

Michela SPATARO, *Starčevo ceramic technology: the first potters of the Middle Danube Basin, Universitätsforschungen zur prähistorischen Archäologie, Band 341, Verlag Dr. Rudolf Habelt GmbH, Bonn, 2019, ISBN 978-3-7749-4234-9, 459 pages, 168 figures, 143 tables.*

It goes without saying that at most archaeological sites pottery is the most numerous and common type of finds. Traditional monographic approaches to Neolithic sites always devote large chapters to pottery studies, focusing frequently on pottery typologies based on shapes and decoration, used mostly to build or justify the presence/absence of cultural phases at the respective sites. Comparatively speaking, very few studies go beyond the surface of pottery vessels and the present volume is one of them.

Michela Spataro has devoted most of her past and present career to investigate pottery in new ways with the help of modern techniques and technologies, and has studied pottery not only from a technical point of view but also in an attempt to connect it to the people/communities that created and used it. This volume is the outcome of her many years of work (starting with 2003) within a grant by the Leverhulme Trust (project F/07134/A, *The early Neolithic in the Balkans: ceramic analysis and cultural processes*) and reaching an end during a Mercator fellowship at the Kiel University in 2017. The subject of the volume covers a large geographical area, and it proves both good knowledge of the archaeological context and archaeometry.

The short *Preface* from the editors (Johannes Müller and Knut Rassmann) is followed by a preface from the author, eight main chapters, five appendixes and a section of references. The structure of the volume is presented synthetically in the author's *Preface*, who also acknowledges at large the institutions and people instrumental to the entire research undertaken previous to, and during the writing of the book.

The first chapter ("*The earliest pottery of the Middle Danube Basin*") provides a comprehensive synthesis of the development of the Starčevo-Criș-Körös group touching on settlement patterns, subsistence economy, burials and material culture. The author manages successfully to provide a succinct account despite the many opinions on the chronology and typology of the culture, many of them dictated by political boundaries. The short final section of the chapter (written by John Meadows) offers a good critical review and interpretation of the existing ¹⁴C dates with an aim tightly connected to the subject of the volume: to provide a start and an end date to the culture, detect any geographical patterns in these dates, date each pottery assemblage analysed in the volume and possibly suggest a date/period for the different pottery styles. By applying a conventional uniform bounded-phase model, the development of the Starčevo-Criș-Körös is placed largely between ca. 6100 and ca. 5400 cal BC. The modelling of the ¹⁴C dates indicate the dates were consistent with the typo-chronology proposed for most of the 18 assemblages analysed, with very few exceptions. The temporal distribution of the available ¹⁴C dates potentially associated with the various surface treatments (barbotine, linear, incised, pinched, white-on-red painted, etc.) indicates a long-time use of impressed, pinched, burnished and plastic decoration, and against general belief, monochrome and white on red also appear to have survived a long time (Fig. 1/7).

The second chapter ("*Methods and materials*") provides a succinct review of the methodology employed: site selection, sampling technology, and provenance and technological analysis, while the final section connects technology to the social aspects. Two main analytical techniques were used: optical microscopy in thin section and SEM-EDX. The chapter includes very useful introductory sections on mineralogical analysis of thin sections (including interpretation of thin

sections, clay processing, temper surface finishing and firing) and SEM-EDX imaging and analysis, making it easy to read and comprehend even by the less "initiated" in archaeometric studies.

The areas and sites of interest are presented in chapters 3 to 5. The 18 analysed assemblages originated from the Romanian Banat (the sites of Dudeștii Vechi – *Movila lui Deciov*, Foeni – *Gaz*, Foeni – *Sălaș*, Fratelia, Giulvăz and Parța), Transylvania (Cerișor – *Cauce Cave*, Gura Baciului, Limba – *Bordane*, Miercurea Sibiului – *Petriș*, Ocna Sibiului – *Triguri*, Salzbach, Orăștie – *Dealul Pemilor* and *Șeușa – Cărarea Morii*), Serbia and Slavonia (Donja Branjevina, Golokut – *Vizić* and Mostonga (Vinkovci and Ždralovi)). All the sites selected are well known in the literature, providing as accurate archaeological contexts as possible (considering the time period they were excavated). Also, they provided substantial quantities of pottery, making the sampling of the complete assemblages meaningful.

