

# THE DEVELOPMENT OF POTTERY IN THE MIDDLE NEOLITHIC AND CHRONOLOGICAL SYSTEMS OF THE STARČEVO CULTURE

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**Abstract:** *This paper presents the results of the investigations undertaken at the Middle Neolithic sites in the regions of Central Balkans and Southern Pannonia, especially those related to the pottery material. All sites in these areas are assigned to the classical and final period of the Starčevo culture. Some different approaches to pottery studies are pointed out and the possibility for the revision of the existing chronological systems of the Starčevo culture, with recognition of only two phases, is suggested.*

**Key words:** *Middle Neolithic, Starčevo culture, pottery, periodization.*

The studies of the Neolithic cultures in Serbia started more than a century ago. Over this period more than a hundred sites associated with the Starčevo culture, *i.e.* Middle Neolithic, have been investigated and surveyed. However, a review of the excavated sites and published materials shows that there is not a single Starčevo settlement that has been fully investigated, and that even today there are no complex research projects underway that may enhance studies of different aspects of this culture.

Most Starčevo settlements are single-layered. The small scale investigations undertaken so far do not offer enough elements to explain mechanisms and causes for the mobility of Starčevo communities or the character of the farming economy that is likely to have been responsible for such a short-lived occupation. Genuine multilayered sites are almost absent, while settlements with two or more dwelling horizons are more the exception than the rule across the Starčevo culture zone. Thus, the issue of the internal chronology and periodization of the Starčevo culture has inevitably focused on the definition of not always reliable stylistic and typological criteria for pottery, and to a much lesser degree on stratigraphic indicators. But, as far as chronology and geography are concerned, Starčevo pottery does not display any notable typological differences or changes, except perhaps in the final phase of the culture, but even then only partially. This conservatism, visible in all aspects of this culture, seems to be reflected in the almost identical approach of scholars and re-

searchers towards the issues of its periodization and relative chronological associations. However, a synchronization of the existing schemes is not always possible due to the different criteria applied for the definition of the Starčevo culture development phases, resulting in a different number of phases recognized within the culture.

It appears today that these chronological systems interpret some phenomena and specific features noted at specific sites as being relevant for the development of the culture as a whole, thus viewing micro-regional characteristics as significant chronological parameters valid for the whole area over which the culture extended. When taken together, the existing periodization schemes mostly agree on the definition of the initial phase (assigned to the Early Neolithic) and the final phase in the Starčevo culture development. However, opinions differ greatly when it comes to the so-called classical period of the Starčevo culture. The periodizations disagree not only in the different numbers of assumed phases that the Middle Neolithic in Serbia went through, but more significantly over the basic characteristics of those phases. Conflicting views about the stratigraphic and chronological positions of some pottery features, such as white and dark painting, linear and spiral motifs, and, as a consequence, about the chronological positions of individual sites, make it necessary to reconsider and possibly adjust the existing periodization schemes of the Starčevo culture.

This seems inevitable, not only for formal reasons, but also because the interpretations of the Middle Neolithic in the Central Balkans, and the wider Balkan and Carpathian region, that appear without well-grounded arguments, seem to derive from an almost dogmatic approach to the existing chronological systems of the Starčevo culture. A remark by Özdoğan (1997: 27) may best illustrate how limiting these system based on the authority of scholars rather than on verifiable facts can be – he argues that when it comes to the Neolithic in the Balkans, scientific discussions are still based on the data presented by V. Milošević, M. Garašanin and V. Georgiev as evidence for their theories decades ago.

This is confirmed to a great extent by the current use of the Starčevo culture chronological systems created in the middle of the twentieth century (Milošević 1950; Arandelović-Garašanin 1954). The continuing use should imply that these systems, although based on the data collected from a few sites, which were only partly investigated and published at the time, clearly define not only the characteristics of the development phases but also the distinctive regional features that must have been manifested across an area as large as the one over which this culture spread. Furthermore, it can be understood that on the basis of the contents of the four assumed phases defined by these schemes, the relative chronological position of recently excavated sites can also be clearly determined and easily brought into correlation with other contemporary sites.

In the seventies, new proposals for the periodization of the Starčevo culture were put forward. Although they were based on the existing schemes, they offered some adjustments and corrections. The most important one was redefinition of the initial phase of the Starčevo culture, but this issue concerns the Early Neolithic, which places it beyond the scope of this paper. The periodization proposed by Srejović (1971: 15) implies that after the Proto-Starčevo Early Neolithic culture (?), the Starčevo culture developed through three phases that, based on their contents, can match the phases Starčevo IIa-III, as defined by Garašanin (1954), or phases II-IV B, defined by Miložčić (1950). M. Garašanin's contribution has also to do with redefinition of the Early Neolithic phase, which he named the Gura Baciului group, but whose contents are in line with the definition of Proto-Starčevo (1979: 132). He does not deny the existence of the Starčevo I phase (*ibid.*: 142), which still remains absolutely hypothetical and unidentifiable either culturally or chronologically at any site (Николић 2001: 14).

He further argues that the later development of the Starčevo culture was characterized by three phases. The contents of the phases Starčevo IIa and IIb remain unchanged in relation to the definition proposed by D. Garašanin. However, as a result of the excavations carried out at many sites in the sixties and seventies, the new contents are attributed to the Starčevo III phase (Гарашанин 1979: 135). Although it is usually called "D. Garašanin's periodization", the adjusted periodization scheme created by M. Garašanin is in fact most commonly used today because of its clearer definition of the phase Starčevo III.

New ideas about the Starčevo culture as a whole were actually brought forward by the chronological system devised by Dimitrijević (1974). The contents of the earliest phases (Monochrome and Linear A), as presented in his periodization scheme, match the definition of Proto-Starčevo (*ibid.*: 69). However, he assumes that the cultural development that followed was notably more dynamic, not only in the chronological but also in the regional sense, so that the development of the Starčevo culture can be viewed as taking shape over four, and in some areas five phases (*ibid.*: 82-90).

With the assumption of a long lived Neolithic culture taken for granted, and with stratigraphic indicators and clearly recognizable changes in material culture lacking, all suggested periodizations are primarily based on painted pottery, which makes up only 1-2% of the total pottery material. It is not always possible to discuss the entire pottery production because a lot of conclusions have been drawn from the data collected from sites with a small investigated area or from sites that were only surveyed but not excavated, or those that were excavated on a small or a large scale, but the results of which have never been published. Taking into consideration a lack of multilayered sites belonging to the Starčevo culture, where the conclusions that are based on the data collected from the one-layered sites are possible to confirm, as well as the

lack of clear evidence in support of the unreliable assumptions of horizontal stratigraphy, it becomes clearer why all periodizations suggested until now mostly rest on often uncritical assessments of the value of painted pottery. Since publication of archaeological material and results of excavations at Starčevo sites most often do not include statistic analyses of all pottery material or at least a representative selection, there are no quantitative indicators, which in turn paves the way for an impressionistic approach towards painted pottery, covering the information gap in all other elements of the culture.

