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(Review) M. Szmyt (ed.), *Mrowino, stanowisko 3. Późny neolit nad środkową Wartą (Mrowino, site 3. Late Neolithic on the middle Warta)*. Bibliotheca Fontes Archaeologici Posnanienses 22. Poznań 2018: Muzeum Archeologiczne w Poznaniu. 568 pp. + CD

Research into the Neolithic of Central Europe has been hampered by the insufficient publication of large series of sources, sometimes those of the highest importance. This is also the case regarding studies on the Neolithic of Greater Poland. The reviewed book presents materials from Mrowino site 3, one of the most important Funnel Beaker culture (further as FBC) sites in the region, previously presented only in short papers by the author of the excavations (recapitulatory publications: e.g. Tetzlaff 1981; 1989). The book was created under the editorship of Marzena Szmyt, an experienced researcher of the Lowland Neolithic. This multi-author publication is a result of the cooperation among archaeologists and specialists from a number of other fields. The book is comprised of the foreword, 17 chapters, a summary in English, and an appendix on the attached CD-ROM (containing detailed information concerning the analysed materials). Going far beyond a basic study of archaeological material, the book also presents results of specialist analyses and discusses the Mrowino materials against the Middle Neolithic of Greater Poland (Chapter 17 by Marzena Szmyt).

Chapter 1 (by Wanda Tetzlaff and Marzena Szmyt) presents the history of research at Mrowino. The works carried out at the site for many years were possible thanks to the funds from the Provincial Heritage Protection Office. The analysed materials come primarily from excavations conducted by Wanda Tetzlaff in 1973-1980, which encompassed an area of 12 ares and resulted in the discovery of more than 170 features, mainly associated with FBC occupation. They also produced a rich collection of artefacts (mostly pottery), allowing for performing detailed analyses.

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In Chapter 2, Iwona Hildebrandt-Radke discusses the Neolithic occupation at Mrowino from an environmental perspective. She presents the site against geomorphological characteristics, geology, hydrography, soils, and potential natural vegetation in the area, demonstrating that the site occupied an environmentally favourable location.

In Chapter 3, Mateusz Stróżyk, Marzena Szmyt, and Danuta Żurkiewicz discuss the stratigraphy of the site and characterise the non-portable archaeological features. The recorded profiles prove the site lies in a sandy area with developed podzols, typical of lowland areas. The majority of features discovered at Mrowino were settlement pits (137), apart from which also postholes, a grave (linked – with no certainty – with the Globular Amphora Culture), concentrations of daub and pottery, a ditch, and remnants of houses were identified. The chapter also includes standard tabular lists and drawings of features. The latter are basically good quality filed drawings. The lack of graphic interpretation of field drawings is generally a controversial approach, although in this particular case the draughtsman (or draughtsmen?) maintained quite uniform standards and the boundaries of layers and features are quite legible and raise no doubts. The authors characterise particular feature categories in detail, with most attention given to pits, which were the most numerous group. They also address stratigraphic relationships among the pits, which best illustrate the multi-phase nature of the analysed materials.

The interpretation of architectural relics discovered in the Mrowino settlement is an important issue (Chapter 4: Aleksandr Diachenko, Mateusz Stróżyk, Marzena Szmyt, Danuta Żurkiewicz). A detailed analysis of impressions preserved in daub offered the authors an opportunity to revise the development reconstructions presented in preliminary field reports. The inspiration for this study came from studies on Trypillia culture buildings (the participation of A. Diachenko in the project). It has been found out that there were four buildings connected with the older occupational phase within the explored area; construction details and manners of wall finishing are also discussed. Furthermore, the authors argue that the high degree of burning of some daub lumps is indicative of intentional burning down of the settlement. The obtained results are undoubtedly an original contribution to studies into issues regarding the settlement and economy of the Lowland Neolithic.

Chapter 5 discusses the basic category of portable sources, namely ceramic vessels (Marzena Szmyt, Danuta Żurkiewicz). The size of the ceramic assemblage guarantees its important position in source material and chronometric studies. The pottery is described according to a system developed for Kuyavia (original model: Kośko 1981), and the descriptions are supplemented with complete illustrations (92 figures presenting distinctive elements, and photographs and comparative drawings of distinguished vessel types). The authors' experience with Kuyavian materials allowed the analysed finds to be placed within the Late Beaker pottery tradition, with technological parameters, temper types in particular, as a decisive factor. Following algorithms used in other studies, the analysis of pottery style distinguishes four components: two of endogenic nature (Wiórek and Luboń) and two of exogenic nature (Baden and western). It is a pity that the authors have not taken

this opportunity to discuss in more detail the cultural-chronological aspects of this complication. Pointing at the core nature of the Wiórek component one perhaps should mention its immanent presence in the younger Luboń component (the alternative would be the relationships between the parallelly developing centres of Wiórek and Luboń). Another problem concerns the possibility to distinguish in the lowlands the Luboń component free of the Baden component, which would also have implications for chronometric reconstructions. Discussion of these issues goes beyond the problems of the Mrowino site itself. Nevertheless, the analysed materials offer a good (if not ideal) starting point for undertaking this discussion (or to be more precise, for continuing it, since the problem of parallel paths of cultural transformations has often been addressed in studies devoted to lowland materials, in particular those from Kuyavia).

In the next two chapters (6 and 7) Marzena Szmyt discusses ceramic objects other than vessels (including spindle-whorls, weights, miniature axes, and ceramic figurines) and ceramic vessels assigned to other cultural units (which constitute a marginal admixture in the analysed assemblage). The part of the book devoted to pottery closes with Chapter 8 by Anna Rauba-Bukowska, where results of petrographic and mineralogical analyses of pottery are presented on the basis of microscopic examination of 40 samples. The analyses have shown no marked differences in preparation of ceramic masses, and a distinct variability in raw materials.

