

A doctoral dissertation summary

Economy and settlement of late Neolithic and early Bronze Age communities in south-eastern Poland and western Ukraine.

The main aim of this dissertation is to characterize the economy of the Corded Ware Culture (hereinafter CWC) and Mierzanowice Culture (hereinafter MC) communities in south-eastern Poland and western Ukraine. According to the author, the concept of the prehistoric economy is mainly related to the basics of maintaining these communities. The matters of manufacturing, obtaining raw materials or trade/exchange have been dealt with in a general way. The starting area for these considerations will be south-eastern Poland, by which the author means the southern part of the Sandomierz Basin and the eastern part of the Polish Carpathians. As part of the expansion of the research region, the area of Western Ukraine was included in the work, i.e. the Eastern Fore-Carpathian Upland, Podolska Upland, Volhynian Upland and Polesie. In order to show the comparative background, the author several times refers to data coming mainly from the western part of Lesser Poland, as well as northern Slovakia, western Czech Republic and eastern Germany. The chronological scope of the work covers the period of approx. 2900-1500 BC, i.e. the period of settlement of the above-mentioned cultures in the discussed territory.

Economic habits of the CWC and MC population analysis was based on botanical (Chapter IV) and zoological (Chapter V) data from archaeological sites. In the case of botanical data, analyzes of palynological diagrams from peat bogs located in the debated territory were considered.

Chapter IV presents a picture of the vegetation and its changes at the turn of the Late Neolithic and the Early Bronze Age. The migrations of forest stands and taxonomic changes taking place among meadow plants were discussed. Based on the obtained data, periods of increased anthropogenic activity, directly affecting the natural environment, were indicated. Thanks to the pollen deposits analyzes, the presence of cultivated plants, recorded only during the settlement of MC, was also distinguished. The chapter dealing with botanical data also includes a summary of available anthracological and carpological data.

The analysis of animal remains was performed on the basis of available studies of bone materials from the considered region. Due to the state of research, the only method that could be used in this process was the NISP (Number of Individual Specimens) method. The percentage share of remains of individual species at the CWC and MC sites was demonstrated. These were the remains of cattle, pigs, sheep/goats and game. In the table compilation, the criterion of division into tools and ornaments as well as single bones and skeletal deposits was also used. The share of tools and ornaments in the graves of both cultures was considered in the context of the sex of the buried individual.

The chapters dealing with paleobotanical and archaeozoological sources are preceded by an introductory part. In the first chapter, an outline of the problem was presented and the goals and scope of the work were set. Then, the history of research conducted in the designated area from the end of the 19th century to the present, undertaken at late Neolithic

and early Bronze Age sites, is reported. The third chapter displays the environmental conditions of the indicated territory and issues related to climatic changes that occurred throughout the 3rd millennium BC and in the first half of the 2nd millennium BC.

Although the main purpose of the work is to characterize the basics of maintenance, in chapter VI the author undertakes the analysis of raw materials used in the production of CWC and MK. All types of rocks from which these communities made their tools are discussed and the nearest deposits/outcrops are indicated. The percentage share of tools made of particular raw materials is also submitted. The chapter also deals with the production of copper and bronze products and the locations of salt-bearing deposits, extremely important for nomadic pastoral communities.

Chapters VII and VIII concern, respectively, the settlement and chronology of the CWC and MC in the designated area. Settlement data are presented with a division into sepulchral and settlement sites for both cultures. The table summaries include the altitude above sea level and landscape characteristics. Settlement points of both cultures are shown on three maps. In addition, the issue of soil valuation of the considered region was raised, and their types are depicted on two soil maps. The chapter on chronology provides a tabular summary of all radiocarbon determinations obtained so far, as well as a general chronological framework for both cultures in the discussed region.

Chapter IX, dealing with issues in the field of bioarchaeology, which is currently the source of a number of research methods and is the future for the study of human prehistory, is of high research value. The main topic deliberated in this part of the work is the study of stable isotopes contained in the collagen of animal and human bone remains. After introducing the essence of this research, the author presents a summary of the results obtained in the course of his own research. The analysis concerned the content of carbon ^{13}C and nitrogen ^{15}N isotopes in animal remains from the CWC and MC sites in Skołoszów, Zamiechów, Szczytna, Mirocin and Wierszczyca. In the further part, the results of studies on stable isotopes for human and animal remains from sites located in the debated territory and from the western part of Lesser Poland published so far are exhibited. The results also concerned the content of carbon ^{13}C and nitrogen ^{15}N isotopes, as well as strontium isotopes $^{87}\text{Sr}/^{86}\text{Sr}$. On their basis, an attempt was made to characterize the diet of animals and people of the late Neolithic and early Bronze Age, as well as the mobility of human groups in this period. The issues of migration are also discussed in the later part of the chapter, which deals with the results of mitochondrial DNA research.

Chapter X is a summary chapter in which the characteristics of the economy of the KCSZ and KM population in south-eastern Poland and western Ukraine are presented, based on the data introduced in the previous parts of the work. In this summary, the author confirms the views existing in the literature on the pastoral breeding mode in the CWC and the agrocultural-breeding mode in the MC, but it is not possible to specify in detail the type of farming during the development of the CWC and the relationship between agriculture and breeding in the MC. The dissertation also shows significant difficulties in the detailed characterization of these profiles, also taking into account the changes in the course of

development of both cultures, and the differences resulting from the geography of the environment. According to the author, the complete exclusion of a sedentary lifestyle and agricultural activities throughout the entire period of CWC development is not a correct assumption, which is partly confirmed by the results of isotope research. The issue of the characteristics of the basis for the maintenance of both communities, considers impossible at the moment. In order to conduct further considerations, it is necessary to expand the source base, mainly with the results of osteological analyzes carried out on animal remains and isotope data obtained from both animal and human remains. In the concluding chapter, the author also discusses the social structure and indicates the need to undertake these considerations, addressing the issues of the basis of livelihood.

The next chapter is a catalog of sites, the materials of which were the basis of this dissertation. It contains the excavated and elaborated CWC and MC sites. The catalog has been divided into four parts, namely: CWC sites in south-eastern Poland, CWC sites in western Ukraine, MC sites in south-eastern Poland and MC sites in western Ukraine. The last chapter contains a list of sources used by the author.