The disagreement over the number of the developing phases of the classic Starčevo culture shows that the existing periodization schemes cannot be fully synchronized, often due to the different criteria according to which these phases are defined. The periodization suggested by D. Garašanin emphasizes the colour of painting as the principal criterion for the phase definition (Arandelović-Garašanin 1954: 136). All sites where white and dark painting occur, regardless of the motifs executed in this way, are assigned to the phase IIa. On the other hand, the sites where only dark-coloured painting was found are assigned to the phase IIb (Гарашанин 1979: 136). The characteristics defining the phase Starčevo III are somewhat more diverse: along with the colour of painting (still dark), motifs become important (spirals are noted to have been executed more frequently than in the preceding phase), as well as new elements in pottery production – polychrome painting and biconical shapes of vessels (*ibid.*: 135).

In contrast to this, Dimitrijević (1974) argues that motifs should be regarded as the criterion for the distinction of individual phases since both classic and late phases of the Starčevo culture are mainly characterized by dark painting. He maintains that the occurrence of new motifs in painting simultaneously signifies a new phase in the development of the culture, with linear motifs chronologically preceding curvilinear and spiral ones. In accordance with this, the developing phases are marked as “Linear B”, “Garlandoid”, “Spiraloid A” and “Spiraloid B” (Dimitrijević 1974: 69–70). It should be noted that only the phase “Spiraloid B”, which is not defined by a new motif, but by the occurrence of polychrome painting and biconical shapes, can be brought into correlation with the periodization suggested by D. Garašanin, since the criteria defining the phase Starčevo III and “Spiraloid B” are almost identical.

These periodization schemes by Arandelović-Garašanin (1954) and Dimitrijević (1974) are still used by most researchers into the Starčevo culture as the basis for their work, thus illustrating today’s approach to the studies of this culture, especially pottery. Pottery makes up 90% of all portable finds from all Neolithic sites, so it comes as no surprise that the chronological systems are inevitably based on this kind of material, creating an ideal picture of the period in question. The individual phases or development stages are defined on the basis of “the collection of the most expressive indicators of one period’s horizon” (Dimitrijević 1974: 79). However, when it comes to the pottery material

of the Starčevo culture, the perspective seems to be greatly narrowed. This is confirmed by all the suggested chronological systems which note, as the most distinctive and almost unique feature, only changes in painted pottery although this type of pottery either makes up only an insignificant part of the pottery material or is totally lacking.

The authors of the mentioned schemes were undoubtedly well aware of this. Arandelović-Garašanin (1954: 62), for example, points out that painted pottery does not represent the main feature of the Starčevo culture, but a relatively rare phenomenon, while coarse pottery makes up 70% of the whole material. Although so called coarse pottery absolutely prevails at all the sites of the Starčevo culture, and also in the pits in Starčevo on which D. Garašanin devised her chronological system, it has remained almost unknown and overshadowed by painted pottery.<sup>1</sup>

M. Garašanin's contribution to the chronological system of D. Garašanin does not refer to coarse pottery either. On the basis of the number of the pottery sherds classified as coarse, fine or painted in the pits of Starčevo, the conclusion is drawn that "coarse pottery absolutely dominates over fine pottery" in the pits that supposedly represent the phase Starčevo I (pits 3, 8 and the deepest layer of the pit 5A). "Barbotine, created by slapping or running of fingers, prevails as ornament", while "impresso is very rare" (Гарашанин 1979: 134). Coarse pottery also prevails in the pits representing the phase Starčevo IIa. Ornamentation maintains the same barbotine-impresso ratio. However, coarse pottery and its characteristics are not regarded as elements important for definition of the phase Starčevo IIb. An increase in the occurrence of fine pottery in relation to coarse pottery is noted as one of the characteristics of the phase Starčevo III. The barbotine-impresso ratio does not indicate any important changes in ornamentation (Гарашанин 1979: 135).

Dimitrijević (1974: 68) notes that D. Garašanin and Milojević regard coarse pottery as a static category, arguing that this is one of the most serious deficiencies in their periodization schemes. Although he points out that coarse pottery must have changed and developed, he sees this kind of pottery in an almost identical way. He states that barbotine, which is almost unknown in the early Neolithic phases (Monochrome and Linear A) of the Starčevo culture, appears on a significant number of vessels in the phase Linear B (genuine and channeled barbotine), unlike impresso that appears less frequently. But he does not consider coarse pottery to be of any serious significance for the chronological system. Coarse pottery is noted as being represented in all kinds in the phase Spiraloid A, but in the phase Spiraloid B channeled barbotine dominates (Dimitrijević 1974: 70).

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<sup>1</sup> The terms coarse and fine pottery are not clearly defined, so that classification of pottery material into one of these two categories is arbitrary – the matter of free choice. Consequently, the statistical indicators of their relation are unreliable.

Apart from these general remarks, it remains unclear what pottery for every-day use may have looked like. There is no typological presentation of pottery, although a small number of shapes, without distinctive functional differentiation, are likely to have been found. If the development of the Starčevo culture can really be observed over three or four phases throughout the Middle Neolithic, there is no doubt that pottery, which serves the social and economic needs of its user, must have undergone change. Ethno-archaeological research confirms that changes in shapes, dimensions, technological features and ornamentation of vessels can be induced by a number of factors conditioned by changes in culture (Mills 1999: 99). Most frequently they concern changes in economy, diet, food preparation and social organization (Braun 1983). However, according to the modest published material and conclusions drawn from summarized descriptions, Starčevo coarse pottery seems not to have changed at all throughout the Middle Neolithic. Such conclusions are prompted by the quantitative data collected from the pits in Starčevo (Arandelović-Garašanin 1954: 86–103). D. Garašanin's work, although not always precise enough to allow a more detailed statistical analysis, is the first and, unfortunately, one of only a few attempts to deal with the issue of pottery material in this way.

