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SOCIAL STRATIFICATION OF THE POPULATION OF THE FOREST-STEPPE AREA OF THE DNIEPERLAND IN THE EARLY SCYTHIAN PERIOD (VII – FIRST HALF OF VI CENT. BC)

ABSTRACT

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The paper raises the question of the reconstruction of the social structure of the Early Scythian population of the forest-steppe area of the Dnieperland. In the course of analysis, it was established that the most important elements of funeral rites among the population related to this group, as well as based on ancient writers, are the size and the complexity of burial and mound construction, and the diversity of grave goods. The classification of 197 burial complexes carried out in relation to the above-mentioned features, with the use of statistical inference methods, has led to separation of seven classes of graves, which may be combined within different social classes. The higher and the lower aristocracy, the ordinary population with the distinguishing class of warriors and the poorest population are numbered to these classes. The lowest place in the social hierarchy was represented by the people buried in the graves of representatives of upper classes.

Key words: burials, social stratification, Scythian archaeology, Early Scythian Culture, Early Iron Age, Forest-Steppe zone

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1. INTRODUCTORY REMARKS

This article is a part of a larger research project devoted to the issue of the social stratification of the people who inhabited the forest steppe area of Eastern Europe in the Scythian period. The project was financed from the funds of the National Science Center based on decision number DEC-2013/09/N/HS3/02839. The purpose of this paper is to present one of the research and interpretation methods of burial rites and their importance for the reconstruction of the social stratification of the population from the forest-steppe zone of the Dnieperland in the Early Scythian period. The reconstruction of social structure materials from burials of the Scythian society seems to be one of the most current research issues. For a number of researchers, especially those who deal with processual archaeology, burial rites are fundamental for creating an image of pre-historical social structure (see Brown 1995; Härke 1997; 2000; Lewartowski 2001; Ciesielska 2002; Błaszczyk 2013). Studies on the earliest stage of formation of the Scythian culture (the so called Early Scythian or Archaic period) (VII-1st half of the VI cent. BC – e.g. Ilinskaya and Te-renozhkin 1983, 16; Kovpanenko *et al.* 1989, 42) seem to be vital for research on social structure of population inhabiting the East European steppe, and forest-steppe area. Jud-ging by the number of funeral artifacts, the Scythian culture in the Early Scythian period was mainly developed in the area of the forest-steppe, not in the steppe area where its formation was observed in the later period (e.g. Skoriy 2003, 26-31, 87-88).

Reconstruction of the social structure of the population inhabiting the forest-steppe area of the Dnieperland in the Early Scythian period has already been a subject of research. Yuu. V. Buynov and A. S. Kuzmenko explored complexes on the left bank part of the Dnieperland from the VII-VI cen. BC. On the basis of statistical analysis among the investigated populations they distinguished six social classes – the military leaders (aristocracy), specialized warriors ("fully-armoured warriors"/"troopers"), the priests, so called ordinary population (farmers and cattlemen), servants and the traders (Buynov and Kuzmenko 1985). Yuu. N. Boyko used statistical analysis for social reconstruction. On the basis of artifacts from the eastern fortifications of Bielsk settlement and the burial complexes from the basin of the Vorskla River, Boyko distinguished three social classes. The first group includes the warriors of the higher class, aristocracy and horsemen. The second class was a group of farmers and the traders compared to "varna of Vaishya" (Hindu social order), while the last class included craftsmen, farmers and cattlemen. Slaves (servants) belonged to the lowest class in the social order. Apart from these classes and the free population, a group of the population with limited rights has been also differentiated (Boyko 1986; 1987; 1991). M. A. Shulzhenko was interested in Early Scythian burials by the Sula River. He analyzed 72 burial complexes from that area and differentiated three group of graves where the members of higher (one group) and middle class (two groups) were buried (Shulzhenko 1987). The burial complexes were the subject of interest of other researchers who regarded them as the burial places of the fully-armoured warriors ("troopers") and

higher class representatives (e.g. Ilinskaya 1968b, 67, 179, 186-187; Kubczak 1978, 78; Ilinskaya and Terenozhkin 1983, 316). There is less information about the social structure of the Early Scythian population from the right bank of forest-steppe area of the Dnieperland. The issue was only brought up in general terms in the light of elite burials, royal kurgans and privileged women like "priestesses" or "diviner" (e.g. Terenozhkin 1954, 96; Kovpanenko *et al.* 1989, 136-137; Skoriy 1990, 69-75; 2003, 55, 80-81; Klochko 2012). The question of burial places for the servants and slaves was raised more often (e.g. Ilinskaya 1975, 91; Ilinskaya and Terenozhkin 1983, 239, 240, 271; Kovpanenko *et al.* 1989, 35; Skoriy 1990, 71-72). J. Kubczak in his work discussed the problem of social structure of population from the forest-steppe area of the Dnieperland in Early Scythian period. The researcher devoted his paper to the Scythian aristocracy and focused on exploring the earliest Scythian burial complexes of higher class. Moreover, the author discussed the burial places of lower classes (graves of ordinary population and the "troopers") (Kubczak 1978, 108-112, 119-120, 120-124).

2. SOURCE DATABASE

197 burial complexes in the forest-steppe area of the Dnieperland have been analyzed (Fig. 1). Exploration of particular graves was only possible with relation to a certain amount of information about the nature of burial, size characteristics and diversity of burial constructions, height of the kurgan, nature of grave goods, the number of deceased and their gender. In case of gender, the most precious graves were those with an anthropological gender designation. Because such graves were very rare in the Early Scythian period, it was very important to select the graves where functional objects could indicate gender (determinants of sex). As a result of the analysis of graves with anthropological determinants from the second half of the VI century to the IV/III century BC (see Burghardt 2016b), the indicators of male gender included arms of offence (especially blade or blunt weapon), elements of body armour, parts of horse tack and bronze vessels (kettles). Female graves were identified by jewellery or sets of jewellery (except single beads and bracelets), toiletries (mirrors, stone platters and plates and dye pieces), metal (golden) applications of clothing and headdress, spindle whorls and needles. Whereas there are certain gender indicators, it is possible to find jewellery in male graves, and weapon or harness in the female ones (graves of Amazons – see e.g. Fialko 2015, 148-150). Among the 197 explored graves, single male, female, double and collective burials can be distinguished (see table 1). It is vital to mention that the findings referring to gender determination presented in the following analysis are generally consistent with the findings of other researchers. The exceptions are complexes with Osn_1 (list of abbreviations – see appendix No. 1), Pop_4 and 6, SurmKr_1, Volk_2, Trip_1 and Zur_406 – some researchers determine these burials as single female graves (Boyko 1999, 60, 62; Fialko 2015, 149; Skoriy 2003, 55), whereas on the basis of comparative analysis, this paper identifies them as single male (Osn_1; Trip_1) and double male-female burials (Pop_4 i 6, SurmKr_1, Volk_2; Zur_406).

Table 1. Analysed sex specific burial complexes of the forest-steppe area of the Dnieperland from the Early Scythian period. The name of complex (comp. the list of stances in the appendix No.1) is indicated by a letter, whereas the kurgan/grave number with a digit

Region	Single male burials	Single female burials	Double burials	Collective burials	TOTAL
Tiasmin River basin	G-G_48, 319; Kap_482; Make_453; Ost_471; Tek_346; Tur_486, 497, 506, 509; Vjab_173; Zur_448	G-G_33, 42; Make_454; Ryz_5; Vjab_134/2	Fl_CzM/2; G-G_38; Konst_246; Make_460; RepM_2; Zab_524; Zur_406, 407, 432/1; Vjab_174, 211	G-G_40; RepM_1; ZahM; Zur_447	**32**
Ros River basin	Beres_6 (Ostray Mogila), 42, 82; Bob_40; Kur_68/2, 77; Medv2_3; Steb_15	Bob_37/2; Kur_13; Laz_418; Medv3 _1; Stud_58	Bob_35; Jasno_6/1; Hodor_423; Kazar_27/1 Medv1_3, 4; Medv2_2	Beres_43; Medv1_9, 15, 22 i 23; Medv3_2, 3; Sin_100	**28**
the area of Kiev	BSz_1, 2; Trip_1	Ercz; Trip_2	Glev	Andr_1/1, Ivan, MalOf	**9**
Total right bank of the Dnieperland	**23**	**12**	**19**	**15**	**69**
Left-Bank of the Dnieper Terrace Forest-Steppe	RobM; Vere_3	Volo-2_1	Glad_449	Glad_3/1, 4	**6**
Sula River basin	AksSV_1 (Starshay Mogila), 4, 5, 7, 14, 17; Aks_ 467, 468, 469, 3, 4 i 5/1886; Jar_ 53; Bas_481, Б; Luki; Plav_2, 4; Pop_3, 7, 8, 9, 10; Prov; Volk_ Shumejko; Volk_1, 7, 8, 9, 11, 12, 495, 3 wyk. Linnichenki	AksSV_8, 10; Jar_48, 54; Geres_2; Pop_5, 13, 15; Volk_5	AksSV_6, 12; AksSol; Aks_2 i 6/1886; Geres_1; Pop_4, 6; SurmKr_1; Volk_2	-	**52**
Psel River basin	Brov_4	Baran_1	Brov_503	-	**3**
Vorskla River basin	Kirin_8/8, 13; Kupl_10/2, 11/2; Lich_8, k. z 1983 r.; Macz_2/1, 11, 17; Mar5p_1/2003; Osn_1; Pol_3; Skor_10/1906, 23/1975, 2/2013	Kupl_11/3, 14; Lich_2, 9; MTro_2/1, 2/2; Macz_1, 2/2, 3, 6, 16, 18/1, 21, 25, 29, 30, 32, 33/3, 33/4, 43/1, 37, 38/2; Per_5; Pol_1, 2, 4; Skor_2, 3 i 8/1965, 22/1975	Karp_1/7 i 3; Kupl_4/8, 15/1 i 2, 18; Macz_8, 15, 19; Prim_1; Skor_6/1910	Mar8p_1/2004, 1/2005; Per_6; Skor_k. z 2014	**60**
Donets River basin	MalR-1_3/1	Czer_4, 5; Lub_ 2/1938, 1/1945, 3/1994	Lub_2/1994	-	**7**
Total left bank of the Dnieperland	**52**	**46**	**24**	**6**	**128**
Total	**75**	**58**	**43**	**21**	**197**

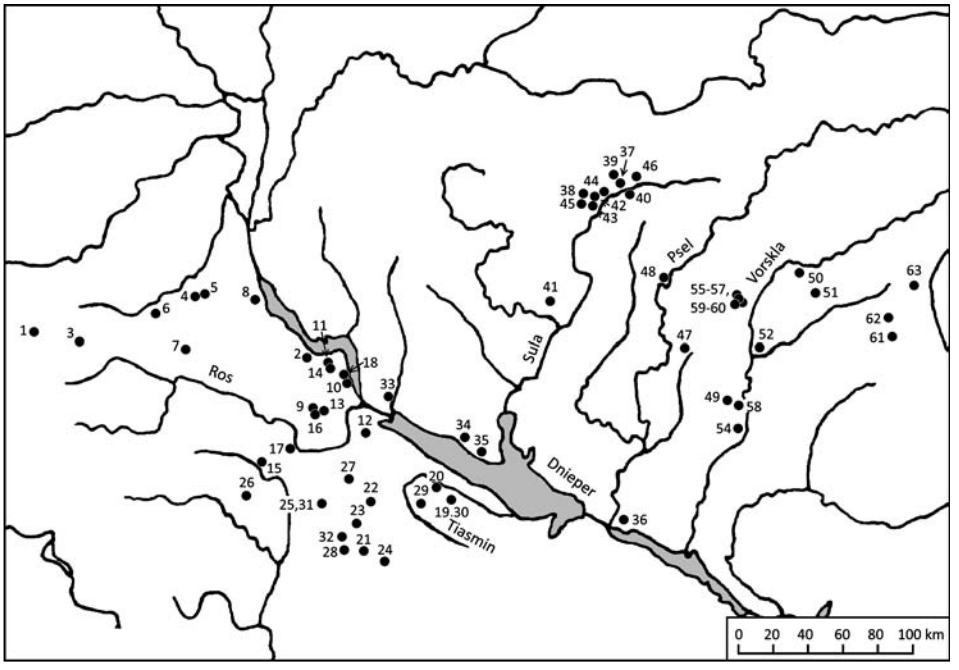

Fig. 1. The location map of Early Scythian burial complexes from the forest-steppe area of the Dnieperland considered in the analyses (numbering of the stands according to the list present in the appendix No. 1)

The above-mentioned criteria for the choice of sources for analyses, resulted in selection of only certain graves. The number is burial complexes for analysis is rather diverse. The undertaken analysis included about 20% of burials from the basin of Donets River (21.2% out of 33 complexes – Grechko 2010, 41), 30-44% of complexes from the right bank of the Dnieperland (29.4% out of 109 graves from the Tiasmin River basin, 41.2% out of 68 graves from the Ros' River basin and 44.4% out of 18 graves from the area of Kiev – Kovpanenko *et al.* 1989, table 1), 66.7% burials from the Sula River basin (52 out of 78 graves from the Early Scythian Times – Ilinskaya 1968b, 196-199).

3. THE SELECTION OF CHARACTERISTICS OF THE FUNERAL RITE FOR ANALYSES AND SOURCE CRITICISM

The presented analyses of burial complexes associated with forest steppe population of the Early Scythian period were carried out similarly to the one presented in the process of examination of social stratification of population of the Western-Podolian group of the Early Scythian Culture (ESC) (Burghardt 2016a). The first stage of research was to determine the characteristics of the funeral rite used by the researched population, useful for

social analysis. This stage is important for an archaeologist who is attempting to reconstruct the social structure of population (see Ciesielska 2009, 45). Detailed analysis of the elements of the funeral rite, widely considered as useful in the research of social differentiation of ancient human groups, showed that the way in which the body is buried is the most promising for the research on the issues undertaken in this paper. The starting point for research on this aspect of the funeral rite of the analyzed population was the conception of effort (*energy expenditure*) used by the mourners to erect the burial structure and to organize the burial ceremony (Tainter 1975; 1978; Peebles and Kus 1977). According to its assumptions, the higher the social position of the deceased, the higher the energy expenditure used for his funeral. In the case of the Scythian communities (of the "Scythian" cultural model), Herodotus (*The History*, IV, 71) confirms the accuracy of this conception for the study of social differentiation. His analyses compared with archaeological data (see e.g. Ivantchik 2011, 76-78, 80, 81, 83, table 3.1) indicate that the size of kurgan ("Having thus done they all join together to pile up a great mound, vying with one another and zealously endeavouring to make it as large as possible" – *The History of Herodotus*, IV, 71) and grave construction ("in the remaining space of the tomb" – *The History of Herodotus*, IV, 71) are the most important criteria for assessment of the work effort put into the burial of a Scythian. The relevance of the criteria reflecting the size of the kurgan (its height) and the burial construction underneath the kurgan was confirmed by the analyses' results of funeral sources of Western-Podolian group of the ESC (Burghardt 2016a, 60-62, 82) and other Scythian groups (of the "Scythian" cultural model) (e.g. Shulzhenko 1987, 144; Boltrik 2004; Romashko and Skoriy 2009, 90-95). The research on the burial complexes of the Western-Podolian group of the ESC show that the amount of effort-energy expenditure used by the mourners to erect the burial structure is also reflected in the diversity of burial constructions (Burghardt 2016a, 62, 68). It is an important indicator in the social analyses of population that have some relation with other Early-Scythian groups so called forest-steppe model of Scythian culture. Nevertheless, it is vital to highlight the fact, that because of the diversity of burial constructions (e.g. Kovpanenko *et al.* 1989, 29-34; Daragan 2007) where the analyzed groups of people buried the deceased, this paper exhibits a different approach to the burial constructions than it was within the Western-Podolian group of ESC. An important matter in the following research was not the presence or the absence of particular burial constructions, but the presence of particular components of the construction.

At the same time, it was indicated that the presence of certain categories of functional objects is important for research on the diversity of ancient communities inhabiting the forest-steppe (e.g. Babenko 2005, 172-183; Buynov and Okatenko 2013, 128; Burghardt 2016a) and East-European steppe (e.g. Rolle 1979, 33f.; Bunytyn 1985, 91-101; Boltrik 2004) area in the Scythian period. The objects determine social class and the identity of the deceased resulting from the biological conditions (gender and age) and function in society (Gryzińska-Sawicka 2014, 51). The most important assumptions within social ar-

chaeology and the research on social structure, the recognition of symbols of wealth and social prestige seems to be a vital issue (Renfrew and Bahn 2002, 188). The presence of the above-mentioned objects within the Scythian community is indicated in the description of a burial place of Scythian kings in *The Histories of Herodotus* where we can read that the burial place of the king contained "and cups of gold; for silver they do not use at all, nor yet bronze" (*The Histories of Herodotus*, IV, 71). It also indicates that in the king burials, rich and diverse functional objects may be found ("and a first portion of all things else" – *The Histories of Herodotus*, IV, 71; see Ivantchik 2011, 80, 81, 82-83). Characterizing functional objects found in the Early Scythian burials from the forest-steppe area of the Dnieperland it is necessary to say that in most cases the grave goods was incomplete as a result of robbery. In that case, the grave goods are poorer as the more valuable objects were taken. In case of analyzed communities, the research on the social position of the deceased is mainly based on the presence or absence of certain categories of functional objects.

