cultures).

The materials indicate mainly independent development of farming among the Slavs and Khazar people of different ethnic groups in the contact zone. However, there are some data that show a certain influence of Saltov people on the Slavs in farming techniques and methods (tools of soil cultivation and crop-processing). The cattle-breeding of each group made progress independently.

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