Since there is no data about typological or other differences in the pottery material from the pits, and bearing in mind that the material from Starčevo has not been published yet, the only conclusion, if this data about the contents of the pits is considered generally, is that there are no elements indicating possible chronological or functional difference between them. The ratio of coarse-fine-painted pottery as well as ornamented to non-ornamented pottery is almost the same in all the pits (table 1). In the groups of coarse pottery and or-

**Table 1.** Frequency of coarse, fine and painted pottery in the Starčevo pits (after Arandelović-Garašanin 1954).

	NUMBER OF FRAGMENTS				FREQUENCY		
	coarse	fine	painted	total	coarse	fine	painted
pit 3	189	19	0	208	91,0%	9,0%	0,0%
pit 4	497	453	12	962	51,7%	47,1%	1,3%
pit 5A (the deepest layer)	134	46	0	180	74,4%	25,5%	0,0%
pit 5A (the layer under an older floor)	552	236	11	799	69,0%	29,5%	1,3%
pit 5A (the layer between two floors)	302	118	8	428	71,9%	28,0%	1,9%
pit 5A (the layer above the later floor)	202	145	6	353	57,7%	41,4%	1,7%
pit 6	5824	2095	127	8046	72,7%	26,0%	1,5%
pit 7	1932	498	22	2452	78,8%	20,3%	0,9%
pit 8	262	88	0	350	74,0%	25,0%	0,0%
pit 10	449	39	10	498	91,5%	7,8%	2,0%

namented coarse pottery, the barbotine-impresso ratio is also very similar in all pits (tables 2-3). The only inconsistency is noted in pit 4, where fine pottery is more frequent than in any other pit. It should be pointed out that the pits 3, 8 and the deepest layer of the pit 5A are included in the statistical tables, not as representing the phase Starčevo I, the existence of which is denied by most authors, but as illustrating and confirming the fact that the reliability of statistical analyses depends on the size of the sample. By application of various statistic methods, these very pits were taken as an example to prove that, given the small quantity of pottery, painted pottery could not be expected there (Ko-

**Table 2.** Frequency of barbotine and impresso in coarse pottery of the Starčevo pits (after Arandelović-Garašanin 1954).

	NUMBER OF FRAGMENTS		FREQUENCY	
	barbotine	impresso	barbotine	impresso
pit 3	122	4	67,7%	2,2%
pit 4	183	20	37,7%	5,0%
pit 5A (the deepest layer)	75	5	57,6%	3,7%
pit 5A (the layer under an older floor)	413	5	75,0%	0,9%
pit 5A (the layer between two floors)	148	11	49,3%	3,6%
pit 5A (the layer above the later floor)	135	0	68,0%	0,0%
pit 6	3457	157	59,6%	2,7%
pit 7	1030	16	53,0%	0,8%
pit 8	114	7	43,0%	2,6%
pit 10	288	0	65,0%	0,0%

**Table 3.** Frequency of barbotine and impresso in the group of ornamented coarse pottery (after Arandelović-Garašanin 1954).

	NUMBER OF FRAGMENTS		FREQUENCY	
	barbotine	impresso	barbotine	impresso
pit 3	122	4	93,8%	3,0%
pit 4	183	20	67,0%	7,4%
pit 5A (the deepest layer)	75	5	93,7%	4,0%
pit 5A (the layer under an older floor)	413	5	93,8%	1,1%
pit 5A (the layer between two floors)	148	11	92,5%	6,8%
pit 5A (the layer above the later floor)	135	0	97,0%	0,0%
pit 6	3457	157	90,9%	4,0%
pit 7	1030	16	88,0%	1,6%
pit 8	114	7	76,0%	4,6%
pit 10	288	0	87,0%	0,0%

**Table 4.** Frequency of painted pottery in the pits at Starčevo (after Arandelović-Garašanić 1954).

	WHITE					DARK				
	linear motifs	curvilinear motifs	spiral motifs	unknown motifs	total	linear motifs	curvilinear motifs	spiral motifs	unknown motifs	total
pit 4	7				7	4	1			5
pit 5A (the layer under an older floor)	1			2	3	4	2		2	8
pit 5A (the layer between two floors)						5	1		1	7
pit 5A (the layer above the later floor)						5	1			6
pit 6	34	3	1	23	63	46	8	3	5	62
pit 7	8	2		6	16	3			1	4
pit 10						4			6	10

rošec 1973). Furthermore, the conclusion was drawn that the pits in Starčevo, containing no painted pottery, could not be considered older than the pits with painted pottery and could not represent the earliest phase of the Starčevo culture (Korošec 1973: 288; Dimitrijević 1974: 68).

In contrast to the most numerous group of finds from the Starčevo sites, the studies of which have not progressed from the level of general remarks on domination of coarse pottery and barbotine as the most commonly applied ornamental technique, poorly represented painted pottery has been illustrated and described in detail. Moreover, the relative chronological associations of individual sites with Starčevo and from there with Neolithic cultures in South and South-East Europe are established on the basis of painted pottery. The contents of the pits at Starčevo served as a cornerstone of such comparisons and conclusions.

The most important conclusion drawn from these numeric indicators is summarized in the definitions of the phases Starčevo IIa and IIb, and it is founded on the often disputed stratigraphy of the pit 5A. The doubts as to whether a single pit could have been used continuously over several hundred years and whether its contents, with a "reliable" stratigraphic relation, could reflect the chronological sequence of three phases of the culture, have been confirmed by the application of statistic methods. Accordingly, it seems sensible to conclude that all pits at Starčevo, including those without painted pottery, represent only one phase of the Starčevo culture (Korošec 1973: 287).

A short review of the characteristics of the pottery material from the Starčevo sites supports this opinion to a great extent (table 5). However, it



**Table 5.** Summary of some pottery elements and their chronological position (after Гапаршанин 1973; *idem* 1979; Dimitrijević 1974; *idem* 1979).

