

REVIEWS AND SHORT REVIEW NOTES

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(review) Seweryn Rzepecki, Wilkostowo 23/24. *Neolityczny kompleks osadniczy* [Wilkostowo 23/24. *Neolithic settlement*]. Vol. 1. *Tekst* [Text], Vol. 2. *Katalog źródeł* [Remains Catalogue] (= *Spatium Archaeologicum* 8). Łódź, Instytut Archeologii Uniwersytetu Łódzkiego, Fundacja Uniwersytetu Łódzkiego 2014, 599 pages, 353 figures and 51 tables in the text and 361 plates, summary in English.

The monograph of Wilkostowo site no. 23/24 was published as the eighth volume of series by *Spatium Archaeologicum*, dedicated to present the problems which are particularly interesting for modern archaeology. This impressive work was divided into 2 volumes. All the analyses, comments, illustrations and tables are included in the volume I (text), while the volume II (remains catalogue) contains 361 plates which present the selection of immovable objects and pottery materials. The remains catalogue also includes a CD with tabular presentation of the data. The division of the work into two volumes is very convenient for readers. Given a monograph of this caliber, gathering all the information in only one book is out of question. There are 20 chapters in the volume I and most of them are written by Seweryn Rzepecki while other authors present specialist analyses. The cooperation with specialists in various fields of archaeology as well as with specialists in related sciences has enriched the work significantly. An extensive bibliography, including foreign publications closes the work. There is also a summary in English and the authors' addresses attached to the monograph.

In the introductory chapter, the author determines the scope of the publication. Its purpose is to present the sources acquired during the archeological research in Wilkostowo site no. 23/24, which are connected with The Funnel Beaker Culture (TRB) and The Globular Amphora Culture (GAC), and, what is more important, to carry out the detailed analysis of the sources. The introductory chapter contains information on the history of Wilkostowo site and Tążyńska river basin archaeological research. The author also presents the methodological norms used during the research and the layout of the book.

All the basic data covering the geological factors related to the site and the adjacent area was included in the chapter written by Jacek Forsyśiak and Juliusz Twardy. Apart from the description of the surface of geological structure and the stages of the lie of the land forming, the important purpose of the research was also to determine the processes which caused the differences in the state of preservation of the sources from different parts of the site.

The next chapter, titled „Register of the data — movable and immovable features” contains the list of the sources acquired during the research, presented in the form of two tables. The list is provided with a short introduction which informs about the general number of all the artifacts and immovable objects. Both tables have clear layout and provide all the necessary information. The first one shows the amount and weight of TRB and GAC pottery and pugging and also the number of flint artifacts, stone artifacts and animal bones found in the excavation units. The second table presents the most important information about the objects (function, shape of projection and profile, type of the fill and size) and it is used as the data source in the following chapter which contains the descriptions of objects and layers.

In the fourth chapter, apart from the detailed analysis of immovables, the author raises the problem of the site's state of preservation. Small amount of the material dated to younger prehistoric cultures, the Middle Ages and early modern period indicates little changes related to these periods. Therefore, the author focused on presenting the late modern period and contemporary transformation of the land. In his analysis he used the data obtained from maps comparison, aerial photographs as well as electromagnetic and laser scanning. The land transformation was not only caused by the anthropogenic factors but also it was the result of the natural soil formation processes like bioturbation or frost action. Such a detailed analysis is very effective (cf. Koško, Szmyt 2006). Unfortunately, the problem of site transformation is usually discussed very briefly. In the next part of the chapter the author discusses the layout of the material in the humus and in the culture layer level. The latter is investigated with the use of GIS analysis to create density maps. Based on the maps, the author separates 28 clusters of TRB pottery. He uses the same method to determine the location of GAC pottery and pugging. There are two concentrations of pottery and 14 concentrations of pugging. The observations are provided with plenty of illustrations showing density maps and the concentrations.