Based on the analysis of the above-mentioned aspects of funeral rite, 46 characteristics determining each of the 197 burial complexes have been separated. The characteristics relate to the nature of the burial, its size reflecting the amount of work used for preparing the burial, and eventually the number and quality of functional objects found inside the grave. There are two questions referring to the mentioned characteristics. Firstly, it is necessary to harmonize the characteristics as some of them apply to the quantity (the size of the burial construction) and the others to the quality (particular elements of the burial construction and the functional objects). In order to do so, the quantity characteristics have been transformed into quality ones. Secondly, for the purpose of the analysis, it was common to refer to the repetitive nature of the characteristics (present in at least three burial complexes). The list of characteristics, along with the discussion on the basis of distinguishing of some of the variables is in the end of the publication (Appendix No. 2).

4. THE CLASSIFICATION OF BURIALS OF THE FOREST-STEPPE AREA OF THE DNIEPERLAND IN THE EARLY SCYTHIAN TIMES

4.1. The cluster analysis

An attempt to notice groups of burials, which can be connected with various social groups, is the main task of this part of the paper. One of the basic assumptions of social archaeology is the fact that social structure may be reflected in the variety of the burials according to the principle that people who belong to distinct social groups may bury their relatives according to different funeral rites (O'Shea 1984, 33-34). For the research on the social structure of the Scythians (and groups of the "Scythian" cultural model) it is vital

that the presence of various funeral rite for different social groups (the Scythian "Kings" (and members of their families – see Kubczyk 1978, 75) – the "private" Scythian) was specified by Herodotus. He describes the burial of Scythian king in a following way: "Thus they bury their kings; but as for the other Scythians, when they die their nearest relations carry them round laid in wagons to their friends in succession; [...] Thus private persons [...] are buried. [emphasis of the author]" (*The Histories of Herodotus*, IV, 73).

In order to explore the burials that could exhibit some similarities among various social groups, 197 Early Scythian burials from the forest-steppe area of the Dnieperland that could be described according to the certain funeral rite, have been classified. An appropriate systematization of burials was carried out according to cluster analysis and Ward's method that allowed the estimation of the distance between the complexes (Dwight 1989, 44-47; Renfrew and Bahn 2002, 189; Baxter 2015, 148-168). An analysis of the source material was carried out to specify the particular burial groups that shall reflect the social stratification of the groups of people under examination. Moreover, the analysis was performed separately for male and female burials. At first, cluster analysis was applied to all burials of the same gender and with the use of all 46 characteristics of the funeral rite. The process of analysis revealed that exploration of male graves containing female objects and the other way round leads to false results. Such analysis exhibits that the burials are grouped separately for single, male or female burials containing female or male objects and separately for collective burials with a mixed set of objects. Therefore, in the process of further analyses, the elements typical for male burials should be excluded from the research on female graves and vice versa. This observation leads to the exclusion of male characteristics No. 32, 34 and 36-43 from the analysis of male burials, and characteristics No. 22, 23, 25, 29, 31 and 44 from female ones. At the same time, the amount of complexes including burials of a particular gender decreased. In case of male burials, 128 complexes have been analyzed. They included all single and almost all double and collective burials (excluding the following complexes: Andr_1/1, Sin_100, Skor_6/1910) where according to anthropological data and the grave goods content, one of the deceased was a man. The group of female burials includes 109 complexes. They are mainly single female burials and almost all double and common burials (excluding the following complexes: Jasno_6/1, Glev, Hodor_423, Kupl_15/2, MalOf, Prim_1) where according to anthropological data and the inventory content, one of the deceased was a woman. The results of cluster analysis are shown in Figure 2 and 3. The detailed analysis of the complexes, grouped using the Ward's method, enabled to identify the most similar to each other in terms of the studied characteristics of the funeral rite. Two intersections have been made. The first (male burials) were made at the 10^{th} bond distance and the second (female burials) at the 8^{th} bond distance. On this basis, the complexes have been grouped into five smaller clusters and marked from 1 to 5 on the both dendrograms. The separated burial complexes are distinguished on the basis of their size, the height of the kurgan and location of the burial. Further analysis of the complexes grouped within separate clusters

revealed the existence of smaller sets (subclusters) within them. They differ from each other, except in quantity characteristics, also in the composition of the grave goods, and to a lesser extent, in the complexity of the burial structures. The analysis, carried out in this respect, showed that the optimal intersection of the dendrograms is in about 5.5 of the bond distance – 12 group of graves have been distinguished on this basis. The groups are marked with letters A,B,C,D and they follow the number of the main cluster that they belong to. The complexes of graves characterized in the above-mentioned way are presented in Tables 2 and 3.

The analysis of the data from the presented Tables leads to two important observations. Firstly, the distinguished groups of graves exhibit certain correlations between the size of kurgans, the surface and complicated of construction of the graves, the quantity and quality of the grave goods. Smaller constructions are covered with smaller burial mounds and contain poorer grave goods (1-4 functional categories of the artefact) (groups 1.A and 1.B in case of male burials and group 1.A in case of female burials), and larger burials are of greater size and richer containing (male burials – groups 5.A and 5.B, female burials – groups 4.A, 4.B and 5.B). In the centre of the distinguished burial complexes, there are medium size constructions with a moderate grave goods. Secondly, the differences between the distinguished complexes exhibit economic variations among the people in question. Certain types of functional objects found in particular male or female burial complexes may closely refer to the function the people performed in the society. In the case of almost all of the male burials (except complexes from group 1.A containing single military objects present in 41,7% of the complexes) the presence of military items among their grave goods may indicate that the men were mostly warriors. The differences in the sets of armour, presence of harness suggest the various function performed by the warriors (lightly- and heavily-armed infantry and cavalry – see Burghardt 2015, table 5). The issue of female burials is much different, as in most of the graves there is lack of artefact that could reflect the social function. The exception to that case are burials within complexes 4.A and 4.B. The grave goods of the above-mentioned graves included headdress ornamented with golden plates and beads, mirrors, stone plates and platters with pieces of dye what was characteristic for “priestess” or “diviner” (e.g. Daragan 2011, 615; Klochko 2012, 417-425; Zielińska 2012, 429).

This observation leads to the conclusion that certain groups of burials exhibit certain characteristics that may allow to identify them with the burial places of people belonging to diverse social groups. At the same time, it shall be assumed that the population inhabiting forest-steppe area of the Dnieperland in the Early Scythian period was not homogeneous and of a complex nature. The number of social groups within this society could have been smaller than the number of distinguished burial groups, whereas the most similar ones did not necessarily belong to one of the five clusters.

Table 2. The results of cluster analysis carried out for male burials.
List of shortcuts: C – capacity; Ch – childrens; com. – complexes; constr. – constructions; D – depth; F – female; H – height; i.s. – in single cases; M – male; S – surface. Star (*) indicates medium sizes of burials

Cluster (number com.)	Burial mounds		Burial constr.				Trizna/ fire – %	Grave goods			Sex specific burials
	H (m)*	presence of additional constr. elements	S (m^2)*	D (m)*	C (m^3)*	complexity of the constr.		composition	NAT	spleundor coefficient*	
1A (12)	1; 3 inlet burial; i.s. flat grave	-	5,1	0,8	4,2	diverse ground holes	-/16,7	handmade vessels and/or 1-2 categories of armaments (arrowheads)	0-2 (1,2*)	6,8	6 single M; 3 collective and 3 M+F
1B (13)	1,1; i.s. inlet burial	-	5,7	1	6	simple wooden tombs > ground holes	-/7,7	handmade vessels, arrowheads/spear, harness, rare knifes	1-4 (2,8*)	15,3	11 single M; 2 M+F
1C (11)	1,2	i.s. ditch and/or dyke	4,8	1,1	5,3	diverse ground holes	9,1/-	handmade vessels, 1-3 categories of offensive armaments, rare harness, knifes and other tools, i.s. armours and golden objects	2-8 (5,3*)	33,6	7 single M; 2 collective; 1 M+M and M+F
2A (14)	1,8	-	5,8	2,1	11,9	simple ground holes > simple wooden tombs	-/7,1	1-2 categories of offensive armaments, harness, rare handmade vessels and single categories of ornaments; i.s. poletops (Volk_7)	1-4 (2,8*)	16,5	12 single M; 2 M+F
2B (8)	1,3	-	5,7	1,5	9,2	simple ground holes > simple wooden tombs	100/100	1-2 categories of offensive armaments, harness, rare handmade vessels and knifes, i.s. armour	2-4 (3,1*)	18,5	6 single M; 2 M+F
3 (17)	3,2	i.s. ditch and/or dyke	7,3	1,8	15,9	simple ground holes > diverse wooden tombs	5,9/-	1-2 categories of offensive armaments, harness, rare handmade vessels, knifes, bracelets a golden objects, i.s. imported vessels	1-6 (3,7*)	22,4	9 single M; 6 M+F; 1 M+M and collective
4A (6)	1,5	-	19,9	2,1	40,2	simple ground holes	-/16,7	1-2 categories of offensive armaments, harness, handmade vessels, rare knifes, armours/sacrificial knifes	3-6 (4,3*)	24	5 single M and 1 M+F

Cluster (number com.)	Burial mounds		Burial constr.				Trizna/ fire – %	Grave goods			Sex specific burials
	H (m)*	presence of additional constr. elements	S (m^2)*	D (m)*	C (m^3)*	complexity of the constr.		composition	NAT	spleundor coefficient*	
4B (11)	1,9	in 27,3% com. ditches and/or dykes	14,7	2,2	31,8	diverse wooden tombs > ground holes with secondary constr.	18,2/18,2	1-3 categories of offensive armaments, harness, handmade vessels, knifes, rare armours and golden objects, i.s. imported vessels	4-8 (5,4*)	35	5 collective (M+F+Ch); 4 M+K; 2 single M
4C (11)	1,5	i.s. ditch and/or dyke	13,7	1,1	16,1	diverse ground holes > diverse wooden tombs	27,3/-	1-2 categories of offensive armaments, harness, handmade vessels, rare knifes, i.s. poletops, bronze vessels, golden objects and armours	3-9 (4,7*)	29,4	7 single M; 2 M+F and 2 collective
4D (8)	1,6	in 25% com. tent-like structres	16,2	1,7	36,2	complicated wooden tombs > ground holes with secondary constr.	50/62,5	arrowheads and cutting weapons, animal bones, rare handmade, knifes and other tools, harness, golden objects, poletops and imported vessels, i.s. armours and bronze vessels	2-7 (5,3*)	38,5	4 M+F; 2 M+F+Ch; 1 single M and M+Ch
5A (11)	7,8	in 27,3% com. titches and/or dykes, i.s. tent-like structure	21,9	2,3	59,4	diverse wooden tombs > diverse ground holes	81,8/72,7	2-4 categories of offensive armaments, harness, handmade vessels, rare knifes and other tools, armours, golden objects and poletops	3-10 (6,6*)	44,9	8 single M; 2 M+F and 1 collective
5B (6)	8,3; i.s. inlet burial	in 66,7% com. tent-like structures, i.s. ditch and/or dyke	54,9	2,7; 2 burial constr. located directly in the former ground	93,7	complicated wooden tombs > ground holes with secondary constr.	33,3/66,7	handmade vessels, 1-4 categories of offensive armaments, harness, golden objects and bronze vessels, rare armours, imported vessels and poletops/ sacrificial knifes	4-17 (8,3*)	64,8	2 M+K, 1 M+Ch, 1 M and 1 collective

Table 3. The results of cluster analysis carried out for female burials. List of shortcuts – comp. Table 2

Cluster (number complexes)	Burial mounds		Burial constr.				Trizna/ fire – %	Grave goods			Sex specific burials
	height (m)*	presence of additional constr. elements	surface (m^2)*	depth (m)*	capacity (m^3)*	complexity of the constr.		composition	NAT	spleundor coefficient*	
1A (8)	0,8; 2 flat graves and 3 inlet burials	-	3,1	0,95	3,1	simple ground holes	-/12,5	1-2 categories of ornaments, rare spindle whorls	1-3 (1,75*)	10,8	7 single F and 1 M+F
1B (9)	1,2	-	6,7	0,9	5,7	ground holes with secondary constr.	-/44,4	handmade vessels, spindle whorls, 1-2 ornaments (mainly sets of beads)	2-5 (3,1*)	16,6	3 collective, 2 single F, 2 M+F, 1 F+? and F+F
1C (12)	1,5	-	4,7	1	4,8	simple wooden tombs	16,7/16,7	handmade vessels, spindle whorls, rare 1-2 categories of ornaments; in 2 weapons (Macz_11 and Ryz_5)	2-6 (3,1*)	17,1	10 single F and 2 M+K
2 (8)	2,4; i.s. inlet burial	i.s. ditch and/or dyke and tent-like structure	12,9	1,1	13,7	diverse wooden tombs	50/50	handmade vessels, animal foods (bones), 1-2 categories of ornaments (mainly pins and/or beads), rare also golden jewellery, stone plates/platters, sulphur/realgar, golden applications of clothing	2-8 (4,5*)	28,2	3 single F, 3 M+F+Ch and 2 M+F
3A (11)	0,8; 1 flat grave	-	4,3	0,9	4,3	simple ground holes	w 72,7/ 27,3	handmade vessels, 1-3 categories of ornaments (mainly pins and/or beads), also rare sulphur/realgar, mirrors, i.s. also golden jewellery and imported clay vessels	2-7 (3,8*)	23,7	7 single F, 2 M+F, 1 F+F
3B (20)	1	-	5,8	0,9	5,3	simple ground holes > simple wooden tombs	-/10	handmade vessels, 1-4 ornaments (mainly pins and/or beads), rare kinives, i.s. stone plates/platters, golden jewellery, mirror, golden applications of clothing	2-7 (3,3*)	19	14 single F, 3 M+F, 2 collective

Cluster (number complexes)	Burial mounds		Burial constr.				Trizna/ fire – %	Grave goods			Sex specific burials
	height (m)*	presence of additional constr. elements	surface (m^2)*	depth (m)*	capacity (m^3)*	complexity of the constr.		composition	NAT	spleundor coefficient*	
4A (6)	3	i.s. ditch and/or dyke	13,9	1,8	27	complicated wooden tombs	37,5/-	handmade vessels, sets of ornaments (mainly sets of beads, pins, earrings), dyes, sulphur/realgar, golden jewellery, mirrors, golden applications of clothing	6-13 (9,8*)	68,5	2 single F, 2 M+F, 2 collective
4B (7)	7,5	in 2 comp. tent-like structures	46,6	1,9, 2 burial constr. located directly in the former ground	80,2	complicated wooden tombs	28,6/57,1	handmade vessels, 2-3 categories of ornaments (mainly beads and pins), dyes, sulphur/realgar, stone plates/platters, golden applications of clothing, rare golden jewellery and mirrors, i.s. arrowheads and harness (Bob_35)	5-11 (7,1*)	47,6	3 M+F, 2 collective, 1 single F
5A (6)	3	-	6,8	2,1	14,7	simple ground holes > wooden tombs	-/-	handmade vessels, sets of beads and bracelets, rare dyes, spindle whorls, animal foods (bones), i.s. harness (Volk_5), mirror and imported clay vessels	4-5	26,5	4 M+F, 2 single F
5B (2)	2,1, 1 inlet burial	tent-like structures	37,2	3,5	130,7	ground holes with secondary constr.	100/-	animal foods (bones), mirrors, golden objects (jewellery /applications of clothing), imported clay vessels	4-5	31,6	1 collective and 1 F+Ch
5C (7)	2,4	-	12,8	2,1	27,3	complicated wooden tombs > simple ground holes	14,3/-	1-3 categories of ornaments, stone plates/platters, mirrors, rare golden jewellery, i.s. imported clay vessels and cutting weapon (Skor_8/1965)	1-5 (3,4*)	23	3 collective,, 3 M+F, 1 single F
5D (13)	1,3	-	9,5	1,9	17,5	ground holes > wooden tombs	15,4/46,1	handmade vessels, spindle whorls and/or knives, 1-3 categories of ornaments (mainly beads and/or pins), stone plates/platters, mirrors, rare golden objects (jewellery/applications of clothing), i.s. sulphur/realgar, harness (Pop_5) and imported clay vessels, w 3 also weapons (mainly arrowheads)	2-11 (5,1*)	32	8 single F, 3 M+F, 1 F+Ch, 1 F+?