	WHITE				DARK				poly-chromy	claw-shape spirals	bico-nical shape	Gara-šanin (1974)	Dimi-trijević (1974)
	linear	curvi-linear	spiral	garland	linear	curvi-linear	spiral	garland					
Žitkovac					+			+					G
Gladnice Ia	+				+			+				IIa	
Gladnica Ib	+				+			+		+		IIb	
Rudnik I												EN	
Rudnik II	+	+			+	+						IIa	
Rudnik III					?	+	+					IIb	
Rudnik IV					+	+	+		+	+	+	III	
Rudnik A													M
Rudnik B	?	+			+						+		G
Rudnik C					?	?	+						Sp A
Crnokalačka bara	+	+		+	+	+	+	+	+	+	+	III	Sp B
Bubanj					+	+						IIb	G
Pavlovac-Čukar					+	?	+					IIb	
Pavlovac-Gumnište					+	+						III	
Vrtište								+	+			IIa-IIb	G
Dubrava I	+				+	+	+					IIb	Sp A
Tečić	+				+		+		+				
Bunar					+						+		
Supska	+		+		+		+				+		
Kusovac	+				+		+				+		
Starčevo (pit 4)	+				+	+						IIa	
pit 5A (the layer under an older floor)	+				+	+						IIa	G
pit 5A (the layer between two floors)						+					+	IIb	Sp A
pit 5A (the layer above the later floor)					+	+							Sp B
pit 6	+	+			+	+	+	+			+	IIa	Sp A
pit 7	+	+			+							IIa	G
pit 10					+							IIb	
Krstičeva humka					+		+		+		+	III	Sp B
At Vršac					+				+				
Vinča					+			+					
Golokut					+		+		+		+	III	
Obrež Baštine					+		+				+	III	Sp B
Šašinci							+				+		
Grabovac					+		+				+		
Zlatara					+						+		
Ribnjak					+						+		
Vučedol					+								Lin B
Vinkovci Hotel					+								Lin B
Vinkovci Zvijezda	+				+								LinB(G)
Našice ciglana					+								
Zadubravlje					+								
Sarvaš	+				+								G
Vinkovci					+		+			+			Sp B
Ždralovi											+		Sp B
Podgorač											+		Sp B
Vrpolje											+		
Cernička šargovina											+		
Pepelane											+		
Lanycsok					+								
Barcs					+								
Harc Nyanouszla							+					+	
Dombovar											+		
Becsehely											+		

should be noted that material available from some sites is either taken from surface finds only or is still unpublished, so that it cannot be taken into consideration when the development and character of the Starčevo pottery are discussed.

### *Kosovo and the South Morava Valley*

The regions of Kosovo and the South Morava Valley are regarded as a distinctive regional variant of the Starčevo culture (Garašanin 1979: 136). Three sites in Kosovo have been investigated: Žitkovac, Gladnice and Rudnik. The elements that could have shed light on the character and possible development of the Starčevo culture in Kosovo remained within the limits of general information, in spite of the existence of two multilayered sites. The excavations were completed more than 30 years ago but the results were never published.

The small scale investigation (48 m<sup>2</sup>) at Žitkovac conducted in 1955 was presented in a preliminary report (Tasić 1958). The Starčevo material that seems to have been poorly represented came from the earliest horizon above which remains of a Vinča settlement were found. The finds from a thin Starčevo layer offered coarse barbotine pottery and a small number of fragments with dark painted ornaments.

There are two different opinions about the chronological association of Žitkovac. Some maintain that the site should be assigned to the Girlandoid phase (Dimitrijević 1974: 86) because of the occurrence of dark painted motifs (linear, garlands). At the same time, the assumption of the existence of two discontinued phases at Žitkovac is also based on the same painted fragments. The assumed earlier phase is assigned to the transition phase of the Middle Neolithic (MNCB I/II), and the late phase is synchronized with the last period of the Starčevo culture (MNCB IIIb) (Tasić 1998: 42).

There are only two painted fragments from Žitkovac that have been published so far (Tasić 1958). The very thin Starčevo stratum does not allow any chronological distinctions so that it is quite difficult to make any definite conclusions about the chronological association of Žitkovac on the basis of such modest published material.

The excavations at Gladnice (98 m<sup>2</sup>) in 1956 and 1959 are presented in two preliminary reports (Glišić and Jovanović 1957; Glišić 1959). In his unpublished Ph.D. Dissertation Glišić (1965) gives a short account of the archaeological material found at Gladnice arguing that the existence of two phases, with pottery material that does not display significant differences, can be assumed. Coarse barbotine pottery prevails in both phases, while impresso and incision are less frequent (*ibid.*: 25). Painting in the phase Gladnice Ia is executed in dark colour, with mostly linear motifs (vertical bands filled with a reticular design, vertical or oblique lines; under the rim there are garlands or bordures with bands in a reticular pattern). Spirals are rare. It is said that "white painted

ornaments at this site represent an exceptional phenomenon. A few discovered fragments are valuable only because they almost entirely belong to the earlier layers and because of the motif with lines accompanied by circular dots on a dark background (motif of olive branch) that is detected on one of them" (Glišić 1965: 27). Pottery types and ornamental techniques remain the same in the phase Gladnice Ib, but spirals are more common in the group of painted pottery. Spirals with a claw-shape at the end also appear. White painting is not explicitly mentioned, but considering the remark (Glišić 1965: 25) that this kind of painting "almost entirely belongs to the early phase", its occurrence in the phase Gladnice Ib can be assumed, most probably in an insignificantly small amount. The late phase at Gladnice is characterized by the presence of more sharply profiled biconical bowls (*ibid.*: 1965: 25).

Since both dark and white painting occur in the early, and only (?) dark painting in the late phase, Gladnice Ia and Ib are assumed to represent the phases Starčevo IIa and IIb (Гарашанин 1973: 39; *idem* 1979: 136). However, the detection of two phases, with the earlier phase represented by a thin layer under "the dwelling horizon, with already rare Starčevo material" (Glišić 1959: 15), does not appear to be well grounded. According to the description of the pottery material, one can draw the conclusion that Gladnice is a single-layered settlement of the late phase of the Starčevo culture. A fragment decorated with white droplet-like painting, which in the central Balkans is mostly associated with the Early Neolithic, does not have any chronological significance in this case. Considering the fact that this mode of painting survived much longer in the neighbouring area – the territory of the Anzabegovo-Vršnik group, so that it also appeared in the phase Anzabegovo III, which is considered synchronous with the phase Starčevo IIb (Гарашанин 1979: 95, 106), this motif may have appeared much later in the south of Serbia.

Unfortunately, the results of excavations at Rudnik, conducted between 1966 and 1984, have never been published, not even in a preliminary report. We have only summarized information regarding the site stratigraphy and portable material. The two mutually exclusive opinions about Rudnik are based on different interpretations of the stratigraphy.

Dimitrijević (1974: 74) argues that three horizons can be distinguished at Rudnik: a) an earlier horizon corresponding to the Early Neolithic, i.e. monochrome phase; b) a middle horizon corresponding to the phase Girlandoid, which is characterized by dark painting with linear and garland-like motifs, and a small percent of white painted vessels with curvilinear motifs; and c) the upper horizon corresponding to the phase Spiraloid A, which is characterized by dark, spiral painting and the occurrence of biconical shapes. This reconstruction of the Rudnik stratigraphy is based on the unpublished information provided by J. Glišić, who led the excavation (Dimitrijević 1974: 111).