In the next part of the work, the author discusses the objects categories, dividing them into post-holes and pole-pits, utility pits and rubbles of pugging. Within the first group, separated according to the size of the roof (below 0.5 m²), the detailed description of pole-holes and pole-pits is presented. The materials from them and their possible connection with post frame houses were mentioned. In the subsection on utility pits, the pits were divided according to their purposes, the division was based on the shapes of the profiles and the size on the roof level. The author distinguishes there: pits of unclear function with basin-shaped profile, storage pits with rectangular profile and large sandpits with basin-

shaped or irregular profiles. Rubbles of pugging were another category and they were characterized by the layer of debris (several to dozen centimeters thick), made of destroyed walls.

Taking the stratigraphy and the vertical layout of pottery in objects into consideration, the author discusses, in the next part, the problem of garbage pits identification (the problem of reused utility pits). He refers to the methods proposed by Sławomir Kadrow (1991). Analyzing the quantity, weigh and granularity, Rzepecki reconstructs the creation process of given objects.

In the next part, the author characterizes the ground objects (post frame houses, roofed utility structures and fencing). Eleven functional arrangements were separated, including the categories of objects mentioned above. At the end of the fourth chapter, the author once again analyzes the pottery layout in the objects but only in those with TRB and GAC materials. Based on his observations, he formulates the hypothesis that the TRB and GAC pottery deposition was simultaneous.

In the fifth chapter, the author presents an extensive analysis of pottery technology, morphology and ornamentation. The research on technological standards was carried out with the use of the method created by Lech Czerniak and Aleksander Koško (1980; Koško 1981), and supplemented by the author (Rzepecki 2004). The key premise for this type of analyses is to create a list of groups of techniques used in pottery-making and the macroscopic features of the techniques (Czerniak, Koško 1980). For the author, the most important features determining a technology are: the type, granulometry and the amount of admixture as well as the vessel wall thickness, firing type and surface type. When it comes to ornamentation analysis, the author uses the methods created by Jacek Górski (2007), who based the ornamental motives typology on distinguishing of ornamentation group types. The indicators, when it comes to materials from Wilkostowo, were the location, shape and the first class and second class ornamental element parameters. The author used them to distinguish and characterize twenty eight groups (G1-G28) and indicated the directions of adaptation of the group's features. This part of the book is provided with plenty of illustrations which present the examples of ornamentation (ornamentation groups) and its dispersion within the site. Analyzing the morphology of vessels the author decided to use the classification method proposed by Koško (1981). The author determined the forms of 715 vessels, dividing them into 10 categories (funnel beakers, mortar beakers, two-piece amphoras, one-piece amphoras, collared flasks, pots, bowls, vases, jugs and cups). He also mentioned that the material was very often fragmented, which limited the number of identified vessels. That is why some of them were discussed together (e.g. bowls/vases). Apart from characterizing the types of vessels found in Wilkostowo, Rzepecki also presented the layout of the vessels within culture layer and objects and he gave closer and further analogies.

Referring to the relative chronology of the discovered materials, the author emphasizes the uniqueness of the site, compared to the other settlements in Kujawy, dated to be

Wiórek phase. The site is unique because of its size (over 1 ha), its state of preservation, and also the great number of found materials (46 581 fragments of pottery from the cultural layer and the objects). Using the topogenesis analysis model (Koško 1981), the author connects chosen features of technology, morphology and ornamentation with the following components: early Wiórek, Wiórek, Little Poland, sub-Neolithic, and Great Poland. He also carries out the spatial analysis of the features, showing their even distribution and formulating hypothesis that all the materials are connected with the turn of phases IIIB-C and IIIC of TRB in Kujawy. Testing this hypothesis, in the next chapter, the author carries out comparative analysis of the pottery assemblages from the objects and he also compares the separated concentrations from the culture layer. With the help of methods used in statistics, he divides the materials with the features related to the components mentioned earlier into five clusters. Analyzing these units (clusters A-E), Rzepecki does not indicate unambiguously if the site in Wilkostowo is connected with one or more phases. Comparing the layout of objects and rubbles of pugging in the arrangements connected with some of the houses he suggests that the typo-chronology might not be fully reliable.