4.2. Comparative analysis of the separate groups of graves. The correspondence analysis

The next stage of the research was to conduct a comparative analysis of the groups of burials distinguished above for their systematization. The starting point for this part of the analysis is the definition of the social stratification, indicating in sociology the arrangement of a society in a hierarchy according to the social position from the highest to the lowest (Brémond *et al.* 2006, 167). In case of the populations under analysis, similarly to the other societies referring to Scythian culture (together with groups of "Scythian" cultural model) the main criteria for distinguishing the social position of the deceased is the amount of work dedicated to the construction of the grave and the "richness" of the grave goods. The distinguished groups of graves or their larger clusters should be categorized in a way that the highest in the rank are the graves where the energy expenditure in the construction of the grave was the highest and the grave goods were differentiated and of "rich nature". The transition to the subsequent classes is connected with the reduced amount of work used to build the burial construction and the burial mound and the grave goods become poorer. The lowest position in the hierarchy belongs to the graves with the smallest construction and the "poorest" inventory.

In order to categorize the particular group of graves according to the above-mentioned criteria, comparative analysis should be standardized and certain calculations should be made. For that purpose, a research method has been applied, where the box-plot diagrams presented the consecutive rankings of the examined characteristics of the funeral rite. An analogical research method was similar to the one used for analysis of the Western-Podolian group of ESC (Burghardt 2016a, 65-66, fig. 2-6).

To estimate the amount of work put into the construction of the grave, the following factors have been taken under consideration: the height of the burial mounds and the surface, depth and capacity of burial construction, whereas the "richness" of the grave goods was estimated on the basis of "the NAT points" (Number of Different Artefact Types) and "the splendour coefficient". Both methods examine certain categories of the functional objects (Hodson 1977; Hedeager 1978; 1992; Przybyła 2014, 11-14) and which is necessary in the case of incomplete burial complexes. Moreover, the second method allows it to be determined if particular categories of the artefact reflecting high social position group in the "richest" graves. The mean value of the scores for the "splendour coefficient" (Table 4) are estimated for particular groups of functional objects found in all of the graves, male and female. Other plot-box rankings (Fig. 4-9) were presented in order to organize burial complexes. Not only it allowed to order the complexes in a particular decreasing sequence but to compare one to another. Taking into account the similarities among some grave complexes, five to six category classes have been distinguished. The number of the particular complex (and single group graves) corresponds to the position of the group in the particular ranking.

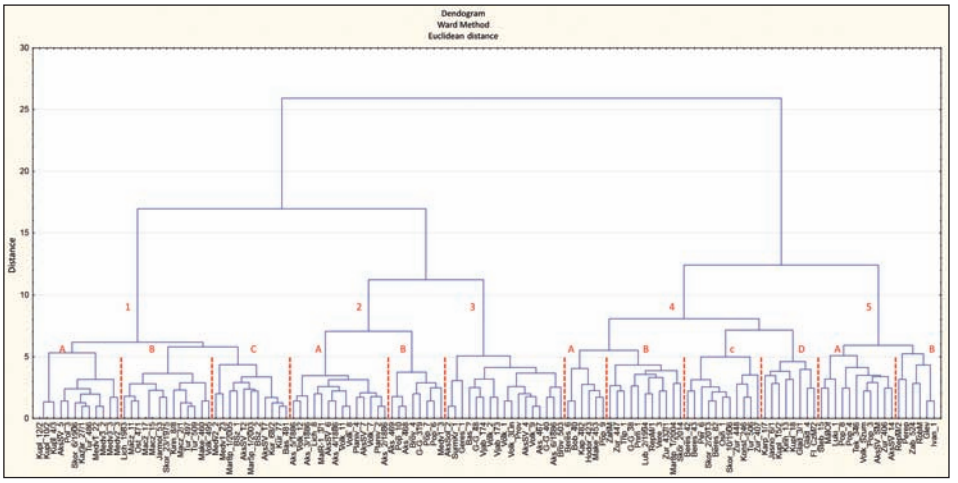

Fig. 2. Dendogram presenting the results of cluster analysis of the male burials from the forest-steppe area of the Dnieperland in the Early Scythian period. The list of abbreviations – comp. Table 1

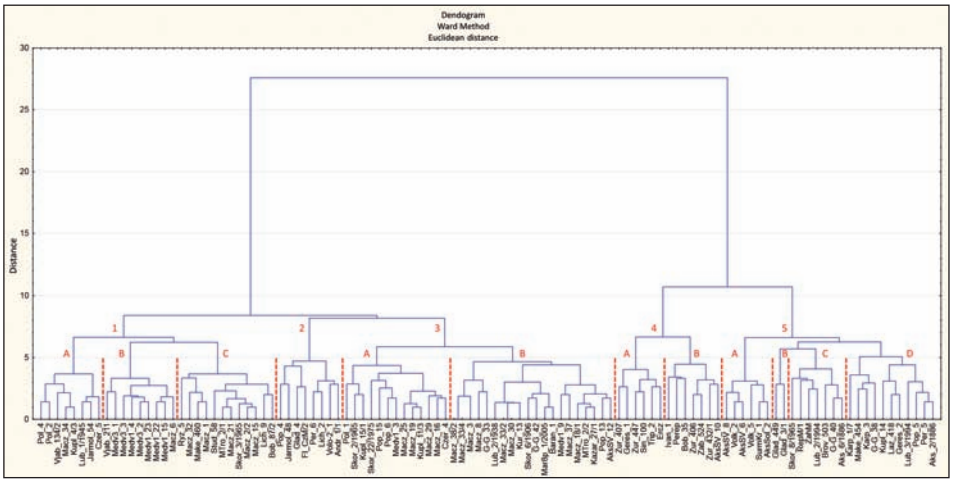

Fig. 3. Dendogram presenting the results of cluster analysis of the female burials from the forest-steppe area of the Dnieperland in the Early Scythian period. The list of abbreviations – comp. Table 1

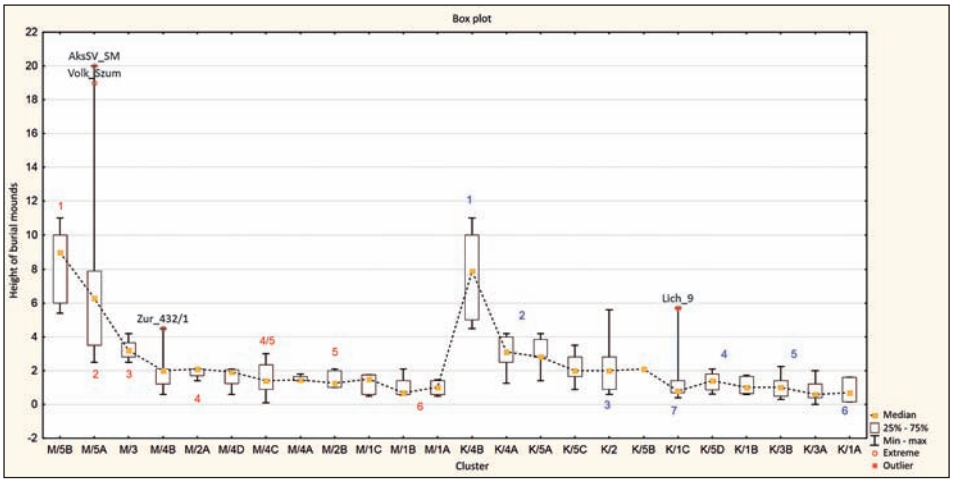

Fig. 4. Box-plot diagram showing the ranking "the height of kurgan mounds" for the group of male and female burials distinguished in the process of cluster analysis. The digits visible in the diagram refer to the position of subsequent groups of male (marked in red) and female graves (marked in blue) within the ranking

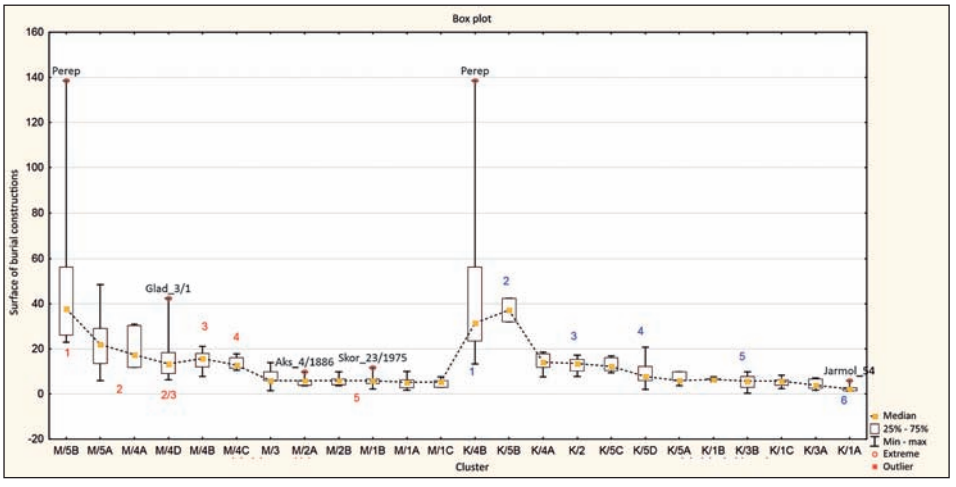

Fig. 5. Box-plot diagram showing the ranking "the surface of burial constructions" for the group of male and female burials distinguished in the process of cluster analysis. The list of marks – comp. Fig. 4

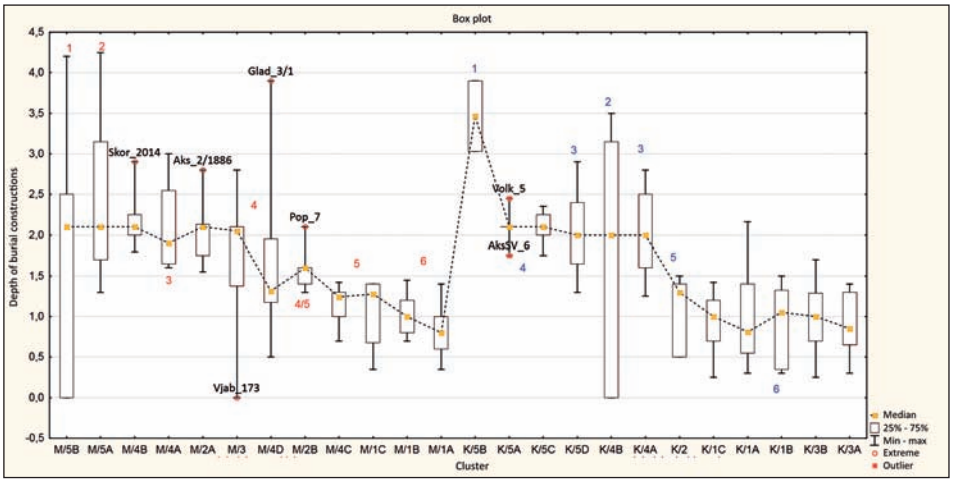

Fig. 6. Box-plot diagram showing the ranking "the depth of burial constructions" for the group of male and female burials distinguished in the process of cluster analysis. The list of marks – comp. Fig. 4

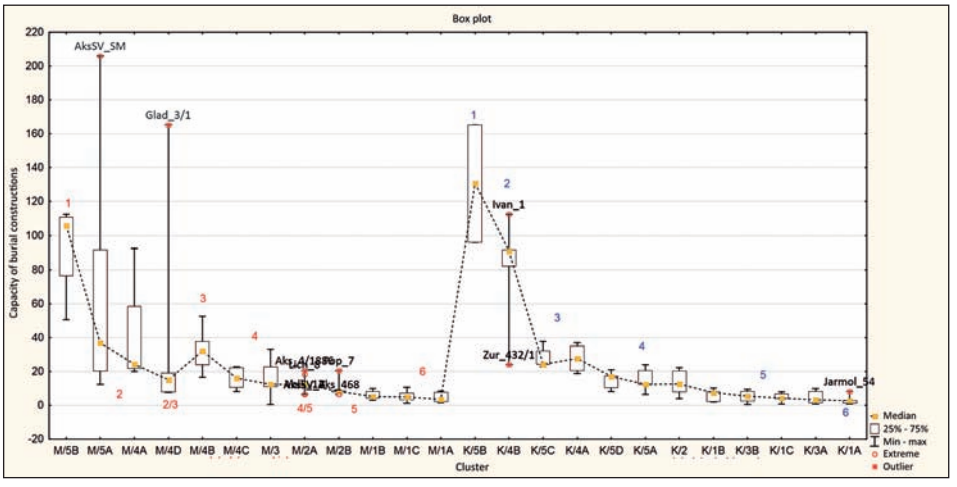

Fig. 7. Box-plot diagram showing the ranking "the capacity of burial constructions" for the group of male and female burials distinguished in the process of cluster analysis. The list of marks – comp. Fig. 4

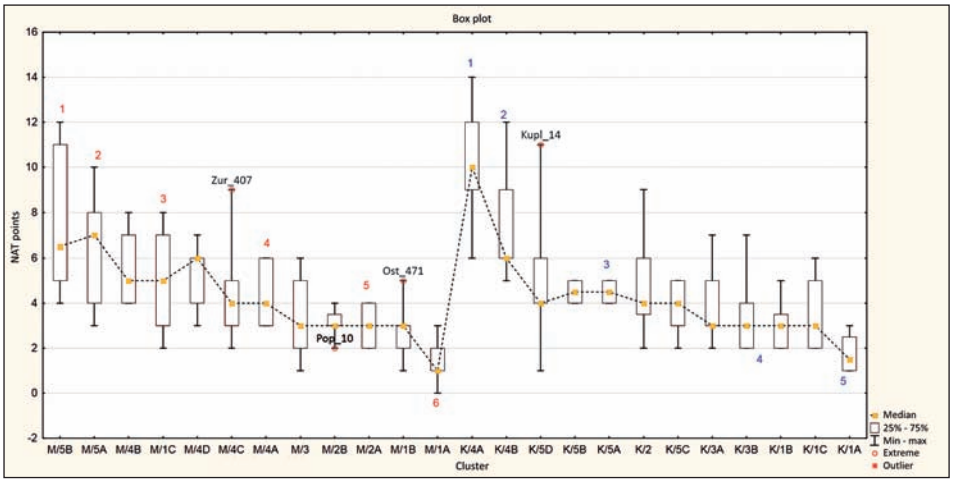

Fig. 8. Box-plot diagram showing the ranking "the NAT points" for the group of male and female burials distinguished in the process of cluster analysis. The list of marks – comp. Fig. 4

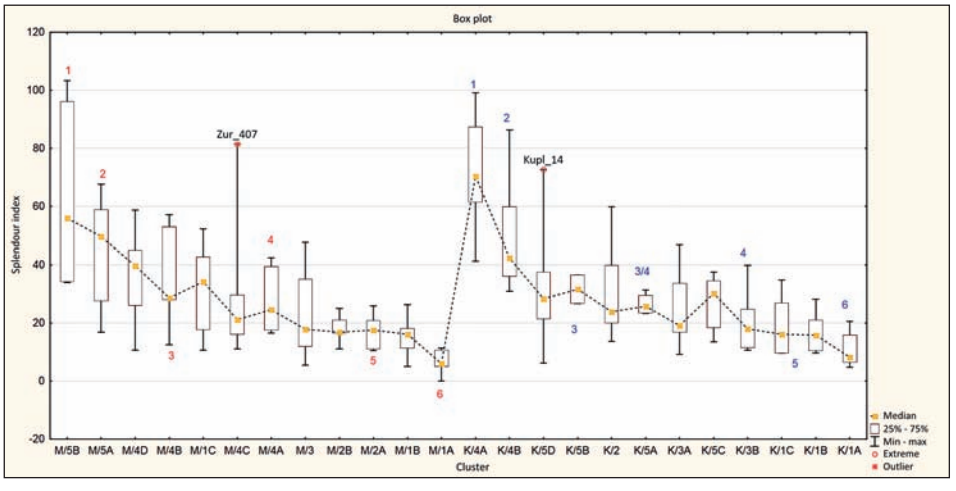

Fig. 9. Box-plot diagram showing the ranking "the splendor coefficient" for the group of male and female burials distinguished in the process of cluster analysis. The list of marks – comp. Fig. 4