On the other hand, M. Garašanin maintains that four phases can be distinguished at Rudnik. He, in common with S. Dimitrijević, interprets the earli-

est horizon as being characterized by domination of monochrome red pottery, some impresso pottery and the sporadic occurrence of barbotine, and dates it to the Early Neolithic (Гарашанин 1979: 104). The phase Rudnik II is connected with Starčevo IIa because of white and dark painting. Curvilinear motifs are not unknown in this phase, but spiral does not appear yet. Barbotine occurs more frequently. In the phase Rudnik III, considered to be synchronous with Starčevo IIb, white painting disappears, while dark painted pottery displays both curvilinear and genuine spiral ornaments. The phase Rudnik IV, brought into correlation with Starčevo III, represents the period when the spiral motifs in different variants, including the spirals ending in the shape of paws or claws, flourished. One polychrome painted fragment is noted. Organized barbotine prevails in barbotine ornamentation, and biconical forms appear among other pottery shapes (Гарашанин 1979: 136).

Due to serious disagreement between the two interpretations of the stratigraphy at Rudnik (they only agree on the earliest horizon that both authors date to the Early Neolithic), this site, in spite of its possible significance, must be discussed with reserve in the context of the Starčevo culture. If we accept that painted spirals ending in the shape of claws are chronologically important, then, on the basis of one published sample (Тасић 1998: 430, fig. 13), we can come to the conclusion that the late phase of the Starčevo culture is also represented at Rudnik along with the Early Neolithic phase. Nevertheless, no definite conclusions regarding Rudnik should be drawn prior to publishing of the material and other elements necessary for the creation of a picture that may explain the development of this settlement throughout the Neolithic. Taken as a whole, the different assumptions concerning the development of the Starčevo culture in Kosovo, which are based on unpublished or poorly published material, do not seem convincing, particularly so because they cannot be checked.

In the south of the Morava Valley excavations have been carried out at Crnokalačka Bara, Bujanj, Pavlovac and Vrtišće.

Systematic excavations at Crnokalačka Bara revealed the material displaying features that are essentially included in the definition of the phase Starčevo III, *i.e.* Spiraloid B (Тасић and Томић 1969; Dimitrijević 1974: 88; Гарашанин 1979: 135). The pottery material is characterized by domination of barbotine in the group of coarse pottery and a high percent of fine and painted pottery. Painting is almost exclusively in dark colour. Along with linear motifs, spirals also appear on a large number of vessels. There are only a few fragments with painting in white colour. Polychrome painting and biconical shapes confirm the final phase of the Starčevo culture.

As for the sites of Bujanj, Pavlovac and Vrtišće, the literature does not provide much information about the excavations conducted there, which led to their different chronological associations. The Starčevo layer at Bujanj is associated with the Girlandoid phase, *i.e.* Starčevo IIb, because of dark painted linear motifs and garlands (Dimitrijević 1974: 76; Гарашанин 1983: 8).

At Pavlovac, two Starčevo sites were excavated, but no results have ever been published (Гарашанин и Гарашанин 1958: 398). According to the available literature, the site of Čukar is assigned to the phase Starčevo IIb (Гарашанин 1973: 39; *idem* 1979: 119) because of characteristic, exclusively geometric dark painting (although a spiral appears on one fragment). Excavation was also performed at the neighbouring site of Gumnište, which was supposedly a peripheral part of Čukar. Although it was a small scale excavation (36m<sup>2</sup>) a short preliminary report was published (Сталио 1967). Spirals are noted as the major phenomenon in painted decoration, prompting the association of Gumnište with the phase Starčevo III (Гарашанин 1973: 40; *idem* 1979: 119). It is possible to claim that there is a chronological difference between them, or in other words that these sites represent a single site with horizontal stratigraphy (Гарашанин 1968: 304). However, this cannot be confirmed on the basis of the occurrence of spirals as the only differentiating element, since this motif, according to the periodization scheme by D. Garašanin, was executed from the phase Starčevo IIa on.

The results of the excavations at the site of Velika česma at Vrtište were presented in 1961, but have never been published. Judging by several painted fragments that were presented; the motifs appear to be linear and mainly executed in dark colour (Гарашанин 1971: 83). However, the presence of one fragment with painting in white (garlands with hatching in a reticular pattern) led to a different chronological association of the site at Vrtište. Namely, it is assumed that on the basis of stratigraphy (?) “the layer with white painted ornaments” can be distinguished from “the layer with motifs painted in dark colour” (Гарашанин 1971: 12), or in other words that the fragment painted in white colour is evidence that Vrtište represents the phase Girlandoid (Dimitrijević 1974: 76).

The site of Dubrava I, near Knjaževac, may be included in the group of the sites in the South Morava Valley. The material was excavated during construction works, which explains why fragments of pottery with painting in dark colour and linear and spiral motifs are most frequent (Сладић и Јовановић 1997). There is only one fragment with painting executed in white colour. Other finds are mainly fragments decorated with barbotine and incision. The site is associated with the phase Spiraloid B, *i.e.* Starčevo III (*ibid.*: 170).

Considering the character of the finds in the South Morava Valley and the amount of published material, only the chronological position of Crnokalačka bara seems to be certain. The other sites, with a few published finds, for the time being only confirm that the chronological association of a site cannot be based on a few painted fragments. If they are set apart from the whole of the pottery material, they allow the possibility to connect them with each phase suggested by D. Garašanin and S. Dimitrijević in their periodization schemes.

*Central Serbia*

After field surveys a considerable number of Starčevo sites have been noted. Excavations, varying in scale, have been carried out, but not much properly published material is available. The authors of the excavations connect almost all excavated sites, except Tečić, with the final period of the culture, *i.e.* Starčevo III.

At Tečić coarse pottery prevails with more than 80% of the total material. Barbotine appears on 70% of ornamented pottery and impresso on only 2% (Галовић 1962). Painted pottery is not common (it makes less than 1% of pottery material); it is most often painted in dark colour – with mostly linear and less frequent spiral motifs. Several white painted fragments were also found at Tečić. Polychrome painting is also represented. White colour is not of secondary importance and does not represent a bordure of dark painted motifs. Broad vertical bands with hatching in reticular pattern are executed in white colour and trimmed with dark lines (Галовић 1962: Т. I/3). If these characteristics are taken into consideration, Tečić appears to be older than Crnokalačka bara. It is associated with the phase Starčevo IIb, but also with the Spiraloid A (Гарашанин 1979: 135; Dimitrijević 1974: 87).