In the next chapter the author presents a small collection of non-vessel pottery, including: spindle whorls, spoons, miniature axes, weaving weight and zoomorphic depictions. The chapter is provided with a short comment and proper figures.

As the monograph continues (chapter 7) Rzepecki analyzes the humble (compared to the amount of TRB material) collection of GAC pottery, also discovered in Wilkostowo. As well as with TRB materials, the analysis was carried out using the three-step description model (technology, morphology, ornamentation). Small number of distinctive features, obviously, prevented the author from formulating detailed conclusions. He decided however, to estimate the chronology of the mentioned arrangement and he indicated that it is connected with the IIa phase of GAC.

The key part of the monograph is the chapter on the absolute chronology of the TRB and GAC settlement on the discussed site. The impressive number of radiocarbon dates, forty in total, was obtained from Wilkostowo materials. The dates were made on samples of bones found in the objects. The large number of dates once again shows the disproportion between Wilkostowo and the rest of sites in Kujawy. Rzepecki, discussing the relative chronology of the site, mentioned the need for the confrontation of the results of the earlier research and the radiocarbon analysis data. That is why he used the pottery taxonomy analysis results and the information on the fills of the objects and the relations between them to create chronological models. The obtained data let the author carry out several simulations and create four hypothetical chronological models for TRB occupation and one for GAC occupation. The models which describe the „beaker” settlement indicate different possible duration of the settlement in Wilkostowo (200–300 years for A1-A3 models or approx. 75 years for A4 model, and, according to the author, the last one is the most probable). In all of the cases, however, they confirm the one-phase and continuity

hypothesis. The simulations carried out for „amphora” settlement indicate that these people were contemporary with TRB and that their stay on the site was short.

In the ninth chapter, the materials from the younger period are briefly characterized. Apart from vessels related to the Corded Ware culture and Iwno culture, fragments related to early medieval and modern populations were found in the cultural layer.

The author makes some comments on detailed (microscopic) analysis of pugging, as an introduction to the next chapter. Based on macroscopic analysis, he characterizes the building material found within the separated concentrations and objects. Using the method proposed by Koško and Marzena Szmyt (2007) he determines the type of admixture and identifies the traces of imprints and polishing.

The next group of artifacts from Wilkostowo are flint materials. Lucyna Domańska is the author of this chapter. She, similarly to what Rzepecki did analyzing pottery and pugging, presents the map of density and she uses it to distinguish 7 concentrations of flint material. Because of the lack of difference among them, and the lack of difference between them and the other material, two so called trial areas were separated and characterized. No differences in quantitative and quality structure of the materials were noted in this case as well. Next, the author characterizes the inventory in terms of chronology and culture, distinguishing Paleolithic and Mesolithic flint products and materials connected with TRB and GAC. TRB artifacts are of course characterized in the most detailed way. The author describes the raw material structure of the artifacts made with the use of flint working techniques, and she also characterizes other categories of tool and non-tool forms. Summing up, she draws attention to the uniqueness of the collection from Wilkostowo, which has become the most important point of reference, when it comes to Kujawy assemblages. The collection was used by Domańska (2013) to define the characteristics of classic Wiórek model of flint working.

The discussion on TRB flint materials is provided with the comments of Małgorzata Winiarska-Kabacińska concerning the traces of use noticed on some of the artifacts. Thanks to the trace evidence examination the functions of given artifacts were discovered. The traces of tanning, cutting and scrubbing of bones, antlers, plants and wood were discovered. The chapter contains a table with the list of the artifacts with the traces of use and proper figures (also microscopic and macroscopic photographs).