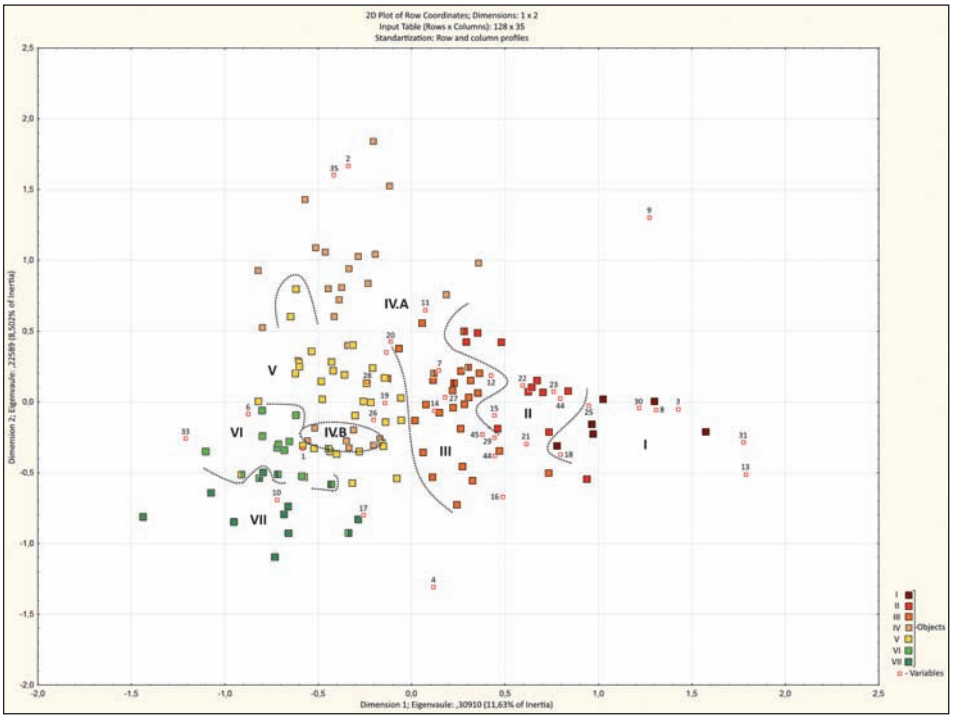

Fig. 10. Diagram presenting the results of correspondence analysis for the graves with male burial places. Paerticular classes are marked with colours, digits in bold – numbering of the grave classes (marked in dashed line) separated in the course of correspondence analysis

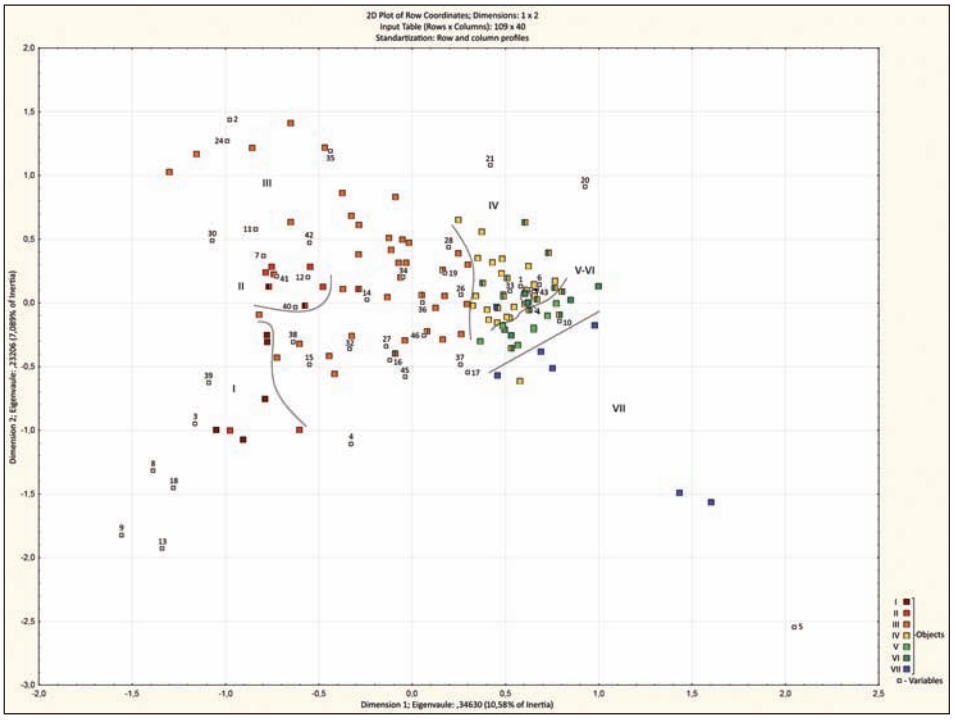

Fig. 11. Diagram presenting the results of correspondence analysis for the graves with female burial places. The list of marks – comp. Fig. 10

Table 4. The values of the splendor coefficient established for certain categories of burial artefact from the researched grave complexes of the forest-steppe area of the Dnieperland in Early Scythian period. The prestigious artefact typical for the high class are in bold

Categories of the functional objects	Number complexes	Splendour coefficient
1-2 beads	17	4,2
spindle whorls	31	4,7
handmade vessels	148	5
harness	71	5,5
arrowheads	71	5,6
sets of beads	73	5,7
knifes	49	6,1
pins	49	6,1
metal bracelets	21	6,2
spear	42	6,4
sacrificial animal food	36	6,4
earrings	27	6,6
dyes	22	6,6
cutting weapon	22	7,1
blunt weapon	18	7,2
imported clay vessels	9	7,4
sulphur and/or realgar	25	7,6
armour	15	7,8
stone plates/platters	28	7,9
ornaments (jewelry) made of precious materials	25	8
mirrors	25	8,1
tools	21	9,4
golden plates/applications of clothing and headdress	14	9,6
bronze poletops/sacrificial knives	8	10,5
artefact made of precious materials and their alloys, other than clothes ornaments or decorations	3	10,7
bronze vessels	4	14,2

In the process of comparative analysis carried out to estimate the amount of work devoted for the construction of the grave, the complexity of the burial construction and the presence of additional construction elements connected with the burial mounds, have been taken under consideration. The following groups of factors included: the surrounding ditches or dyke and wooden tent-like structure over the grave. Both of the abovementioned construction types may indicate the high social position of the deceased (Grigorev and Skoriy 2012, 457; Makhortykh 2013, 228). In the process of comparative analysis

carried out to estimate the diversification of quantity and quality of grave goods, the frequency of certain categories of functional objects has been taken into account. They were considered within the three groups of artefacts:

1. the distinguished categories of grave goods referring to the group of prestigious objects reflecting high social position. According to the literature, such artefacts include: objects made of precious metals (including jewellery), clay vessels imported from the Greek colonies by the Black Sea, bronze vessels, especially kettles (found only in male graves), sacrificial knives and the poletops, and golden applications of a ceremonial clothes and headdress typical for the poorest women, and the most expensive elements of the weaponry, armour;

2. sets weapon and elements of harness, whereas the first ones included single types of offensive weapons (arrows and spears set 1.A.), bladed or cutting weapon (group 1.B.), two types of offensive weapons (set 2) and at least three types of offensive weapons or elements of armour (set 3);

3. graves of female character; jewellery (only the quantity of the jewellery was considered), spindle whorls, bronze mirrors and stone platters.

In addition to the above-mentioned elements of the funeral rite, comparative analysis was carried out on the basis of such factors as the presence of accompanying human and horse burials. The presence of such burials may indicate the high social class of the deceased (e.g. Ilinskay and Terenozhkin 1983, 121; Babenko 2005, 175-178; Romashko and Skoriy 2009, 89, 95-98), what is verified in the *Histories of Herodous* (IV, 71). In the literature (e.g. Moruzhenko 1991, 164; Babenko 2005, 175; Kovpanenko *et al.* 1989, 35), accompanying burials are said to be double and collective graves where one of the deceased was buried in a manner different to that for whom the burial construction was raised. The indicators of the above-mentioned group of burials include: flexed body position, body orientation in opposition to the direction of the head of the main deceased (most commonly mentioned is the transversal position to the main axis of construction), location of the body at the legs of the main deceased or on the margins of the burial pit (even reaching outside the pit), the absence or very poor grave goods. 21 burial complexes with accompanying human graves have been distinguished.

On the basis of comparative analysis carried out with respect to the above-mentioned factors, the 12 female and male burial groups defined by the cluster analysis was reduced to seven larger complexes (classes). The classes of graves distinguished by this method have been arranged according to the definition of the social stratification (hierarchy), that is in such a way that the transition to the subsequent classes (from I to VII) is connected with the decreased amount of work used to build the burial construction and the burial mound , and the grave goods are getting "poorer" (less varied qualitatively and quantitatively). The characteristics of each class of graves, along with the basis of their distinguishing, are presented in Tables 5 and 6.

Table 5. The classification of male graves of forest-steppe area of the Dnieperland in the Early Scythian period – summary of the ranking, frequency of diverse burial constructions and selected categories of grave goods.

Burial constructions: I – simple ground holes (with absent secondary constructions)); II – ground holes with secondary constructions; III – simple wooden tombs; IV – complicated wooden tombs; rankings: 1 – ranking "the height of kurgan mounds"; 2 – ranking "the surface of burial constructions"; 3 – ranking "the depth of burial constructions"; 4 – ranking "the capacity of burial constructions"; 5 – ranking "the NAT points"; 6 – ranking "the splendor coefficient"; 7 – ranking- position among the rankings (the total number of rankings divided by their number); sets of weaponry: digital indication of the sets alike in text

Class	Cluster	Burial constr.				Ditches, dykes and tent-like structures	Positions on rankings							Distinguished categories of grave goods – partipication in % and composition	Sets of weaponry and harness (%)	Remarks
		I	II	III	IV		1	2	3	4	5	6	7			
1	5B (6)	-	1	-	5	in 66,7% comp. tent-like structures, i.s. ditch and/or dyke	1	1	1	1	1	1	1	100%; golden objects, poletops/ sacrificial knives, bronze vessels and imported clay vessels, armours	set 3 – 66,7; set 1A and 2 – each 16,7; harness 66,7	in RobM accompanying horse?; in 4 (Glev; Ivan_1; Perep; RepM/2) accompanying humans
2	5A (11)	2	2	6	1	in 27,3% com. ditches and/or dykes, i.s. tent-like structure	2	2	2	2	2	2	2	61,5%; armours, golden objects, poletops	set 3 – 72,7%; set 1A – 18,2; set 1 – 9,1; harness – 90,9	AksSV_SM i Volk_Szum – first position in ranking height.; AksSV_SM also first position in ranking capacity; s.c. (MalOf) accompanying human
3	4B (11)	-	1	2	8	in 27,3% com. ditches and/or dykes	4	3	3	3	2	3	3	72,7%; golden objects, armours and s.c. imported vessels	set 3 – 45,5; set 2 – 27,3; set 1A. – 18,2; harness – 100	Zur_432/1 – third position in ranking height; in 3 (RepM/1; Skor_2014; ZahM) accompanying humans
	4D (8)	-	3	-	5	in 25% com. tent-like structures	4	2/3	4	2/3	3	3	3,2	60%; golden objects, poletops and imported vessels, s.c. bronze vessels and armours	set 2 – 50; set 1A – 25; set 1.B and 3 – each 12,5; harness – 25	Glad_3/1 – second position in ranking capacity, surface and depth => **class 2**; in 3 (Kupl_15/2 i 18; Glad_3/1) accompanying humans

Table 5 cont.

Class	Cluster	Burial constr.				Ditches, dykes and tent-like structures	Positions on rankings							Distinguished categories of grave goods – partipication in % and composition	Sets of weaponry and harness (%)	Remarks
		I	II	III	IV		1	2	3	4	5	6	7			
3	4A (6)	6	-	-	-	-	5	2	3	2	4	4	3,3	80%; sacrificial knives/armours	set 2 – 33,3; set 1A – 16,7; harness – 83,3	-
4	3 (17)	11	1	3	2	i.s. ditch and/or dyke	3	5	4	4	4	4	4	17,6%; golden objects and s.c. imported vessels	set 1A – 41,2; set 2 – 35,7; set 3 – 5,9; harness – 88,2	in 2 (?) (G-G_40; Vjab_174) accompanying humans
	4C (11)	4	2	1	2	i.s. ditch and/or dyke	4/5	4	5	4	4	4	4,25	18,2%; poj. golden objects, poletops and bronze vessels (Zur_407) and armours	set 1A – 63,6; set 2 – 18,2; set 3 – 9,1; harness – 81,8	Zur_407 – third position in ranking NAT and second position in ranking splendor => **class 3**; s.c. (Per_6) accompanying humans
5	2A (14)	11	3	-	-	-	4	5	3	4/5	5	5	4,4	7,1%; s.c. poletops (Volk_7)	set 1A and 2 – each 35,7; harness – 64,3	-
	1C (11)	5	6	-	-	i.s. ditch and/or dyke	5	5	5	6	3	3	4,5	18,2; s.c. golden objects and armours	set 3 – 45,5; set 1A and 2 – each 27,3; harness – 54,5	-
	2B (8)	5	1	2	-	-	5	5	4/5	5	5	5	4,9	12,5%; s.c. armours	set 1A and 2 – each 25; set 3 – 12,5; harness – 87,5	-
6	1B (13)	2	1	10	-	-	6	5	6	5	5	5	5,3	-	set 1A – 77; set 2 – 7,7; harness – 61,5	-
7	1A (12)	7	5	-	-	-	6	5	6	6	6	6	5,8	-	set 1A – 33,3; set 1B – 8,3	-

Table 6. The classification of female graves of forest-steppe area of the Dnieperland in the Early Scythian period – summary of the ranking, frequency of diverse burial constructions and selected categories of grave goods. Sign – comp. Table 5

Class	Cluster	Burial constr.				Ditches, dykes and tent-like structures	Positions on rankings							Distinguished categories of grave goods	Sets of ornaments and toilet items	Remarks
		I	II	III	IV		1	2	3	4	5	6	7			
1	4B (7)	-	-	6	1	tent-like structures – 28,6%	1	1	2	2	2	2	1,7	57,1%; golden jewellery and golden applications of clothing	2 categories of ornaments – 100%; rare also stone plates and/or sulphur/realgar (each 71,4%) and dyes (57,1%)/mirrors (28,6%)	Zur_432/1 – third position in ranking capacity (23,94 m^3); in 3 (Bob_35; Ivan_1; Perep) accompanying humans; accompanying horse (Bob_35); s.c. (Bob_35) weapon and harness
2	5B (2)	-	2	-	-	tent-like structures – 100%	3	2	1	1	3	3	2,2	100%; golden jewellery, golden applications of clothing and imported vessels	mirrors	s.c. accompanying human (?) (Glad_449)
	4A (6)	-	1	2	3	s.c. ditch and/or dyke	2	3	3	3	1	1	2,2		3-4 categories of ornaments – 83,3%; 2 categories of ornaments – 16,7%; in 100% com. also mirrors and stone plates (100%) and dyes and/orsulphur/realgar (each 66,7%)	s.c. accompanying human (?) (Sin_100)
3	5A (6)	4	-	1	1	-	2	4	4	4	3	3/4	2,9	16,7%; s.c. imported vessels	sets of beads and bracelets – 100%; s.c. also dyes/mirrors	s.c. burial with harness
	5C (7)	3	-	1	3	-	3	3	4	3	3	4	3,3	28,6%; golden jewellery and s.c. imported vessels	1-2 categories of ornaments – 71,4%; 3 categories of ornaments – 14,3%; w 42,9% also stone plates/platters and/or mirrors	in 3 (G-G_40; RepM/1; ZahM) accompanying humans; s.c. burial with weapon

Table 6 cont.