The pottery found at the sites associated with the phase Starčevo III (Bunar, Supska, Kusovac) displays very similar characteristics. However, the painted pottery differs quite a lot both in quantity and style. These differences are likely to come out as a result of the limited extent to which some sites have been investigated. For example, only one pit was excavated at the site of Bunar (Ветнић 1987). The contents of this pit and the layer above it consist mainly of coarse pottery (89% of all pottery material) decorated with barbotine, or very rarely with impresso. Only one fragment with a dark painted linear motif is noted to have been found. Based on the presence of biconical shapes, the site is associated with the phase Starčevo III (Ветнић 1987).

A not much larger area (45 m<sup>2</sup>) was excavated at Supska. A thin and poor Starčevo layer was assigned to the phase Starčevo IIb, and also to the closing stage of Starčevo culture (Vetnić 1974: 140; 1990: 93). According to a short report, it appears that painting was executed mainly in dark colour, occasionally in white colour, and the motifs were linear and spiral. Slightly biconical shapes are noted to have been present too (Vetnić 1988).

Kusovac belongs to the group of rare Starčevo sites where painted pottery is represented by a large number of fragments. The presence of more than 200 fragments at Kusovac (Bogdanović 2001: 118) may be explained by the bigger area that was excavated (226 m<sup>2</sup>). Barbotine prevails in coarse pottery. Painting is executed in dark, less frequently white colour, with spiral motifs being more frequent than linear ones (Bogdanović 1988: 71).

*Vojvodina*

More sites have been investigated in the northern regions of the Starčevo culture (Vojvodina, northern Croatia and south-western Hungary) than in the southern regions of Central Serbia, Kosovo and the South Morava Valley. The situation in the north is interesting because the inadequacy of the periodization proposed by S. Dimitrijević becomes more obvious here, although the author himself states that his scheme refers mainly to the northern region of the Starčevo culture, i.e. sites in southern Pannonia (Dimitrijević 1974: 73).

In the region of Banat three sites have been excavated: Starčevo, Krstićeva humka and At-Vršac. We have added the site of Vinča on the right bank of the Danube to this group.

Pottery material found at Starčevo has never been published, but it is partly known from the descriptions of painted pottery in the catalogue and the quantitative data about coarse and fine pottery (Arandelović-Garašanin 1954: 86–102). The pits 4, 6, 7 and 5A (the layer under an older floor), where fragments painted in white and dark colour were found, are associated with the phase Starčevo IIa. On the other hand, the pit 10 and the layer between two floors of the pit 5A are associated with the phase Starčevo IIb, based on the presence of only dark motifs on the fragments of painted pottery (Arandelović-Garašanin 1954: 136)

The chronological system of S. Dimitrijević sees the Starčevo pits somewhat differently: the pits 7 and 5A (the layer under the older floor, but also the deepest layer) are associated with the phase Girlandoid, the pits 6 and 5A (the layer between two floors) with the phase Spiraloid A, and the layer above the chronologically later floor of the pit 5A with the phase Spiraloid B (Dimitrijević 1974). This layer above the chronologically later floor of the pit 5A is left out of the chronological system of D. Garašanin, probably because "a number of pottery fragments with a typical Vinča character" (Arandelović-Garašanin 1954: 93) were found there.

The pit 5A is very important in both chronological systems, because it is regarded as a closed unit with a reliable vertical stratigraphy. Furthermore, the position of all other pits in Starčevo and a number of single-layered sites is determined through their comparison with the pit 5A. The periodization scheme of S. Dimitrijević takes the motifs represented in the layers of 5A as a comparative element, while in the scheme devised by D. Garašanin the comparison is made on the basis of presence/absence of white painting.

The groundlessness of the criterion presence/absence of one kind of painting in the Starčevo pits, and accordingly recognized phases, has been confirmed by a series of statistic methods as well as through the inspection of the material from Starčevo, kept in the National Museum in Belgrade (Korošec 1973: 283–291). As the most obvious example, a vessel was reconstructed with fragments coming from different layers of the pit 5A (four fragments were

found in the “well”, two in the lowest layer, one in the layer above the chronologically later floor) (Korošec 1973: 295, Pls. I/1, II). The conclusion that may be drawn from all this is that only one phase of the Starčevo culture is represented in the pits at Starčevo (including those without painted pottery).

On the other hand, Dimitrijević (1974: 68) has a completely different opinion about the stratigraphy of the pit 5A; he notes that the pit 5A could not have been used from the phase Starčevo I to IIb, or in other words as long as the settlement at Starčevo is assumed to have existed. However, he seems to have overlooked this remark completely when he was creating his chronological system. The stratigraphy of the pit 5A is actually quoted as evidence for the chronological sequence Girlandoid – Spiraloid A – Spiraloid B. Thus, what is contested on one page is then “confirmed” on the other – that the pit 5A was used over three phases of the Starčevo culture (Dimitrijević 1974: 74).

The only conclusion that inevitably has to be made is that none of the dilemmas concerning the eponym site of the Starčevo culture can be resolved without a detailed publication.

A small area (12m<sup>2</sup>) was excavated at Krstićeva humka. The pottery material, which the author associates with the phase Starčevo IIb, displays recognizable features of the final phase of the Starčevo culture: domination of barbotine in coarse pottery, dark colour painting, linear and spiral motifs, occurrence of polychromy and presence of biconical shapes (Радишић 1968). The site is associated with the phase Starčevo III, *i.e.* Spiraloid B (Гарашанин 1979: 135; Dimitrijević 1974: 77).

Some data about the site of At Vršac is available – painting is noted to have been scarce and represented by dark linear motifs, perhaps also garlands (Joanovič 1986).

Starčevo material from Vinča is only partially known (Letica 1968), and is, presumably on the basis of dark painted linear motifs and garlands, associated with the phase Starčevo IIb (Гарашанин 1984: 21). However, on the basis of the finds from the so-called tomb with dromos, it is associated with the very late degenerate phase of the Starčevo group, which corresponds to the final phase in the periodization by S. Dimitrijević (Гарашанин 1979: 123).

In Srem, five sites have been investigated. They showed fully recognizable features of the final phase of the Starčevo culture. At the sites of Golokut, Obrež-Baštine, Šašinci and Grabovac (on the right bank of the Sava river) coarse pottery with barbotine in sharp relief and so called decorative barbotine prevails (Петровић 1985; Брукнер 1960; Leković 1988; Todorović 1969). Painting is executed in dark colour; spirals, along with linear motifs, are very common, and biconical shapes are found. One kind of polychromy occurs at Golokut only. The site of Zlatara appears to vary in some characteristics from all other sites. Painted pottery is scarce and characterized by linear motifs in dark colour, which led the author of the excavation to association of this site with the phase Starčevo IIb (Leković 1995). However, if we take into consider-



ation that the existing periodizations assume that such modes of decoration occur in all phases of the Starčevo culture, and that biconical shapes were noted at Zlatara, this site is likely to represent the final phase of the Starčevo culture.