Tabular presentation is also the base of the typology and raw material characteristics of stone artifacts which are the subject of the next chapter. Marcin Szydłowski and Rzepecki, analyzing the mentioned table, present the structure of the tools from the assemblage and distinguish: hammer-grinding stones, querns, footings, polishing stones, grinding stones and tools with separated edge. Among the last ones, axes, a fragment of a shaft-hole axe and a recycled LBK coultter or adz were separated. The presented categorization of the sources refers to the method proposed by Piotr Chachlikowski (1997) in the monograph on late Neolithic Kujawy communities stone tool production. In the next part of the book, the authors present raw material composition of the obtained stone artifacts. The raw material

was assessed with the use of macroscopic examination and also, when doubts appeared, with microscopic cut analysis. The authors focus especially on the imported raw materials, which were used to make some of the tools with separated edge. They show the importance of these raw materials in terms of their quality as well as their uniqueness. The chapter is provided with a comment on the scatter pattern analysis and a short summary.

In the short fourteenth chapter, Rzepecki informs about the amber artifact discovered in Wilkostowo. It is destroyed to the point where its identification is impossible. The author suggests only that it might be a fragment of a bead.

The next two chapters, written by Kamila Waszczuk, cover the numerous animal bones discovered on the site. The first presents the results of archaeozoological analysis, while the second one discusses the tools made of animal bones, teeth and antlers. Before the results are presented, the author provides the reader with a short introduction and the information about the research methods used. The detailed data concerning: the amount and type of given species remains, the number, the age of the animals and the osteometric analysis was presented in tables and figures. In the rest of the chapter, the author discusses the research results and, comparing them with data from other sites, she presents the breeding tendencies in the I–V phases of TRB. In this context, she discusses the economy of TRB occupation from Wilkostowo. She indicates the importance of breeding in food supply, but she also mentions different ways of obtaining animal protein, like gathering, fishing or hunting. Another advantage of the archeozoological analysis are taphonomy-related observations made by the author. The traces related to the obtaining and preparing of the meat were carefully characterized in one of the subsections. The author presented the description of the whole process from skinning the animal through meat consumption to dealing with the post-consumption remains. Doing it, she also thoroughly analyzed the remains with traces of fire. Waszczuk, quoting other sources, indicates that burnt bones might have been used as an additional source of calcium and phosphorus. They also might have been the leftovers produced during marrow roasting or during preparing the bones to be used as an admixture in pottery. The suggestion that the bones might have been used as fuel is also interesting. The comprehensive description of the bones found in Wilkostowo is supplemented with the chapter on the tools made of teeth and antlers. In the small collection of the tools of this type, the author separated the tools used to work with organic materials (chisels or adzes, awls/perforators) and the tools used during pottery production (polishing paddle, polishing stone, thorn-type tool). In two cases the function of the tools was not determined, however the artifact made of antlers from object no. 604 seems to be a part of T-shaped axe. This type of artifacts, considered also to be weapons (Grygiel 2008, 1982) were very popular within the Brześć-Kujawski group of Lengyel culture. In the context of TRB, antler axes were found in, among others, Las Stocki and Ćmielów (Wiślański 1979, 236). The origin and chronology of T-shaped axes from Polish Lowland has been recently thoroughly discussed (Kabaciński *et al.* 2014).

The archeobotanic analysis of plant traces found on pottery carried out by Joanna Abramów is another important part of the monograph. The results of macro- and microscopic examination are presented in two tables and in a short subsection. Apart from the traces of cultivated plants the author recognized also the traces of einkorn wheat, emmer wheat and spelt, which indicates of course that the inhabitants of Wilkostowo planted them. The observations of a few fragments of pottery with ornaments (zigzag below rectangular stamps under the edge and stamps on the edge) which were made with the use of grains are also quite interesting. In the next part of the article the author characterizes the species of the cultivated plants which traces were recognized on the site. She described their habitats, morphology, growing seasons and use and also their occurrence on archaeological sites.