Class	Cluster	Burial constr.				Ditches, dykes and tent-like structures	Positions on rankings							Distinguished categories of grave goods	Sets of ornaments and toilet items	Remarks
		I	II	III	IV		1	2	3	4	5	6	7			
3	2 (8)	1	1	3	3	s.c. ditch and/or dyke and tent-like structure	3	3	5	4	3	3	3,5	37,5%; s.c golden jewellery, golden applications of clothing	1-2 categories of ornaments – 87,5%; 3 categories of ornaments – 12,5%; w 62,5% also stone plates/platters and/or sulphur/realgar	Pop_4 – first position in ranking height (5,6 m); in 3 (Glad_4, Per_6 and Andr_1/1) accompanying humans
	5D (13)	8	3	-	2		4	4	3	4	3	3	3,5	30,8%; s.c. golden jewellery, golden applications of clothing and imported vessels	1-2 categories of ornaments (77%) + 1-3 categories toilet items (mainly stone plates/platters and mirrors)	Kupl_14 – second position in ranking NAT (11 pkt.) and splendour (72,7 pkt.); 4 burials with weapon/harness
4	3A (11)	10	1	-	-	-	5	5	6	5	4	4	4,8	18,2%; s.c. golden jewellery and imported vessels	1-2 categories of ornaments – 72,7%; 3 categories of ornaments – 9%; w 72,7% also mirrors and/or sulphur/realgar	-
	3B (20)	12	5	3	-	-	5	5	6	5	4	4	4,8	10%; s.c golden jewellery and golden applications of clothing	1-2 categories of ornaments – 85%; 3-4 categories of ornaments – 10%; s.c. also dyes, stone platters and mirrors	s.c. burial with weapon
5	1B (9)	1	8	-	-	-	4	4	6	5	4	5	4,7	-	1-2 categories of ornaments – 88,9%; s.c. also dyes	-
6	1C (12)	2	-	9	1	-	6	5	6	5	4	5	5,2	8,3%; s.c. golden jewellery (Lich_9)	1-2 categories of ornaments – 33,3%; s.c. dyes/stone platters	Lich_9 – first position in ranking height (5,7 m); s.c. burial with weapon
7	1A (8)	8	-	-	-	-	6	6	6	6	5	6	5,8	-	1-2 categories of ornaments – 62,5%; in 25% also single dyes/stone platters	-

The verification of the graves classification, created on the basis of cluster analysis, has been the final stage of analysis of the social differentiation of the researched populations in light of funeral sources (see Burghardt 2016a, 69-74, fig. 8). Correspondence analysis has been used for this purpose, part of a group of multidimensional methods of co-occurrence analysis and allows to verify the relation between the variables and artefact under observation. Correspondence analysis allows us to present a very clear, graphic presentation of the coexistence of variable categories (Zimmermann 1997, 9-15; Baxter 2015, 133-147). Correspondence analysis has been applied separately for the male and female burials, whereas in both cases the same data matrix was used.

The results of the correspondence analysis are shown in Figure No.9 and 10. Both Figures present the correspondence level between the variables symbolizing certain characteristics of funeral rite and the distinguished burial complexes (cases). It is necessary to focus attention on the graphic arrangement of the results of the correspondence analysis as the distribution of the examined characteristics on the two main axes of the diagram is close to parabolic. According to T. Madsen (2007, 20-21), such arrangement is characteristic for the data that exhibit continuity between variables and the cases. In the study of periodization, where correspondence analysis is often used (e.g. Baxter 2015, 145, fig. 9,5) such data configuration show the continuity in the formation of the examined characteristics and burial complexes. This particular configuration of data indicated the hierarchization of the distinguished classes of graves (see Burghardt 2016a, 74, fig. 8). In the case of male burials, on the right side of the first axis there are complexes that belong to class I and II which are characterized by the largest amount of work dedicated to the construction of a grave, the presence of tent-like structure over the grave, and the "richest" and most varied grave goods that include prestigious artefacts. On the left side of the first axis there are graves belonging to class VI and VII, characterized by the "poorest" grave goods and where the amount of work used for the construction of the grave was comparatively small. An analogical observation used in case of female burials showed that the richest and characterized by the large amount of work put into the construction of the grave, of the I and II class, and are mainly found on the left side of the first axis. On the other hand, the "poorest" and characterized by a small amount of work dedicated to the construction of the grave, included complexes of the V-VII class, and were focused on the right side of the first axis. In between the two discussed cases, the largest male complexes of class III-V, and female complexes of the III-IV class can be found. The burials are characterized by an "average" amount of effort dedicated into the construction of the grave, and the "average richness" of the burial inventory.

The results of correspondence analysis presented in the particular figures are basically consistent with the results of earlier studies. In both cases, the complexes of males and females vary in their concentration in particular places. Only in a few cases are the complexes associated with the given group/class of graves outside their main clusters. An exception to that case are male burials of the IV class, and female burials of the V and VI

Table 7. The classes of male graves from the forest-steppe area of the Dnieperland in the Early- Scythian period- summary results of the cluster and correspondence analyses. * The number of graves used in the process of cluster analysis (graves of specific gender), and the number of graves with no possible gender *identification***, in the bracket. The list of burial complexes of a specific social unit and grouped within specific class; only in case when the certain complex belongs to other class than it was indicated by results of cluster analysis; in other cases the list of complexes that relate to a specific group can be found in Figures 2 and 3. List of shortcuts and signs – comp. Tables 2 and 5

Class*	Cluster**	Burial mounds	Burial constr.	Grave goods	Remarks
I (6)	5.B	mounds higher than 5 m (average H 8,3 m); in 66,7% com. tent-like structures (66,7%) and ditches and/or dykes (16,7%); s.c. inlet burial (RepM/2)	the largest wooden tombs (including with dromos) and ground holes with secondary constr.: S 23-138,5 m^2 (average S 54,9 m^2), holes deeper than 2 m (average D 2,7 m); average C – 93,8 m^3	the most diverse (average spleundor coefficient = 64,8) and the richest (5-17 /average 8,3/ points NAT) grave goods: arrowheads and others categories offensive armaments (mainly cutting and blunt weapon) and harness, in 50% comp. also armours; handmade and imported vessels; golden objects other than ornaments, bronze vessels, rare poletops and sacrificial knives	in what the least 66,7% com. accompanying humans; i.s. accompanying horse; 2 M+F, 2 collective., 1 single M and 1 M+Ch
II (12)	5.A and single 4.B (Zur_447) and 4.D (Glad_3/1)	mounds higher than 2,49 m (average H 7,4 m); w 36,4% ditches and/or dykes/tent-like structures (each 16,7%); s.c. inlet burial	diverse ground holes and wooden tombs: S between 12 and 50 m^2 (average 24,7 m^2), holes deeper than 1,29 m (average 2,5 m); average C – 70,3 m^3	rich (4-10 /average 6,9/ points NAT) and diverse (average spleundor coefficient = 48,9) grave goods: 2-4 categories of offensive armaments + harness and/or armours, handmade vessels, tools; rare also poletops/golden objects other than ornaments	in what the least 16,7% com. accompanying humans; single M, 2 M+F, 2 M+F+Ch and 1 collective
III (26)	4.A-B, D and single 4.C (Zur_407 and 448) and 5.A (AksSV_14)	mounds of a height between 0,6 and 3-4,5 m (maximum 7 m; average 2,1); w 22,2% ditches and/or dykes (15,4%)/tent-like structures (3,8%); in 22,2% com. inlet burials	diverse ground holes (4.A) and wooden tombs (including with dromos) (4.B-D); S between 6 and 31 m^2 (average 15 m^2), holes deeper than 0,99 m (average 1,8 m); average C – 27,3 m^3	1-3 categories of offensive armaments (arrowheads + spears and/or cutting weapon) + harness (rare in 4.D) and/or w ok. 25% armours; handmade vessels, tools, rare also animal foods (bones), golden objects other than ornaments and poletops/sacrificial knives; i.s. imported vessels; 3-9 (average 5) points NAT, average spleundor coefficient = 32,7	in what the least 19,2-23,1% com. accompanying humans; 10 single M, 10 M+F, 4 M+F+Ch and 2 M+Ch
IV (26)	3 and 4.C	mounds of a height between 0,7-2,4 (4.C) and 2,5-4,2 m (3); average H 2,6 m; in 7,7% com. ditches and/or dykes	ground holes (including with secondary constr.) and wooden tombs (in about 23,1% comp.); S between 4,5-14 (4.C) a 10-17 m^2 (3) (average S 9,7 m^2), D between 0,5 and 2,8 m (average 1,6 m), average C – 15,4 m^3	arrowheads and/or spears, harness, rare handmade vessels, knives, animal foods (bones), in 3 also bracelets and single golden objects other than ornaments; i.s. armours and imported vessels; 2-6 (average 3,9) points NAT, average spleundor coefficient = 23,1	in what the least 11,1% com. accompanying humans; single M, 7 M+F, 2 M+F+Ch/?, 1 M+M and 1 collective

Class*	Cluster**	Burial mounds	Burial constr.	Grave goods	Remarks
V (33)	2.A-B, 1C and single 1.B (Skor_23/1975)	mounds about „standard" sizes: height between 0,5 and 2,1 m (mounds over Sula are higher) (average H 1,5 m); i.s. ditch surrounding the mound	ground holes (including in 1.C with secondary constr.) wooden tombs (in about 18,2% com.) about "standard" and smaller sizes: S between 3 and 10 m^2 (average 5,6 m^2), D between 1 and 2,8 m (average 1,7 m), average C – 9,8 m^3	1-2 (in 1.C 2-4) categories of armaments, harness (in 60-70% com.), handmade vessels, rare tools, single ornaments; i.s. armours, poletops, golden objects other than ornaments; 2-9 (average 3,7) points NAT; average spleundor coefficient = 22,9; grave goods in 1.C richer than w 2.A-B: – average NAT 5,6 and 2,9 points, average spleundor coefficient – 35,9 and 17,3	single M, 6 M+F, 1 M+M and 1 collective
VI (13)	1.B + single 1.A (Med2_3) and 1.C (Bas_481)	mounds about "standard" and smaller sizes: height between 0,6 and 1,8 m (average 1,1 m)	wooden tombs and ground holes about smaller sizes than "standard" size (s.c. larger): S between 2 and 9 m^2 (average 5,2 m^2), D between 0,35 and 1,2 m (average 0,9 m), average C – 4,8 m^3	poor (2-5 /average 2,7/ points NAT and few diverse (average spleundor coefficient = 14,9) grave goods: single categories of weapons – arrowheads/spears, handmade vessels, knives; in about 53,8% com. also harness	single M and 2 M+F
VII (12)	1.A + single 1.B (Kirin_8/8 and Tur_497)	mounds about "standard" and smaller sizes: height between 0,6 and 1,4 m (average 1 m); in about 30,8% com. inlet burials; i.s. flat graves	ground holes and single wooden grave about sizes similar size of class VI: average S – 5,2 m^2, average D – 0,9 m, average C – 4,8 m^3	the poorest grave goods: 1-2 categories of objects (average NAT 1,2 points and average spleundor coefficient 6,1 points): handmade vessels and/or arrowheads; i.s. com. without grave goods	6 single M, 3 M+F and 3 collective (M+F+Ch/?)

Table 8. The classes of female graves from the forest-steppe area of the Dnieperland in the Early- Scythian period- summary results of the cluster and correspondence analyses. List of shortcuts and signs – comp. Tables 2, 5 and 7

Class*	Cluster**	Burial mounds	Burial constr.	Grave goods	Remarks
I (5)	4.B	mounds higher than 5 m 5 m (average H 7,9 m); in 40% com. tent-like structures	the largest wooden tomb (including with dromos): S between 29-138,5 m^2 (average 57,9 m^2), holes deeper than 2 m 2 m (average 2,7 m); average C – 98,4 m^3; in 40% com. wooden greves located directly in the former ground	the most diverse (average spleundor coefficient = 53,4) and the richest (6-11 /average 7,8/ points NAT) grave goods: 2-3 categories of ornaments (including golden ornaments (jewellery)) – sets of beads + pins and/or earrings; handmade vessels; stone plates/platters, sulphur and/or realgar, golden applications of clothing ; rare mirrors, dyes and animal foods (bones); i.s. arrowheads	in what the least 60% comp. accompanying humans; i.s. accompanying humans horse; 2 M+F and collective, 1 F+F
II (9)	4.A, 5.B and 2 4.B (AksSV_10; Zur_432/1)	mounds higher than 2,49 m (average H 4,3 m); in 33,3% ditches and/or dykes (11,1%)/ tent-like structures (22,2%); s.c. inlet burial	wooden tombs (including with dromos) and ground holes with secondary constr.; S between 12 and 43 m^2 (average 21,7 m^2), holes deeper than 0,99 m (average 2,4 m). average C – 65,8 m^3	rich (4-13 /average 7,8/ points NAT) and the most diverse (average spleundor coefficient = 53,4) grave goods about analogues composition how in class I but with larger frequency of occurrence of mirrors and golden ornaments (jewellery); also imported vessels	in what the least 33,3% com. accompanying humans; 3 M+F, 2 M+F+Ch, 2 single F; 1 F+Ch and 1 2F+M+Ch
III (39)	2, 5.A, C-D and single 1.C (Lich_9), 3.A (Pop_15 and Skor_2/1965), 3.B (Pop_13) and 4.A (Trip_2)	mounds of a height between 0,6 and 5,7 m (average H 2 m); i.s. ditch and/or dyke and tent-like structure (3,8%); in 7,7% inlet burials	diverse ground holes (4.A) and wooden tombs (including with dromos) (4.B-D); S between 3 and 18 m^2 (average 9,9 m^2), D between 0,5 and 2,8 m (average 1,8 m), average C – 16,9 m^3	single or 3-4 categories of ornaments (in about 46,2% com.), mainly sets of beads, met. bracelets and pins, handmade vessels, knives and/or spindle whorls; rare (25-30%) mirrors, stone plates/platters, dyes; in about 23,1% com. ornaments (jewellery) made of precious materials; in about 10-12% comp. imported vessels and golden applications of clothing; in about 10% com. weapon; i.s. harness; between 2-3 and 9-11 (average 4,6) points NAT, average spleundor coefficient = 29,6	in what the least 10% com. (2 and 5.C) accompanying humans; single F, 12 M+F, 6 M+F+Ch/? and 2 F+Ch/?

Class*	Cluster**	Burial mounds	Burial constr.	Grave goods	Remarks
IV (32)	3.A-B + 2 1.A (Czer_5 and Lub/1945), 2 1.B (Macz_6 and Medv3_1) and 4 1.C (Bob_87/2, Macz_1, Make_460 and Ryz_5)	mounds about "standard" and smaller sizes: height between 0,2 and 2,3 (average H 1 m); 1 flat grave (Pol_1)	ground holes (with secondary constr.) and (in 21,9% comp.) wooden tombs about "standard" and smaller sizes: S between 2 and 10 m^2 (average 5,6 m^2), D between 0,3 and 1,5 m (average 0,9 m), average C – 5,1 m^3	beads and/or pins, (s.c. also others categories of ornaments), handmade vessels; rare knives and/or spindle whorls; w ok. 10-12,5% dyes, sulphur and/or realgar, dyes and also single gold/silver ornaments (jewellery); in about 9,4% com. weapon; NAT between 2-3 and 5-7 (average 3,6) points, average spleundor coefficient = 21	in what the least 6,3% com. accompanying humans; single F, 7 M+F and 2 F+F
V (7)	1.B	mounds about „standard" sizes: height between 0,6 and 2 m (average H 1,6 m)	ground holes with secondary constr. about "standard" sizes: S between 5,5 and 8,3 m^2 (average 6,7 m^2), D between 0,3 and 1,4 m (average 0,7 m), average C – 4,8 m^3	handmade vessels, spindle whorls, single categories of ornaments – beads or earrings; 2-5 (average 2,7) points NAT; average spleundor coefficient = 14,3	collective (M+F+Ch/?)
VI (11)	1.C + 3 3.A (Czer_4, Kupl_11/3 and Macz_29) and single 3.B (MTro_2/2)	mounds about "standard" and smaller sizes: height between 0,2 and 1,4 m (average H 0,7 m)	simple wooden tombs and single ground holes about "standard" and smaller sizes: S between 1,3 and 6,6 m^2 (average 3,9 m^2), D between 0,25 and 1,2 m (average 0,8 m), average C – 3,4 m^3	poor (2-3 /average 2,8/ points NAT and few diverse (average spleundor coefficient = 12,6) grave goods: handmade vessels, spindle whorls, i.s. ornaments/animal foods (bones)	single F and 1 M+F
VII (6)	1.A	flat graves and inlet burials + single mound of height 0,7 m	ground holes about sizes similar size of class VI: average S – 3,5 m^2, average D – 1 , average C – 4 m^3	the poorest grave goods: 1-2 categories of objects (average NAT 1,3 points NAT and average spleundor coefficient 7,7 points): handmade vessels, spindle whorls, earrings, sets of beads	single F + 1 M+F

class. In the first case, complexes classified for that group make up two certain clusters separated by the burials of the V class. The results of the comparative analysis of the burial complexes showed that the main reason for the division of burials of the IV class into smaller sets, was the various heights of the mounds (class IV.A- 2nd size group, class IV. B- 1st size group), and the surface of the burial construction (class IV.A surfaces of 1 , less often 2 group, class IV.B- surfaces of 2 group). The presented figure shows that female burials of the V and VI class are grouped within one, big cluster, with no possibility of separating smaller sets connected with particular groups/classes of graves. At the same time, single graves that exhibit some relation to both groups can be found outside their main cluster. In the course of comparative analysis, it was established that the same location of the correspondence table was influenced by the common characteristics of funeral rite such as the mounds and burial constructions of the group 1, and relatively "poor" grave goods including only obligatory handmade vessels and spindle whorls. Moreover, the results of detailed analyses showed that both of the grave classes differ in size parameters and the "richness" of the grave goods (see Table 3). In correspondence to the second observation, it was reasonable to divide these graves into smaller groups/classes. The graves located outside their main clusters distinguished in the course of cluster analysis could be divided into two groups. The first group incidentally include graves located outside their main cluster, because of robbery or the presence of some characteristics typical for other groups. Within the second group, there are graves that could show some relation to the graves other than the ones indicated by the analyses carried out. Such a situation may be observed in 9 male and 20 female burials (see Fig. 9-10 and Tables 7-8). The detailed analysis of the graves showed that they should be incorporated into the groups/classes indicated by the correspondence analysis. Figures No. 9 and 10 present these particular groups in double-colour reference numbers. The colour of the left part of the number indicates the original class of the graves, whereas the colour of the right part of the number show the group designated in the process of correspondence analysis.