As for the region of Bačka, the only available data is that about the site of Ribnjak, which is dated to the phase Starčevo IIb/III (Бабовић 1994). Judging from the characteristics of the pottery material, it is possible to associate this site with the final phase of the Starčevo culture. Barbotine prevails in coarse pottery, biconical shapes are present, although in a small number, and painting in dark colour (vertical bands with hatching in a reticular pattern) appears on only one bowl on a hollow base. Nevertheless, the simple fact that a Vinča fragment decorated with incision and stabbing was found at the bottom of the pit-dwelling, from where the painted bowl came, indicates the possibility that the phase Starčevo III, which is the final phase of the culture and synchronous with the beginning of the Vinča culture, may be represented at Ribnjak.

### *Northern Croatia*

There are 10 sites associated with the classical and final period of the Starčevo culture in northern Croatia (Minichreiter 1992). Pottery material from these sites is said to confirm the correctness of the periodization suggested by S. Dimitrijević. It is also believed that the development of the Starčevo culture in this region through the Middle Neolithic can be followed over four phases (Minichreiter 1992: 41). However, the published material indicates that the situation in northern Croatia is very similar to the situation in Serbia – at present, only two phases (Linear B and Spiraloid B), out of the four phases suggested by S. Dimitrijević's scheme, can be distinguished and confirmed.

Two sites are associated with the phase Linear B. A modest collection of Starčevo material from the excavation at Vučedol in 1938 is associated with this phase because of the presence of fragments with dark painted linear motifs (Dimitrijević 1974: 75). Another site associated with this phase actually consists of two adjoining sites in Vinkovci, and represents a part of a large Starčevo settlement (Dimitrijević 1979: 238). After large-scale excavations in the town of Vinkovci (the excavated area covered 8000 m<sup>2</sup>) two Starčevo phases were noted (Linear B and Spiraloid B) in the vertical stratigraphy of the sites of Tržnica-Hotel and Zvijezda (Dimitrijević 1979: 243). The site Tržnica-Hotel is believed to be the best representative of the phase Linear B in the Starčevo culture territory. However, it comes as a surprise that painted pottery prevails there, making 45% of all the material. Painting is linear, in dark colour. In addition to the unusual quantity of painted pottery, there is another unusual phenomenon in this horizon appearing on one fragment – the motif of an olive branch, also painted in dark colour (Dimitrijević 1979: T. XLI/1). Barbotine prevails in coarse pottery and impresso is very rare. At the site of

Zvijezda the pottery material from one of the pits is associated with the phase Linear B. This pit also offered fragments with more complex linear compositions painted in dark colour and five white painted fragments (Dimitrijević 1979: 245).

It appears today that the modest material published so far allows the association of another two sites Našice-ciglana and Dužine near Zadubravlje with the phase Linear B. The chronological determination of the site in Našice seems quite odd since it is associated with “the phase Girlandoid, and conditionally with the phase Linear A” (Minichreiter 1992: 16, T. 4). But linear dark painted motifs, and bowls on a hollow base may well indicate the phase Linear B.

The site near Zadubravlje also seems to be incorrectly attributed. It is associated with the Early Neolithic phase Linear A, with a remark that white painting, typical of that phase, is not present, while dark linear painting is. This led to the assumption that in northern Croatia there may be another phase marked as Linear A2 (Minichreiter 1992: 35, 41). But the published material indicates the phase Linear B: vessels decorated with barbotine, rarely with impresso, linear dark painted motifs, absence of biconical shapes (Minichreiter 1990: T. 38–44).

The existence of the phase Girlandoid in northern Croatia remains unproved until today. Although the contents of the Girlandoid phase is defined with linear dark painting, which starts in the phase Linear B and appears until the end of the Starčevo culture, and arched (garland-shaped) motifs, Girlandoid is also noted to have been an era of regional diversity with “the northern region where white painting was preferred or at least equally common as dark painting, and the southern region where dark painting was almost exclusively applied” (Dimitrijević 1974: 87). Apparently, this may be the ground for the assumption that the pit at the site of Zvijezda in Vinkovci could be associated with the phase Girlandoid, or with the transition from the phase Linear B to the phase Girlandoid (Dimitrijević 1979: 246). The same argumentation is applied for the material from Sarvaš, which is also associated with the phase Girlandoid, although only five fragments with painted linear motifs were found there – one of them with painting in white colour and none with painted garlands (Dimitrijević 1979: 246).

It is almost the same when the phase Spiraloid A is discussed. This phase, which is considered the culmination of the Starčevo culture development, is defined by the occurrence of spirals as new motifs in painting, with other characteristics remaining almost unchanged. There is no site in northern Croatia where this phase is represented (Dimitrijević 1974: 87; *idem* 1979: 247).<sup>2</sup>

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<sup>2</sup> The site Kneževi vinogradi which is for the time being the only Starčevo site in Baranja, and which is associated with the phase Spiraloid A (Minichreiter 1992: 15) is most probably incorrectly attributed.

The final phase of the Starčevo culture (Spiraloid B, *i.e.* Starčevo III) is, very much like in Serbia, clearly defined and confirmed at several sites. First of all, these are the sites in the town of Vinkovci (Dimitrijević 1979: 250). There, coarse pottery decorated with barbotine (organized and so-called decorative) prevails. Painting is executed in dark colour, and, along with common linear motifs and quite frequent spirals, meandered motifs also appear. White colour is present only as a bordure of dark painted motifs. Biconical shapes are very frequent, especially at the site of Tržnica – south zone, where they make 5% of all finds.

The phase Spiraloid B is also associated with four other sites (Ždralovi, Podgorač-Breška, Vrpolje and Cernička Šagovina) where no fragment decorated with painting was found (Minichreiter 1992: 52). All other characteristics of the pottery from these sites (domination of barbotine in the group of coarse pottery, almost absolute absence of impresso, biconical shapes) confirm their association with the final phase of the Starčevo culture. By attributing these sites to the phase Spiraloid B, the assumption of the existence of a separate, degenerate manifestation of the Starčevo culture, which in its late phase presents itself in the peripheral regions at the sites like Ždralovi (Dimitrijević 1979: 252), is rejected.