The mentioned specialist analyzes are provided with the pottery and pugging mineral and technology research results, presented by Maciej Pawlikowski in the eighteenth chapter. The author determined macroscopic as well as microscopic features of the samples and he put the results into two tables. To compare the materials with local raw material, another sample was taken from the specially prepared brick (sample P-55). It was observed that clay with features similar to the local material was used to produce pottery in Wilkostowo. Additionally, the sample P55 and the sample taken from the bowl (P1) were tested for the presence of salt in clay. The results showed the presence of trace amount of salt in both samples, with more salt in the vessel from object 26. According to Pawlikowski, it confirms that local source of salt was used in Wilkostowo.

In the nineteenth chapter, Daniel Okupny, Anna Fortuniak and Julita Tomkowiak present the results of geochemical analysis of the biogenic sediments from the core sample taken from the water body in Wilkostowo. The aim of the analysis was to reconstruct the environmental changes near the site. The authors presented the detailed geochemical analysis of the sediments and then showed the phases of the water body's development (they distinguished nine phases, including five natural ones and four of anthropogenic origin). Similarly to the analyses carried out by Pawlikowski, the authors suggest that local brine might have been used in the economy of Wilkostowo. The increasing amount of magnesium and iron and decreasing amount of calcium carbonate in the sediments from levels W-IV and W-VI, connected by the authors with TRB, would confirm the hypothesis. For W-IV the radiocarbon date was 6020 ± 20 BP, which, after calibration, with the 95.4% probability is 4981-4845 BC. Therefore it is hard to admit that there is any connection between the change in sediments composition and the activity of the people who lived in Wilkostowo. Rzepecki refers to this problem in the next chapter. He formulates the hypothesis that the changes were the result of a natural forest fire and he only connects the W-VI level with TRB.

The chapter titled „Wilkostowo 23/24. From the birth to the death of the settlement” contains the description and explanation of Wilkostowo settlement characteristics. Referring to the ontogenetic model, Rzepecki presented the beginning, the full bloom and the

fall of the Wilkostowo settlement. The first phase of occupation included planning the settlement and building the houses. The author gave the detailed description of the layout of the buildings in the settlement, the form of the houses and he thoroughly analyzed single houses construction. He based his deliberations on the durability of clay and wood houses on modern observations of this type of technology. In this subsection graphic reconstruction of selected houses and whole settlement is presented. As the monograph continues, the author, using the available archaeological data, reconstructs the living conditions of the inhabitants and their everyday activities. Summing up the analyses presented in the book, he makes some comments on the ways of obtaining food (agriculture, breeding, hunting, gathering and fishing), making and using vessels and flint and stone processing. He also presents some thoughts on the possible use of salty water sources by the inhabitants of Wilkostowo. Another important issue raised by the author is social interactions. Rzepecki emphasizes the importance of western, south-eastern and northern relations. Moreover, to analyze the relations between different groups, it is extremely important to take into account the presence of the „amphora” society in the western end of the settlement. Radiocarbon data and scatter pattern concerning the pottery indicate the short stay of GAC community, contemporary with TRB, on the Wilkostowo site. The chapter ends with comments on the use of settlement space, social organization and the causes of its abandonment.

At the end of the monograph, there is a short part where the author discusses the most important research areas connected with TRB in Polish Lowland. He also cherishes a hope that the work will be an inspiration for further studies.

Undoubtedly, the book is a valuable source of information in „lowland beaker groups” studies. The research methods and the analytical system turn the work into something more than just a standard monograph. It is an interesting study on complex interpretative issues, important not only for the Inowrocław Plain, but also for the other lands where TRB community lived. The state of preservation of the site and the amount and extent of research done there are the reasons why Wilkostowo is considered to be unique and for sure it will become an important point of reference in future studies. The series of acquired radiocarbon dates is also extremely valuable as there is still very few of them for Wiórek phase of TRB.

Translated by Maciej Pondel

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