The copious Chapter 9 (with extensive catalogue) deals with flint artefacts (Jacek Kabaćński, Małgorzata Winiarska-Kabacińska). The assemblage, totalling 836 artefacts, has high cognitive value due to the homogeneity of the materials (setting aside the phases of FBC occupation at Mrowino), with only very small admixtures indicative of Late Palaeolithic and Mesolithic occupation. The technological, typological, and traseological analyses have allowed the authors to attempt functional division of the FBC settlement into four areas, two of which were connected with the presence of dwellings. The set of Neolithic artefacts has been interpreted as typical for Late Neolithic household assemblages in Greater Poland.

In Chapter 10, Jakub Niebieszczęński characterises the patterns of exploitation of non-silicate lithic raw materials. The analysed assemblage was relatively small (85 pieces). The author confirms exploitation of various rocks, and identifies distinct functional preferences. Of particular note are preferences observed with respect to the manufacture of stone battle-axes – with only a small section of the spectrum of erratic raw materials available in the lowland areas used.

Proceeding from microscopical examination of 12 pottery fragments, in Chapter 11 Andrzej Sikorski addresses issues related to textile impressions. The analysis produced data concerning pottery making and production of plaited and woven objects. Among others, impressions left by plaited baskets and fabrics used at the stage of forming and decorating ceramic vessels have been identified. The results point towards significant potential of studying impressions on pottery and suggest such studies should be implemented on other Neolithic sites.

Two metal artefacts are discussed in Chapter 12 by Aldona Garbacz-Klempka. One of them – a finger ring made from tin bronze – was made using a sophisticated technology, which indicates its much later provenance than the close of the 4th millennium BC.

Since the analysis of animal bone remains from Mrowino carried out in the past (Schramm 1987) does not meet today's standards, it became necessary to repeat it (Chapter 13: Daniel Makowiecki, Marzena Makowiecka, and Marzena Szmyt). Remains of domesticated mammals, including cattle, prevail in the analysed assemblage, although the proportion of wild animals is relatively high (8.5%). The authors suggest that the presence of bones exposed to high temperatures can be linked with a fire in the settlement (cf. Chapter 4).

In Chapter 14, Joanna Rennwanz discusses the exploitation of plants by the inhabitants of the Neolithic settlement at Mrowino. With no soil samples available, she based her analyses on the examination of selected potsherds and lumps of daub. The impressions had been analysed before by Melania Klichowska (1972). Rennwanz's analysis has allowed for identification of a relatively long list (526 items) of remains of cultivated plants, weeds, and trees. The presence of emmer and einkorn wheats and barley has been confirmed (interestingly, barley prevailed). On the other hand, the presence of millet, previously suggested in the context of Mrowino, has been ruled out. Among tree species, Scots pine played the fundamental role as a building material and fuel. Impressions of branches with leaves of willow and hornbeam indicate their use for construction of wattle-and-daub walls of houses. The particular importance of the discovery of hornbeam impressions is emphasised – at that time (second half of the 4th millennium BC) this species was entering lowland landscapes.

Chapter 15 is devoted to the sphere of ritual behaviours. It is based on ascribing certain objects a particular role in ceremonial activities (a drum, selected ceramic vessels, clay balls known as "loaf-of-bread idols", miniature ceramic axes, figurines). These artefacts were spread throughout the entire explored part of the settlement, hence no areas of special, ceremonial function have been identified.

15 AMS dates were obtained for archaeological features from Mrowino (Chapter 16: Tomasz Goslar, Marzena Szmyt, and Danuta Żurkiewicz). This has allowed for constructing chronological models for occupational phases. In the past, one conventional C<sup>14</sup> date was obtained at the Groningen laboratory (Tetzlaff 1989). Rejecting two distinctly older dates obtained from charcoal samples, the potential lifespan of the site has been estimated at 471 years (with 68.2% probability). However, this is the maximum, and at the same time little likely, range. Therefore, the authors carried out four model estimations using different sequences. Nevertheless, even with the ranges considerably narrowed in model 4, the lifespan of the buildings – estimated at 102 years (68.2%) – seems quite long. A model assuming the shortest possible lifespan of the buildings has not been presented (phases MRO-A1). It is worth noting that determining precise lifespans of occupational phases in an objective manner is very difficult in this case, due to insufficient precision of the method.

What is important is setting the age of Luboń materials on the scale of cultural transformations in the lowland zone, with a strong indication at the second half of the 4th millennium BC. However, the authors have not presented a comparative background: dates from other sites and a related discussion on the chronometry of Lowland Neolithic.

The book closes with the recapitulatory Chapter 17, by Marzena Szmyt. The chapter sums up the results of analyses discussed in previous chapters, presents the context of FBC occupation, and proposes a division of the Mrowino materials into occupational phases. From the perspective of understanding the nature and dynamics of settlement processes, the lack of graphic interpretation of traces of FBC occupation at the two major stages distinguished is a significant drawback. Such a graphic reconstruction would legitimise the divisions proposed in the book. The recapitulation focuses on multi-aspectual presentation of settlement and economic issues, leaving out a discussion on chronology and genesis of late Funnel Beaker culture in Greater Poland.

The high quality of the book, its substantial content, and the appeal of the presented materials, confirm the great importance of the National Heritage Board of Poland's programme, which provides funding for publication of sources originating from field research carried out many years ago. Thus, the Editor's declaration that the publication of the Mrowino materials marks the beginning of a series of publications devoted to Neolithic materials from Greater Poland in the collection of the Archaeological Museum in Poznań, bodes well for the coming years.

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