The analysis of each assemblage is preceded by a short presentation of the site (archaeological context, subsistence economy, ceramics and stone tools) and a short geology and soil samples section. Pottery analysis discusses thin sections first (grouped on cultural phases), followed by the results of the SEM-EDX, the two approaches coming together for each site on a "*Discussion and Summary section*". The text is accompanied by meaningful abundant illustrations (good drawings and photos of the sampled artefacts, photomicrographs of soil samples and ceramic pastes of the samples, and plots of Principal Component Analysis based on the SEM-EDX compositional data for the sherds analysed).

Chapter six ("*Local production, pottery exchange, or transmission of ideas*") debuts by comparing sites in near proximity (and only in a few cases located at long distance from one other) and looks at the manner local potters shared (or not) the same clay resources and technological traditions. The results are intriguing for the Romanian regions: while in the Banat there is little variation in the pottery recipe, the contrary seems to be the case for the Transylvanian sites, and the latter seems to be accounted for by the larger variation of local geology, and the use of plant-and-sand temper. For Serbia and Slavonia, differences in the clay used are accounted for by the large geographical distribution of the sites, although use of plant temper was fundamental at all places.

The SEM-EDS was used in an attempt to distinguish between local pottery and imports. Four sherds of the 216 analysed were likely to have originated elsewhere: a wall sherd from Foeni – *Gaz* (Romania), a painted pot from Golokut – *Vizić*, one sherd from Donja Branjevina and the fourth from Mastonga (Serbia). This was determined based on their very different chemical signature when compared to other pot sherds analysed in the region. But local chemical sources are most diverse in Transylvania, making it more difficult to recognize imports for this area.

Chapter seven ("*Typology and raw materials*") is looking at correlations between clay sources and temper, and the possible associations between particular vessel forms, functions and surface treatments. No correlation between temper and shape, decoration and cultural phase was visible for the Banat sites. At Transylvanian sites, despite the fact various types of clay were used, most of them were used with all temper types and stronger associations were determined by the wide availability of a particular type of clay in areas with a particular technological tradition. Association between temper and shape revealed no obvious patterns, suggesting temper was unrelated to vessel function. No correlation was found between temper and

decoration/surface treatment or cultural phase. In a similar manner, for Serbia and Slavonia, no correlation was observed between temper and clay type, shape, decoration or cultural phase.

The last chapter (*"The Starčevo potters"*) opens with a discussion on technical traditions of everyday pottery production as resulting from the analyses in the previous chapters: raw materials – clays and temper (Starčevo potters preferred plant temper throughout all phases, *contra* previous expressed opinions of a gradual shift from plant to mineral temper); forming techniques (coiling prevails but pinching and drawing were occasionally used for small bowls); firing techniques (on bonfires rather than kilns, and at low temperatures, generally between 600°-700° C, although higher temperatures were occasionally reached); surface treatment and painted decoration (discussed in detail by type).

The chapter continues with a summary of the results on the technological variation (technology, clay type and cultural tradition; Technology, form and function; Macroscopic observation on the Starčevo-Criș potsherds analysed) indicating that many of the Starčevo pots *"were used in relation to food preparation or consumption and not made just for ritual and cult"* (p. 375). The analysis of the figurines/altars indicates they were all locally made, from the same clay and using the same technology as the everyday pottery: *"The idea of a single centre making cult objects for other Starčevo communities can therefore be dismissed"* (p. 377).

The volume/chapter ends with a few brief conclusions of social bearing: role of the potters within the respective societies,

seasonality/permanence of pottery production, specialized production, etc. It seems that pottery was produced all year round, in domestic settings and for local consumption. Raw materials were readily available close to the settlement. The lack of firing installations and sophisticated products indicates the absence of specialized potters, but the continuity of pottery technology and style over the entire Starčevo area indicates ongoing interactions between the communities.

Appendix 1 represents a pottery catalogue of the sample studies by sample number, description, decoration/surface treatment, find spot and colour (as found in Munsell Soil Colour Charts 2000). Appendix 2 shows 12 XRD spectrograms of the soil samples (12 plots) while Appendixes 3 to 5 are petrographic catalogues of the Romanian Banat sites, and of Transylvania, respectively Serbia and Slavonia ones.

Despite its many graphs, spectrograms and plots, the present work is easy to follow and provides both basic and complex information on the interpretation of the archaeometric results. The experience acquired by the author during her years of work on the Adriatic Early and Middle Neolithic shows clearly in the approach and organization of this book. One can only wish that more such approaches to pottery would follow, on an increasingly larger number of Starčevo sites, and thus enlarge the study area to the entire geographical area of the Starčevo culture.

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