The final classification of the male and female burials of the forest-steppe area of the Dnieperland of Early Scythian period, made on the basis of the results of the correspondence analysis, is presented in Tables 7 and 8.

5. SOCIAL STRUCTURE OF THE POPULATION OF FOREST-STEPPE AREA OF THE DNIEPERLAND OF EARLY SCYTHIAN TIMES – DISCUSSION

The results of the above-mentioned analysis may be described within three different levels: (1) the characteristics of the created system of burials classification, (2) the interpretation of the results, (3) introductory remarks on the social structure of the population in question.

1. The analysis of 197 Early Scythian graves of a specific gender, from the forest-steppe area of the Dnieperland, allowed seven classes of male and female burials to be distinguished. The classes of graves were arranged according to a certain hierarchy, meaning that the transition to the subsequent classes of graves is characterized by a decreased amount of work used to organize the burial ceremony (construction of the grave and the burial mound), and the grave goods become "poorer" and less varied.

2. All of the distinguished classes of graves have certain characteristics that allow them be described as burial places of people belonging to different social classes.

3. In light of the above-made observations, it can be assumed that the societies under analysis show the complexity of the social structure of the population. It was confirmed that the Scythian (and groups of "Scythian" cultural model) population of the forest-steppe area of the Dnieperland from the Archaic (Boyko 1986; 1987; 1991; Moruzhenko 1991; Shulzhenko 1987; Burghardt 2016a, 74-82) and the Classical (e.g. Petrenko 1967, 57-58; Berezutskiy 1995; Buynov and Okatenko 2013) period and the Scythian population of the steppe (e.g. Ilinskaya and Terenozhkin 1983, 121-188; Gening 1984, 124-153) enjoyed a complex social structure.

The main point of this part of the study is the interpretation of the distinguished classes of graves and here it is necessary to highlight two issues. Firstly, the social stratification of the Early Scythian population may be analysed on the basis of archaeological material and the information provided by the antiquity authors. However, the sources do not refer directly to the regions and relate to the earlier than the researched period of the development of Scythian culture (Kubczak 1978, 67; Ivantchik 2011, 79). Another important factor is the limited number of written sources resulting from the certain way which the authors of Antquity perceived the "barbarians" (in this publication, the Scythians) (see e.g. Paroń 2007; Kolendo 2008, 20-24). However, it is a vital category of sources for the process of outlining the social structure of the researched populations. Secondly, within this study, the interpretation of the results of the analyses was made in accordance with the division of the Scythian population, present in the literature of the subject, into an aristocracy (including the royal elites), high society (nobility), middle classes (described by the Russian and Ukrainian speaking nomenclature as ordinary) and lower class population (the poorest people and people with limited social rights) (e.g. Petrenko 1967, 57-58; Kubczak 1978, 69-75; Ilinskaya and Terenozhkin 1983, 121-188; Gening 1984, 146-148; Shulzhenko 1987, 179; Babenko 2005, 172-183). The structures were not homogeneous and split up into smaller groups (see e.g. Kubczak 1978, 67, 71-75; Bunytyn 1985; Romashko and Skoriy 2009, 87-91).

In case of the researched populations, similarly to the Scythian groups of people (of "Scythian" cultural model), the highest position in the social hierarchy belonged to the elites. The complexity of the elites could have been observed from the earliest, archaic formation stage of the Scythian culture (see e.g. Burghardt 2016a, 74-82; Galanina 1994, 77-78). The complexity of the higher society of the forest-steppe area of the Dnieperland is

even more enhanced because of the variety of people inhabiting that area. The forest-steppe groups of people of the "Scythian culture" were a combination of two ethnical and cultural groups of people: Iranian nomads and the settled, autochthonous people with the origin of the late-Charnoles culture. The relation between the two groups is especially important for the interpretation of the distinguished burial clusters. It is considered, that the imperative power over the mixed, agricultural-pastoral federations belonged to Scythian (nomadic) aristocracy (e.g. Skoriy 1993-1994, 166; 2003, 75; Bessonova 1999, 149; Chochorowski 1999, 335; Grechko 2010, 101). Hence, it is important to notice that the researchers exploring the relations between the ruling nomads and their subjects, point to the existence of the elite within the second group of people (e.g. Kubczak 1978, 73-74; Dashkovskiy and Meykshan 2015, 14, 18; Murzin 2015, 64).

In the light of the above-mentioned remarks, it is vital to specify the groups of graves related to the nomadic aristocracy. The subject literature connects the nomadic aristocracy with the groups of burials of the largest constructions, and the "richest" and highly varied grave goods (Skoryi 1990, 70-73, 106-111; Galanina 1994, 76; Romashko and Skoriy 2009, 89; Ivantchik 2011, 79-83). The highest position in the ranking of the grave goods was taken by prestigious artefacts reflecting a high social position, and statutory artefacts connected with the army and the sacred (bronze poletops, sacrificial knives, golden elements of clothing and headdresses). Another element of the funeral rite typical for the Scythian higher society is the presence of the accompanying human and horse burials. Within the classification of the graves, the above-mentioned characteristics are typical for the complexes of male and female burials and grouped within the I class. The burials were characterized not only by the elements typical for this group (large size and complexity of the burial construction, relative size of the burial mound and variety of the grave goods) (Tables 7-8), but additionally by the presence of characteristics common for the burials of Iranian nomads (Scythian). The elements include the presence of turf in the burial mounds (Perep and Ivan_1), anthropological stone steles (RobM), and the poletops (Perep and RepM/2) present within the grave goods, and are common determinants of Scythian funeral rite (Skoriy 2003, 45-50, tabl. 1; Grechko 2014, 10, 11). The above-mentioned elements of funeral rite were observed in half of the graves of the I class, whereas at least two elements characteristic for nomadic (Iranian) funeral rites were found in all of the eight complexes of the certain class. The nomadic characteristics of funeral rite are as follows: a wooden tent-like structure over the grave, ditches and dykes surrounding the kurgan mound, placing the deceased on a wooden platform or a stretcher, the presence of horse burial, sacrificial meat, a metal kettle, sulphur and/or realgar, stone plate/platter with a mirror, sets of militaries with blunt weapons and/or armour, and finally artefacts of a Caucasian or Middle Eastern origin (Skoriy 2003, 51-54, table 1; Grechko 2014, 10-13).

The presence of nomadic funeral rites is not only typical for the burials of higher class, but also for the lower class. However, the presence of these factors decreases in subsequent classes, and is absent within VI and VII classes. The group of burials characterized

by a nomadic funeral rite include male and female complexes of II class, where usually at least two elements typical for that rite were present. Factors such as the relatively large size of the grave construction, the height of burial mounds and the varied grave goods are similar to characteristics typical for I class (Tables 7-8). The elements that distinguish the two complexes are the presence of less complex burial constructions and "poorer" grave goods (male burials) within the graves of II class. Furthermore, the complexes of the II class include single burials (Aksyutintsy, Staykin Verkh, mound Starshay Mogila; Volkovtsy, mound Shumeyko) of larger sizes than the graves of I class (the surface of the grave was at least 30 m^2 and 3.5 m deep, the burials are covered by 20 m and 19 m high mounds). To conclude, it was established that the funeral complexes of II class were burial places of members of nomadic aristocracy.

The above-presented differences among burial complexes may indicate the complexity within the examined, aristocratic part of the population. Considering the amount of work dedicated to the construction of the grave, the content of grave goods and the presence of accompanying human and horse burials, it was established that people buried in the graves of the I and mostly distinguished graves of II classes took the highest place in the social hierarchy of nomadic higher society. People buried in the graves of the II class took the middle place in the social hierarchy of nomadic elites. Considering the fact that there is no written evidence, and because of the complexity of the Scythian social gradation system of higher society (see Kubczak 1978, 72-75; Murzin 2015, 64-67), it is difficult to interpret the burials connected with both of the above-mentioned classes. Finally, the analysed burial complexes share some regional characteristics. The groups of I class are typical for the area of the Right-Bank of the Dnieperland, whereas 60% of II class complexes for the left side area of the Dnieperland (the Sula basin). In both cases, the burials of I and II classes take the higher place in the hierarchy of the graves of the whole forest-steppe area of the Dnieperland. In light of this observation, it can be assumed that within the burial complexes of the examined classes there may be graves of people who took the same or similar position in the society but who inhabited various parts of the forest-steppe area of the Dnieperland in the Early Scythian period.

Despite the complexity of the social gradation system, a few smaller social groups could be distinguished within the explored population. In light of the results of comparative analysis, the higher place within the hierarchy of the examined elites was taken by people buried in the largest graves of I and II classes. The literature of the subject describes these complexes as the burial places of the highest rank of the leaders (chieftains and military leaders – the *nomarchs* of Herodotus?) the groups of people (single tribes or their federations) who inhabited a particular area of the Dnieperland. Not every burial complex may be interpreted in the same way. The key point in identifying the dead was not only the element that distinguishes a particular burial complex among the other burial groups of the same region, but also the relationship with a particular group of settlers. In the course of the comparison of the cemeteries with the mostly distinguished graves of I and II classes

to the Early Scythian graves and settlements (see e.g. Boltryk 1993; Bessonova 2000; Bilan and Soltis 2014, 73-82; Ignaczak *et al.* 2016, 242-243, fig. 1), it was established that the chieftains and military leaders were buried within the six complexes of I class of the left side area of the Dnieperland (Glev; Ivan_1; Perep; RepM/2; Zab_524; Zur_406) and in two mostly distinguished graves of II class of the Sula basin (kurgans Starshaya Mogila and Shumeyko). Moreover, that group includes at least three complexes excluded from the analysis: kurgans No. 10/1962 of the central Lubotinian group located in the Donets river basin, kurgan No.1 from the Karavan group (Bandurovskiy and Buynov 2000, 218-219, 220-221) and of the size similar to the grave sizes of I class, and an enormous kurgan (about 100 m across) called the Great Scorobor near the Bilskie hillfort (Gorodcov 1911, 138-139; Makhortykh 2009, 268). A total of at least 11 distinguished burial complexes shall be classified as the burial places of local chieftains and military leaders ruling particular areas of the forest-steppe zone of the Dnieperland. The complexes varied in relation to chronology and, according to the current dating system of the analysed complexes available in the literature, the Starshaya Mogila (older) and Shumeyko (earlier) kurgans by the upper Sula river, Glevakha (older) and Perepytiha (earlier) in the region of Kiev, kurgan No. 524 from Zhabotin (connected with the earliest stage of Scythian expansion from the end of VIII and beginning of VII cent. BC – Skoriy 2003, 39-40; Grechko 2013, table 1), kurgan No. 406 from Zahurovka (older) and the grave No.2 located within the kurgan Repykhtova Mogila (earlier) in the interfluves of Tiasmin and Great Vysia River (Medvedskay 1992, 88-91, 92-93; Grechko 2013, tabl. 1), are thought to be of an asynchronous type. The relation between the complexes (see e.g. Skoriy 2003, 32-37; Makhortykh 2016, 148), and the process of periodization needs further studies (see e.g. Makhortykh 2016, 150). Closing the observations made in the course of the interpretation of the graves within the explored complex, it was estimated that there is possible relation of the graves with burial places of "nomarch" (*The Histories IV, 66*). Such an interpretation is credible only if the particular groups of settlers that can be related with the burials of "nomarchs" reflect the realistic regional division into administrative units *("district"/noms*).

The above-presented method of connecting some graves of I and II classes with the burial places of local leaders of the forest-steppe zone of the Dnieperland, is only one of many interpretational possibilities. Not every grave is a burial place of people belonging to a higher social class. Other burials (especially those of the II class) may be the graves of people who took a lower place in the social hierarchy of nomadic aristocracy. Based on certain assumptions, two smaller groups were distinguished: privileged members of the squad (including their leaders) – the so called "troopers" (Bessonova 1998) or "elite troopers" (Shelekhan 2016, 58-59, 64). Members of that group formed the basis of the "nomadic" army, and supported local chieftains and military leaders (Kubczak 1978, 73; Bessonova 1998, 57; Shelekhan 2016, 59). The characteristics of the funeral rite typical for the "troopers" include: 1. the nature of grave goods (sets of arms of offence, suits of armour and elements of horse riding equipment) indicating the relations with the army;

2. location of the complexes in the places of supervised trade routes (including the crossings on the Dnieper river), near the main places of trade craft, and areas suitable for cattle grazing (Bessonova 1998, 57-58; 1999, 151; 2000, 121, 122). The above-mentioned elements were observed in some graves of the I (RobM) and II (Glad_3/1; Luki_1; MalOf; Pop_3, 4 i 8) classes. Within the burial complexes of I and II classes, graves of representatives of the ancestral and tribal aristocracy (?) who buried their relatives in particular cemeteries. All the female burials of I and II classes ought to be interpreted in this manner, as indicated by the coexistence of relatively few of them in the same graves where the leaders of local societies were buried (Ivan_1; Perep; Zab_524; Zur_406) (relatively the leaders of squad – Glad_3/1), or within the necropolis where men of same social position were buried (AksSV_10; male complexes of II-IV classes and female of II class in Zhurovka cemetery) or in the burial places of the local leaders of a squad (Glad_449). The leaders of the ruling families (tribes) could have been buried in the cemeteries with the absent graves of I and II classes (Bob_35; Ercz; Sin_100) (see Daragan 2011, 615). Additionally, in the female burial places of I and II classes (complexes with burials containing golden plates/applications of headdress, bronze mirrors and stone platters/plates with dyes), the burial places of a priestess/diviner can be observed (e.g. Daragan 2011, 615; Klochko 2012, 417-425; Zielińska 2012, 429).

The burials of III class took the lower place in the hierarchy of the classes in comparison to the above-presented classes. They are mainly characterized by a lower amount of work dedicated to the construction of the grave and the mound, and the "poorer" set of grave goods (Tables 7-8). The burials characterized by nomadic (Iranian) funeral rite are less frequently observed within that specific burial complex. The elements of this rite (including bronze poletops (Fl_CzM/2 and Volk_477) within the grave goods typical for the Scythian tradition, and the location of the accompanying human graves in the dromos (Skor_2014) – Skoriy 2003, 49, 50)) were present in over half (63%) of the graves of that complex. At this point it is necessary to mention S. Skoriy (2003, 65) who claims that the absence of characteristics typical for nomadic funeral rites within the burial complex may indicate its relation to the local communities (autochthonic farmers). On the other hand, the absence of such characteristics may suggest the influence of other factors like robbery or/and destruction of the burials and their incorrect recognition. Quite apart from the above-mentioned thesis it is vital to say that these specific burials take the highest rank in the hierarchy of burial places of autochthonous farmers. Within the III class, there were burial places of the representatives of the autochthonous elite. Verifying the characteristics of the graves of III class, it is crucial to say that they exhibit some common elements with the graves of I and II classes. The similarities can be observed in the complex construction and various sizes of the graves and the mounds, and the elements of the grave goods that included all categories of the artefacts typical for the nomadic elites of I and II classes (Tables 7-8). Furthermore, some of the graves (about 13%) exhibited the presence of accompanying human burials, typical for the upper classes. To conclude, it was established

that the funeral complexes of III class were burial places of members of the nomadic aristocracy and the autochthonous elite.

The presence of elements of armour and harness within the grave goods is an important factor in the process of determining the social position of the men buried within the complexes of III class. In light of the following observation, it was estimated that the men buried in the complexes of II class, were warriors ("troopers"). On the other hand, the presence of elements typical for the nomadic aristocracy of I and II classes allows some of them to be incorporated into the class of "elite troopers" (see Shelekhan 2016, 58-59). Analysing the burials of "troopers", it is necessary to stress the burials that can relate both to nomads and settlers. It is justified to assume that leaders of the autochthonic part of population buried in the graves of II class belonged to the so called "equestrian" aristocracy (see e.g. Kubczak 1978, 73-74; Bessonova 1999, 151). In accordance with the observations made by S. Bessonowa (1999, 151), the graves of the "equestrian" aristocracy are no different from the burials of nomadic "troopers". On the basis of the number of complexes characterized by the elements of nomadic funeral rite (at least 82% of the male burials of II class), it was established that most of the "elite chieftains" originated from the nomads (Scythian). The women buried within the complexes of II class were probably the members of the "equestrian" aristocracy and privileged nomadic women that took a similar place in the social hierarchy as the "elite troopers" (graves of aristocracy of a lower rank?).

The funeral complexes of "troopers" of the III class included not only the above-characterized graves, but also male burials of IV class that show some similarities with the graves of III class (size of burial construction, analogical character of the grave goods including weaponry and harness) (Table 7). Moreover, the accompanying human graves were observed in a few burials of that class (elements typical for burials of I and II classes, less frequently for graves of III class). Elements that distinguish graves of the IV class from the burials of the III class are as follows: a simpler grave construction, "poorer" burial inventory and a lower number of graves characterized by nomadic elements of funeral rite (about 32%).

Male graves of the V and VI classes (Table 7) and female graves of IV-VI classes (Table 8) took the next two places in the classification of graves of the forest-steppe zone of the Dnieperland of Early Scythian period. The relatively small sizes of the mounds and burial constructions, their complexity level (different sizes of burial pits and simple grave constructions), the not particularly varied burial grave goods indicate that the people buried in the complexes of this class took the middle place in the hierarchy of the examined population (the so called ordinary people) (see e.g. Shulzhenko 1987, 145; Bunytyn 1985; Boyko 1987, 177-178; 1991, 164-165; Moruzhenko 1991, 163; Buynov and Okatenko 2013, 131; Burghardt 2016a, 78-80, 82). This class was the largest and most varied part of the examined community (about 42.9% of all the complexes considered in this work). The complexity of this class was exhibited by the possible division of the class into smaller groups.

In the course of the comparative analysis carried out within the particular funeral complexes (Tables 7-8), it was established that the men buried in the graves of the V class, and

the women buried in the graves of the IV class were of a middle class. Certain characteristics of funeral rite observed among the graves of these two classes (the size of grave construction and the height of the mound, "the richness" of grave goods and the presence in some of them of artefacts typical for the graves of I-III classes), may suggest that the people buried in these graves were rich representatives of the middle class. The presence of various military items and horse riding equipment in the male graves suggest that the deceased were warriors. Moreover, among their grave goods were sets of weaponry (with elements of harness) typical for the graves of "troopers" of the III and IV classes. According to the following observation, the complexes of male graves of class V may be incorporated into the groups of burials of "troopers". The lower amount of work dedicated to the construction of the grave and "poorer" grave goods show that within that group there were men of a lower social position than the men buried in graves of III and IV classes. Furthermore, not every man buried in a grave of class V was a "trooper", as in some cases, among the grave goods only single elements of weaponry, mainly arrows, were present.

In the course of the interpretation of the male graves of V class and female graves of IV class it is necessary to take into account the ethnic and cultural belonging of the buried people. The analysis carried out on the basis of the presence of elements of a nomadic funeral rite, showed that such typical factors can be observed in every fifth grave (about 21.7%) of that class – these complexes are usually the burial places of "troopers". At the same time, the results of analysis exhibit the presence of elements of funeral rite typical for the agricultural part of society of an "old" forest-steppe origin. Such characteristics are the tradition of burying people in flat graves lacking kurgan mounds (see Skoriy 2003, 62-64). The situation could have been observed within several graves but only one, a female flat grave (Pol_1), was classified as a burial of IV class. In order to show some similarities between the complexes of examined classes and the autochthonic part of population, it was important to highlight the fact that 1/3 (30%) of the graves were located in cemeteries connected with forest-steppe farmers in the Medvin village in the basin of the Ros' River and village Machukhi, in the river basin of Vorskla (Grechko 2014, 12).

The social position of the people buried among the complexes of VI (male burials) and V-VI classes (female burials) was lower in the hierarchy of the population in question. The lower amount of work used for the burial construction and presence of a "poorer" content of grave goods (Tables 7-8) indicate that people buried in the graves of the above-mentioned classes occupied a lower place within the middle class, in comparison to the people buried in the graves of V and VI classes. In relation to that observation, it may be assumed that the buried people were part of the ordinary population. At the stage of analysing grave goods, an important feature of male graves was the presence of small sets of arrows or other elements of weaponry (spear and single axe-hammer), and sometimes (about 50% case) elements of harness. It allowed the observation that the men buried in the graves among complexes of VI class did not perform military functions. According to the literature on the subject (e.g. Moruzhenko 1991, 163; Buynov and Okatenko 2013, 131; Burghardt

2016a, 79, 82) in the system of social hierarchy, the members of the middle class (especially those of a lower rank) mostly dealt with cattle breeding, farming, and to a lesser extent with craft and trade. It is sensible to claim that such an interpretation model is accurate for the people buried in graves of V (female burials) and VI classes (and in some male graves of V class and female graves of IV class). However, I would only venture this as a suggestion and not as a statement of fact as there was not a single grave where the objects suggested this function of the deceased.

Burials of VII class took the lowest place in the classification of the funeral complexes of the examined population. The graves are characterized by their small size of burial construction, a small mound and "the poorest" or absent grave goods (Tables 7-8). In the light of this observation, it can be assumed that the people buried in the graves of this class were the poorest part of the examined society. An important fact is that people buried in graves of the VII class, as with the people buried in graves of the V (female burials) and VI classes, originated from the settled, agricultural population. The basis for this assumption is the presence of burials of a forest-steppe character (burying people in flat graves and a common cremation rite when only the body was cremated, not the burial construction, and the cremation ashes were placed in an urn – Skoriy 2003, 64-65). Moreover, it is also confirmed by the location of some of the burials in the cemeteries of forest-steppe farmers (Medvin and Machukhi), and the absence of characteristics typical for a nomadic funeral rite. However, the absence of particular features may be a result of robbery, devastation or the faulty methodology of excavations.

To conclude the discussion on the social stratification of the forest-steppe zone of the Dnieperland of Early Scythian period it is necessary to highlight two issues. Firstly, only a part of population was examined, an aspect connected with the commonly applied method of selection of the sources for analysis. The small number of complexes with an anthropological designation resulted in considering the presence of elements in relation to specific gender, as the gender determinants of sex of the deceased. However, the determinants of sex were not present in every grave, some of the burials (unrobed) included only the most common ones such as handmade vessels, iron knives and animal food (bone). Such artefacts were not gender indicators. The following group includes the unrobed graves with absent grave goods. The burials of that group are characterized by small and simple burial construction, low kurgan mounds of analogue size (and smaller) in comparison to the graves of VI and VII classes. In light of this observation it shall be assumed there are more graves with people belonging to the lower social class than it was estimated in the course of the following analyses. This assumption is justified by the results of the analysis of the certain burial complexes. In the course of research, at least 58 complexes with elements of funeral rite similarly to the burials of VI (Beres_44; Bob_37/1; Jarmol_46; G-G_314; Grusz_391; Kap_486; Konst_387; Kupl_4/8, 10/1, 10/3, 11/1, 12/3; Lub – 5/1945, 1-3, 5-9/1962; Macz_5, 7, 22, 31; Make_455; Medv1_19, 20, „Srednyj"; Osn_3; Ost_7, 474; Planiv_485; Skor_2-4, 7-8/1906, 25/1975; Tur_496; Vjab_118, 134/3, 136,

146/2, 161)) and VII (Kupl_2/8; Lub – 2, 4/1945, 1-4/1962, 4-5/1994; Macz_20; Ost_4, 11-12) classes (Bandurovskiy and Buynov 2000, 220-221; Boyko and Berestenev 2001, 15-18, 20-21, 45-47; Gorodcov 1911, 129, 140-141, 142; Ilinskaya 1968b, 57, 63; Kovpanenko 1970, 152, 153, 162, 165; Kovpanenko *et al.* 1989, 182-183, 196-197, 204-207, 220-221, 224-225, 226-231, 236-237, 242-243, 252-253, 260-261, 272-273, 280-283, 294-295, 298-299, 300-305, 308-309, 314-315, 322-323; Shramko 1994a).

Another group of funeral sources that can refer to a specific social unit, and plays an important role in the process of the social reconstruction of the examined population, may be distinguished. The group includes accompanying graves present among the burials of I-IV classes (21 grave complexes – see Tables 7-8), which in the literature of the subject are characterized (excluding sacrificial burials (see Bessonova 1992), for example the grave of a child buried under the threshold of the mound No. 1 from Andrushevka) as typical for the people dependent on other social groups (e.g. Boyko 1986, 36), referred to as domestic slaves described in *The Histories of Herodotus* (IV, 2) (see Gavrilyuk 2003, 80-81) and servants (see *The Histories of Herodotus*, IV, 71). Furthermore, it is necessary to mention that not all accompanying human burials, should be treated as burial places of the group of socially dependent people. This group incorporates the complexes where the function of the deceased is indicated by the position of the body (for example, the body orientation in opposition to the direction of the head of the main deceased (most commonly mentioned is the transversal position to the main axis of construction), location of the body at the legs of the main deceased or on the margins of the burial pit (even reaching outside the pit). Analysing other accompanying burials it may only be stated that the deceased exhibited some relation to the lower part of society (accompanying burials with a poor or absent grave goods) or to the middle class (for example the burial of "bodyguard"/"weapon keeper" (see Kubczak 1978, 112; Kovpanenko 1981, 74-75; Shelekhan 2016, 58) a grave of a rich woman from kurgan Sin_100; the females buried in the graves of representatives of upper classes from kurgans Bob_35, Sin_100 and Chervona Mogila).

6. SOCIAL STRATIFICATION OF THE POPULATION OF THE FOREST-STEPPE AREA OF THE DNIEPERLAND OF THE EARLY SCYTHIAN TIME-REGIONAL DIVERSITY

The last stage of the research of the social stratification of the population of the forest-steppe area of the Dnieperland of the Early Scythian time is the regional analysis. In the course of the above analyses, there was reference to the possible presence of regional diversities within the location of the distinguished classes of graves. In light of this observation it can be assumed that specific regions of the researched area could vary in social structure. In the following publication, only a certain number of graves located in the

researched area were taken into account and the results of the research may only indicate some tendencies, not the factual state. Such an observation is particularly important in case of the complexes from the region of Kiev. Eight out of ten explored burials may exhibit some reference to the nomadic aristocracy of various social status (rank). The other two graves are burial places of "troopers" related to the wealthy, ordinary part of population (BSz_1 and 2). There were no burials of people from the lower society classes among the analysed burial complexes in that area. However, at least one burial of "the poor" with characteristics typical for the graves of VII class can be observed in that region (Obukhov – Skoriy 2003, table 8, No. 24). In the region of Kiev, there is a considerable number of unexplored kurgans that share some characteristics with the burials of V-VII classes and were concentrated by mounds containing the graves of local representatives of higher society (see e.g. Kovpanenko *et al.* 1989, 139). It may be assumed that, the presence of burials that share similarities with the middle and the lower classes is more frequent than it has been estimated beforehand. Furthermore, it is possible that some people buried in the graves with the representatives of the nomadic aristocracy (four complexes) came from the middle class of a lower rank (graves of VI class) and "the poorest".

Graves of the I and II classes occurred three times in the basin of Ros' River (9.4% of all burial complexes observed in that area, including the five complexes with graves of VI class). However, not a single grave was identified as a burial place of a local leader (chieftain or *nomarch*). The graves were considered burial places of either a leader of a squad (Steb) connected with the earliest occurrence stage of the Scythian nomads in the forest-steppe zone of the Dnieperland (Skoriy 2003, 75-77), or of women – "priestesses/diviner" of a high social position (representatives or leaders of the ruling tribes?) (Bob_35 and Sin_100). Eight (25%) of the graves of III and IV classes (male burials) with burial places of "elite troopers" and "nomad women" of a similar social position, and the members of locally settled "equestrian" aristocracy, may be taken as the burial places of higher society. More than half (56.3%) of the researched complexes from the basin of Ros' River are the graves of the "ordinary population" of IV (female burials), V and VI classes (including the graves with unidentified gender and exhibiting characteristics similar to those of VI class). Three graves (9.4%) with burial places of "the poor" close up the list. A common thread for the graves of the lower social class is the absence of burial places with a nomadic funeral rite and the location of some of them (66.7%) in the cemeteries of the nearby Medvin village that may be related with the autochthonic, agricultural community. Consequently, it may be assumed that the members of this part of the researched population could have originated from the local agricultural community. The lowest place in the social hierarchy was represented by people buried in the graves of representatives of the upper class (at least two complexes of I and II classes).

In respect to social structure, far-reaching similarities are visible between the communities from the basin of Ros' River and Early Scythian populations from the southern zone of forest-steppe Right-Bank (basin of Tiasmyn River and an interfluve of the Tiasmyn and

Great Wysia). The complexes of I and II classes with the graves of representatives of the highest class of nomadic "aristocracy" were found four times (8%). Within that group we can distinguish three complexes from various periods of time (?), recognized as the burial places of local leaders (Zab_524, Zur_406 and RepM/2). Moreover, at least ten (20%) graves of "elite troopers" of III (including the ones where male burials of III class were accompanied by female burials of II class) and IV classes may be considered as burial places of the nomadic aristocracy. The other seven (19%) complexes of both classes may probably be considered burial places of local higher society such as the "equestrian" aristocracy. The middle class representatives were the largest part (44%) of the researched population, and their graves were present in 22 complexes of IV, V and VI classes (including the accompanying graves of unknown sex), whereas only one burial contained grave goods typical for nomadic funeral rite (burial of V class from G-G_319). The other seven complexes (14%) included burials of VII class considered to be "the poorest" part of the forest-steppe communities. The lowest place in the social hierarchy was occupied by people buried in the graves of representatives of the upper class (the members of lower classes including dependent people). The burials of these social groups were observed within at least six complexes of I-IV classes (male burials).

With respect to social stratification, the most distinctive region of the forest-steppe zone of the Dnieperland is the Left-Bank of the Dnieper Terrace Forest-Steppe. In the course of the analysis of the graves located in that area, it was established that all of them were the burial places of "elite troopers" and women of various ranks. A detailed analysis exhibited an individual grave of I class (RobM), two graves of II class with a burial place of "elite troopers" (Glad_3/1) and a nomadic noblewoman (Glad_449) and three graves of III class where two were burial places of "elite troopers" (Glad_4 and Vere_3) and one of a nomadic noblewoman of the lowest (?) rank (Volo-2_1).

The basin of the Sula River is described in literature (e.g. Ilinskaya 1968b, 67, 179, 186-187; Kubczak 1978, 78; Ilinskaya and Terenozhkin 1983, 316) as a burial place of "troopers" of different ranks. The results of frequency analysis carried out to present the occurrence of burials of various social classes, allowed an image of the social stratification of the population from the above-mentioned area to be outlined. The highest place in the society was represented by local leaders (chieftains or *nomarchs*) buried in the two, most distinctive complexes of II class (AksSV_1; Volk_Shumeyko). The other five complexes of the same class (8.8%) were graves of "elite chieftains" of the highest rank and an individual grave of a woman with a high social position (noblewoman). The burial places of "elite troopers" and women of the same status were also found in graves of the III class (fifty complexes). Male burials of the IV class may relate to the group of "troopers" (and local "equestrian" aristocracy). About 24.6% of burial complexes may refer to the burial places of "troopers" of high and middle rank, women with a similar social status (six complexes with individual female burials of III class) and local "equestrian" aristocracy. Among the 29 graves (50.9%) of the IV class (female burials) and V-VII classes there were burial places

of middle class society (ordinary population) and various ranks, and of "troopers" that took the lowest place in the hierarchy of the "troopers" graves.

The social stratification of the population inhabiting the basins of the Vorskla and Donets Rivers varies in a number of aspects from the above analysis. In that particular case, burial complexes of I and II classes could not be identified. Nevertheless, individual burial complexes with unidentified gender were observed. Based on the similarities between these complexes and the burial groups of I and II classes from other regions (large sizes of kurgan mounds and the grave constructions) it can be assumed that they were the burial places of the leaders (chieftains? *nomarchs*?) of local communities. An example of such a grave in the area of the Vorskla river basin is probably the grave beneath the kurgan mound known as "Great Scorobor". At least 11 (14.1%) graves of the III and IV classes, characterized by at least two elements of the Iranian funeral rite and some elements typical for the nomadic high society funeral rite (accompanying human burials, relatively rich grave goods with a statutory object), may be associated with the nomadic aristocracy overruling the local population. The other nine complexes of the III and IV classes (male burials), and an individual male burial of the V class (Lich_8) with the mound height similar to the ones typical for III and IV classes graves, could be recognized as the burial places of the local "equestrian" aristocracy. Consequently, the number ratio between the graves associated with nomadic and autochthonic upper classes is relatively similar (14.1 and 12.8% respectively). The largest part of the population inhabiting the area of the Vorskla river basin was represented by middle class society of different ranks – burials of the middle class were found in 48 (61.5%) complexes of the IV (female burials), V and VI classes (including the complexes with characteristics typical for that class and of unidentified sex). Half of the above-mentioned complexes were located in one cemetery (Machukhy) associated with the burial places of local farmers. The presence of elements typical for a nomadic funeral rite was observed among two complexes with graves of the V class and those associated with the burial places of "troopers". Characteristics such as the presence of individual female graves, or graves where the woman is the main deceased, indicate that the burials belonged to people of the middle class. These elements were present in 80.6% of the complexes of a specific gender. The graves of "the poorest" part of the researched population were present in nine (11.5%) burial complexes, where two of them were flat graves. The lowest place in the social hierarchy of the Early Scythian population of the Vorskla river basin area was taken by the members of lowest class (including dependent people?) that may be identified with the accompanying human burials. In total, such graves were observed in at least four complexes.

Only a few graves located in the area of the Donets basin could be identified with the higher society. Burials exhibiting some connection to the elites included two II class graves from cemeteries in the area of Lyubotinian hillfort (kurgans No. 10/1962 of the central Lyubotinian group and No.1 from the Karavan group) and two male and female burials of II class from the central group of Lyubotinian necropolis (Lub_2 and 3/1994). With respect

to the fact that the graves were robbed and partly destroyed, it is not possible to fully determine their nature. However, the absence of nomadic characteristics of funeral rite may suggest their relation to the autochthonic elites ("equestrian" aristocracy) (if the thesis concerning the belonging of the graves lacking the nomadic features of funeral rite to the local group of farmers is correct). On the other hand, it is justified to connect an individual male grave from the kurgan Nr. 3 of Malay Rogozyanka group with the nomadic higher social class (?). In the course of the research that burial complex was included in the group of graves of the V class (male burials), however following the process of comparison with other graves of the researched area, it exhibited more similarities to burials of the III class, rather than of the V (considering the elements of burial rite; similar size and complexity of burial construction). Compared to other regions, the largest (about 50%) class within the researched population was the middle class (ordinary population). In the light of the above analysis, it is necessary to mention that only individual female burials of the IV and VI class (four complexes in total) and complexes (nine graves) with burials of unidentified sex where the size of kurgan mound and the manner of its construction was similar to complexes of the VI class, could be associated with the middle class. Another characteristic of societies who make use of cemeteries in the basin of the Donets is the frequent occurrence of graves with features close to those of the VII class. The presence of such graves is about 30.8%, making it three times higher than in other regions where the burials were observed in 9-15% of the complexes. However, graves of that character exhibit signs of robbery, which may suggest that they used to be "richer" in grave goods. Consequently, it would be justified to include at least some of the graves in the group of burials connected with middle class. Only the graves with an absent burial artefact or individual artefacts with no signs of robbery could be perceived as burials of members of the lower social class ("the poorest"). To finish the considerations on the social stratification of Early Scythian population of the Donets river basin, it shall be noticed that the absence of nomadic funeral rite elements within the complexes of V-VII classes indicates their relation to the autochthonic communities (if the thesis concerning the belonging of the graves lacking the nomadic features of funeral rite to the local group of farmers is correct).

7. CONCLUSIONS

To conclude the considerations on the social stratification of the populations of the forest-steppe zone of the Dnieperland in the Early Scythian period, it should be mentioned that the observations made in the course of the research carried out in this paper (research results and the interpretation) are only relevant in accordance to the fact, that the data gathered in the process of cemeteries' exploration may not be adequate to the factual state. The results of the analysis carried out in this paper may be split into those referring to the funeral rite as the recognition of the social structure of the studied population and the interpretation of the results. In case of the Early Scythian populations of the forest-steppe

zone of the Dnieperland, just as in the case of other communities of Early Scythian Culture, it is justified to treat the funeral rite as a source for the recognition of the social structure. Determining the amount of work used for preparing the burial (reflected by the size and complexity of the grave) and the richness of accompanying grave goods (especially the number of categories of artefacts) are the most important criteria for the assessment of the social position of the deceased.

Another important conclusion is the heterogeneity of the social structure of the studied population. In the course of analyses carried out in this paper it was established that the social structure of the researched population was not homogenous and split up into smaller social groups differentiated by social status, function and wealth. The differentiation of the funeral complexes in light of the archaeological sources parallel to their grouping in some larger sets (groups and classes of graves reflects the complexity of the social structure of the population. By the use of the statistical model of deduction, the analysed material was divided into several groups and formed seven main classes. The classes of graves distinguished by the method of deduction were arranged according to the social hierarchy, that is in such a way that the transition to the subsequent classes is connected with the decreased amount of work used to build the burial construction and the burial mound, and the grave goods becoming "poorer". On the basis of the distinguished grave complexes and data referring to the social differentiation of the Scythian groups (of Scythian cultural model), a multistage social stratification system was established. Consequently, the highest place in the social hierarchy was taken by members of the nomadic aristocracy. This group is divided into smaller sets, whereas the highest place within that and any other social groups belongs to the leaders of social formations (the chieftains and leaders; Herodotus' *nomarchs*?) connected with the specific area of the forest-steppe zone of the Dnieperland. "Elite troopers" with the highest rank and members of the ancestral and tribal aristocracy, including the relatives of the ruling family, took up a lower place in the hierarchy. In the subsequent place in the hierarchy were "elite troopers" originating from the nomads of higher society (and nomad women of the same social status) and the members of the "equestrian" aristocracy. The middle class ("ordinary population") was ranked in the middle place whilst their members originated from the nomads (their relatives) and from the agricultural part of society. It was shown that this class was not homogenous and was divided into two smaller groups: privileged "troopers" (and wealthy women with a similar social status) and the remaining part of the ordinary population with a lower rank. One of the lowest positions within the social system belonged to "the poorest", and finally the last in the hierarchy were the people buried in the graves of representatives of upper class (the members of lower classes including dependent people with limited rights?). On the basis of the observed funeral rite it was observed that the members of the lower class (starting from the middle class of the lower rank) originated from the agricultural part of society (autochthons).

The final observation made in the course of the research is the fact that Early-Scythian groups of people from various regions of forest steppe zone of the Dnieperland were distin-

guished on the basis of social stratification. The following regions should be mentioned: Left-Bank of the Dnieper Terrace Forest-Steppe including the burials of "elite troopers" and burials of women of a similar social status, the basin of the Sula River with the burials of not only "troopers" but graves relating to other social classes, the central basin of the Vorskla River and Donets with frequently observed burial places of middle and lower class populations originating from the local communities and relatively few burials of people with the nomadic higher class origin. The graves located in the cemeteries in the right bank part of the forest-steppe of the Dnieperland are observed to be mostly diverse in the light of social stratification. The diversity of the above-mentioned region is reflected by the presence of all (almost all) separated social classes starting with the upper class (the elite) in the type of nomadic aristocracy of the highest and middle rank, "elite troopers" and the local "equestrian" aristocracy, then subsequently the largest group of the middle class with representatives of various ranks and finally the poorest, autochthonic part of society and people buried in the graves of representatives of upper class. In the northern part of the right bank of the forest-steppe zone of the Dnieperland, a prevailing number of burials with members of nomadic upper class can be observed (the large number of graves within that class is rather a reflection of the research results rather than the actual state of affairs). To sum up the observation about regional diversity within the social structure of the Early Scythian population of the forest-steppe zone of the Dnieperland, it is necessary to refer to the location of the cemetery complexes used solely by farmers (Poltava and Machukhy from the basin of the Vorskla River, Medvin from the basin of the Ros' River) outside the main cemetery groups of an Early Scythian nature with the burials of the nomads.

Appendix No. 1.

The list of sites with burial complexes of the forest-steppe zone of the Dnieperland considered within the analyses (comp. Table 1).

the area of Kiev:

1. Andr – *Andrushevka* (Voroncov, Skoryy 2012); **2.** BSz – *Balyko-Shchuchinka* (Chernenko 1964, 36-38); **3.** Ercz – *Erchiki* (Neyman 1884, 33-34); **4.** Glev – *Gelvakha* (Terenozhkin 1954); **5.** Ivan – *Yvankovychi* (Skoriy *et al.* 2001; Bilan, and Soltis 2014); **6.** MalOf – *Mala Ofirna* (Petrovska 1968); **7.** Perep – *Perepytikha* (Skoriy 1990); **8.** Trip – *Tripole* (Maksimov and Petrovskiy 2008, 25-26);

Ros' River basin:

9. Beres – *Beresnygi* (Bobrinskiy 1901, 93, 101, 118-120, 134; Brandenburg 1908, 101-104; Kovpanenko 1981, 7-12); **10.** Bob – *Bobrica* (Bobrinskiy 1901, 112-115, 116-117, 135-136; Kovpanenko 1981, 13-19); **11.** Hodor – *Khodorov* (Brandenburg 1908, 123-124; Galanina 1977, 17; Kovpanenko 1981, 55); **12.** Jasno – *Ysnozore* (Kovpanenko *et al.* 1994, 52-60);

13. Kur – *Kurilovka* (Kovpanenko 1981, 26-27, 33-35); **14.** Laz – *Lazurcy* (Kovpanenko 1981, 34-35); **15.** Med – *Medvin*, gr. I-III (Kovpanenko 1977, 45-51, 56-65; Levchenko *et al.* 2015, 206, 209-212); **16.** Sin – *Sinyvka* (Kovpanenko 1981, 51-52); **17.** Steb – *Steblev* (Klochko an Skoriy 1993); **18.** Stud – *Studenec* (Kovpanenko 1981, 55);

Tiasmin River basin:

19. Fl_CzM – *Flyrkovka, kurhan Khervona Mogila* (Kovpanenko 1984); **20.** G-G – *Gulyj-Gorod* (Bobrinskiy 1887, 102-104, 106; Bobrinskiy 1901, 44; Ilinskaya 1975, 14-17); **21.** Kap – *Kapitanovka* (Bobrinskiy 1910, 59, 66-67; Kovpanenko *et al.* 1989, 250-251, 320-321); **22.** Konst – *Konstantinovka* (Ilinskaya 1975, 29); **23.** Make – *Makeevka* (Ilinskaya 1975, 32-33; Kovpanenko *et al.* 1989, 218-221, 294-297); **24.** Ost – *Ostinyzhka* (Ilinskaya 1975, 36); **25.** RepM – *Repykhtova Mogila* (Ilinskaya *et al.* 1980, 33-54); **26.** Ryz – *Ryzhanovka* (*Ilinskaya* 1975, 39); **27.** Tek – *Teklino* (*Ilinskaya* 1975, 41); **28.** Tur – *Turiy* (*Ilinskaya* 1975, 51-53); **29.** Vjab – *Velikay Yblonovka* (*Ilinskaya* 1975, 45, 47-49); **30.** Zab – *Zhabotin* (*Ilinskaya* 1975, 20); **31.** ZahM – *Zakhareykova Mogila* (Ilinskaya *et al.* 1980, 54-63); **32.** Zur – *Zhurovka* (Bobrinskiy 1905a, 30-32; 1905b, 92-94; Ilinskaya 1975, 22-27; Mogilov and Didenko 2009);

Left-Bank of the Dnieper Terrace Forest-Steppe:

33. Glad – *Gladkovshchina* (Galanina 1977, 38; Grigorev and Skoriy 2012); **34.** RobM – *Roblena Mogila* (Grigorev 1995, 59-60); **35.** Vere – *Veremivka* (Ilinskaya 1968b, 158); **36.** Volo-2 – *Vološinoe-2* (Kulatova *et al.* 2006).

Sula River basin:

37. Aks – *Aksyutincy* (SV – uroczysko Staykin Verkh; Sol – uroczysko Solodka); **38.** Jar – *Yarmolincy*; **39.** Bas – *Basovka*; **40.** Geres – *Gerasimovka*; **41.** Luki; **42.** Plav – *Plavnishchi*;

43. Pop – *Popovka*; **44.** Prov – *Provale*; **45.** SurmKr – *Surmachivka*, *uroczysko Kruglik*; **46.** Volk – *Volkovcy* (all assambleges – Ilinskaya 1968a, 147-154; 1968b);

Psel River basin:

47. Baran – *Baranovka* (Kulatova *et al.* 1993, 84-89); **48.** Brov – *Brovarki* (Ilinskaya 1957, 236; Gavrish 1998, 30-31);

Vorskla River basin:

49. Karp – *Karpusy* (Suprunenko et al. 1996, 24-34, 47-53); **50.** Kirin – *Kirinkivka* (Melnik 1905, 711, 715); **51.** Kupl – *Kuplevakha* (Boyko and Berestenev 2001, 16-21, 25-33, 37-38, 47); **52.** Lich – *Likhachevka* (Zaharov 1932, 63-64, 72-74; Moruzhenko 1985, 322-323); **53.** MTro – *Maliy Trostynec* (Geyko 2001, s. 97); **54.** Macz – *Machukhi* (Kovpanenko 1970, 151-156, 159-169); **55.** Mar – *Marchenki* (5p – „5 pole", 8p – „8 pole") (Chrernenko *et. al.* 2004, 27-30; Chernenko *et al.* 2005, 53-57; Makhortykh *et al.* 2006, 6-12, 82-89); **56.** Osn – *Osnygi* (Gorodcov 1911, 128); **57.** Per – *Pershchepino* (Shramko 1994b, 127-128; Murzin *et al.* 1995, 63-66); **58.** Pol – *Poltava*, gr. 1-4 (Suprunenko 2016); **59.** Prim – *Peremierki* (Kulatova and Suprunenko 2010, 12-25); **60.** Skor – *Sko-*

robor (Gorodcov 1911, 141-143; Shramko 1994a, 103-108, 118-119; Shramko, Zadnikov 2014, 39-41; 2015a; 2015b; Szramko 2015);

Donets River basin:

61. Czer – *Cheremuchnoe* (Liberov 1961, s. 105-106); **62.** Lub – *Lyubotin* (Bandurovskiy and Buynov 2000, 220-221); **63.** MalR-1 – *Malaya Rogozynka-1* (Buynov 1990; Bandurovskiy and Buynov 2000, 220-224).

Appendix No. 2.

Elements of the burial rite characteristic for the Early Scythian populations of the forest-steppe zone of the Dnieperland.

I. The sizes of kurgan mounds (height) and burial constructions (surface, depth and dimensions) and burial location.

All the characteristics referring to size were based on the average size of kurgan mounds (height) and the burial constructions located beneath them. The size groups were distinguished: "minimal" (in comparison to the average size); "large" (twice bigger than the average) and "very large" (at least twice the average). With reference to the depth of the burial pits and the length of dromos, two groups were observed; of "minimal" and "large" size respectively:

1 – a mound up to 2.3 m; **2** – a mound of a height between: 2.31 and 4.6 m; **3** – a mound higher than 4.6 m; **4** – inlet burial (the burial located within the kurgan mound); **5** – flat grave; **6** – a burial construction a surface with up to 10 m^2; **7** – a burial construction between 10.1 and 20 m^2, **8** – a surface a burial construction bigger than 20 m^2; **9** – a burial in the former surface of a soil; **10** – a burial with a pit 1.5 m deep; **11** – a burial with a pit deeper than 1.5 m;

II. Secondary constructional elements within the area of a mound and the grave:

12 – a ditch/dyke surrounding the mound; **13** – a tent-like structure over the grave; **14** – wooden facing of the walls (the absence or presence of an element allowing two kinds of burial constructions to be distinguished: constructions with wooden facing of the wall and simple, underground burial pits (burial constructions located directly in the former ground); **15** – additional resistance pillars (excluding the pillars that constituted the elementary part of the wooden facing of the walls); **16** – wooden floor/bridge; **17** – 1.5 m. long dromos; **18** – a dromos longer than 1.5 m;

III. Categories of grave goods:

19 – arrowheads; **20** – spear; **21** – cutting weapon; **22** – blunt weapon; **23** – armour; **24** – harness; **25** – bronze poletops/sacrificial knives; **26** – handmade vessels; **27** – sacrificial (animal) foods (bones); **28** – knives (excluding the graves with the knives present

by the animal food); **29** – tools and everyday life artefact other than knives and spindle whorls; **30** – imported clay vessels (amphorae, blacked-glazed vessels and other wheel-made on pottery); **31** – bronze vessels; **32** – sulphur and/or realgar; **33** – 1-2 beads; **34** – sets of beads (necklaces and bracelets, beads on the parts of clothing and bedspreads and capes); **35** – metal bracelets; **36** – pins; **37** – earrings; **38** – ornaments (jewellery) made of precious materials and their alloys; **39** – golden plates/applications of clothing and headdress; **40** – mirrors; **41** – stone plates/platters; **42** – dyes; **43** – spindle whorls; **44** – artefact made of precious materials and their alloys, other than clothes ornaments or decorations.

IV. Traces of ritual actions:

45 – funeral feast (trizna); **46** – rituals connected with fire other than placing sulphur, realgar and dyes in the grave (see Makhortykh 2013, 225, 227-228).

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