Speaking about the final phase of the Starčevo culture in northern Croatia, it seems that the site of Pepelane should also be associated with the phase Spiraloid B. The characteristics of the late phase of the Starčevo culture can be clearly observed at this site. So-called decorative barbotine prevails in the group of coarse pottery, painted pottery, although almost exclusively with linear motifs, is present in a relatively large quantities, as well as biconical shapes (Minichreiter 1992: 19). As in Ždralovi, a kind of applied sticking element with spiral or angular fluting, typical of the latest phase of the Starčevo culture across the sites in south-western Hungary (Minichreiter 1992: T. 5/8–11, 7/13–21; Kalicz, Virag and Biro 1990: fig. 9a/1–4) occurs here at Pepelane.

Due to her rigid interpretation of S. Dimitrijević's periodization scheme, which takes the selection of motifs as the basic and decisive criterion for chronological assessment of the site, K. Minichreiter could not associate Pepelane with any of the many suggested phases. Painted spirals are lacking in Pepelane (although a few fragments with big painted spirals were found over the surface of the site), which led her to the introduction of a new term – Linear C, designating the phase represented in western Croatia (Minichreiter 1992: 20). The phase Linear C, represented by the finds in Pepelane, is believed to have been synchronous with the phase Spiraloid A in Baranja and eastern Slavonia (although there are no sites representing this phase in these regions). But this opinion overlooks the remarks made by the author herself that at Pepelane, along with painted pottery, "all kinds of pottery of Ždralovi type" are present, or in other words that the pottery from Ždralovi and the pottery from

Pepelane are related (Minichreiter 1992: 36). The lack of painted pottery at Ždralovi presumably resulted from the limited excavation (Minichreiter 1992: 58). Since the sites of Ždralovi type, without painted pottery, are associated with the final phase of the Starčevo culture, there is no reason why Pepelane should not be associated with the same phase.

### *Southwestern Hungary*

In southwestern Hungary the Middle Neolithic is clearest. Accepting the periodization proposed by Dimitrijević, Hungarian archaeologists have noted that only two phases of the Starčevo culture – Linear B and Spiraloid B are represented in Transdanubia. This is also confirmed by the published material (Kalicz 1990).

Sites with coarse pottery decorated with barbotine, linear motifs painted in dark colour and biconical shapes absent (which is noted as an important characteristic) are associated with the phase Linear B (Kalicz 1993: 88). The sites of Lanycsok, Barcs and Medina belong to this group (Kalicz 1990: 92).

The phase Spiraloid B is associated with the sites where barbotine prevails in coarse pottery, and impresso is almost wholly lacking. Plenty of biconical shapes, often with a concave upper cone, are found there, while painted pottery is scarce or completely lacking. This phase is represented at the sites of Becshely, Dombóvár, Harc–Nyanypuszta, Gelenhaza, Vors, Babarc (Kalicz 1990; Simon 1996; Kalicz, Virag and Biro 1998; Banffy 2000).

## CONCLUSION

After the results of the excavations of the Starčevo sites have been summarized, one may note that only three multilayered sites have been found: Rudnik and Gladnice in the south and Zvijezda and Hotel in the town of Vinkovci in the north. Since we do not have any published papers dealing with the results of the excavations at Rudnik and Gladnice (we only have two different interpretations of stratigraphy that cannot be checked or confirmed), the site in Vinkovci seems the only one where we can check and possibly confirm the chronological systems of the Starčevo culture.

The older layer at the sites of Zvijezda and Hotel is associated with the phase Linear B, while the chronologically later layer corresponds to the phase Spiraloid B, according to the periodization by Dimitrijević. But in the chronological system of Dimitrijević these two phases are not regarded as being continuous. The assumption that the situation in Vinkovci, interpreted as a break in continuity, can be explained by the existence of horizontal stratigraphy, is based on the conviction that a Girlandoid, and probably Spiraloid A horizon can be expected with certainty in the Vinkovci complex (Dimitrijević 1979: 246).

But this expectation is unrealistic as much as it is unrealistic to expect that the chronological systems of D. Garašanin and Dimitrijević can be confirmed in vertical stratigraphy, considering that the number of multilayered sites is not likely to exceed very much the number of sites already known. On the contrary, the stratigraphic relation Linear B – Spiraloid B in Vinkovci and the situation at the sites in south western Hungary allows us to see the development of the Starčevo culture from a more realistic perspective in only two phases.

As we have already pointed out, the phase Starčevo III, *i.e.* Spiraloid B, is not defined only by colour of painting, or the new motif in painted ornamentation, but is determined by several characteristics, which most often enables us to recognize the pottery material from the final phase of the Starčevo culture quite easily.

As for the other phases of the chronological systems of D. Garašanin and Dimitrijević, it has to be noted that, except for the authors of the systems themselves, no other researchers of the Starčevo culture have ever connected any site with the phase Starčevo IIa, *i.e.* the phases Girlandoid and Spiraloid A. In other words, the sites representing so-called classical period of the Starčevo culture are associated with the phase Starčevo IIb, *i.e.* Linear B. Painting found at these sites is executed mostly, *but not exclusively*, in dark colour. Motifs are most frequently, *although not exclusively*, linear, since the spiral seems to have played a secondary role in painted ornamentation at these sites. White painting, in spite of the chronological importance that both chronological systems attach to it, appears not to be important in terms of chronology.

White painting, where found, is represented by an insignificantly small number of fragments and is not considered to be an important feature of the site. The presence of white painted motifs at Crnokalačka bara and in Vinkovci confirms this, questioning at the same time the conclusion drawn only from the situation in the pit 5A in Starčevo that the sites with the motifs painted only in dark colour are of a later date than the sites where white painting is also present.

Finally, it should be repeated that in the whole territory of the Starčevo culture with semi-sedentary communities, long-lived settlements, with more dwelling horizons and dynamic development of pottery production that could manifest itself in notable typological and stylistic changes, could not be expected. Accordingly, the existing periodization schemes may be modified to include two phases only: the classical phase that can be named Starčevo II, and the final phase Starčevo III.

Taking all of this into account, studies of the Starčevo culture inevitably need to take a new course and test the possibilities opened by statistic, technological, functional, ethno-archaeological and other analyses. The first step in that direction has already been made. Analyses of the technological characteristics of pottery have shown that in the course of time the average thickness of the walls of a vessel is reduced and the ratio between organic and non-organic

admixture changes with an increase of the thermal coefficient of a vessel correlating to these characteristics (Manson 1990: 250). There have been some attempts to connect the noted changes with the economy of Starčevo communities. These communities were not sedentary in a strict sense because animal breeding played a more important role than growing crops. On one hand, given the correlation between the quantity of organic admixtures and community mobility, established on the bases of the results of ethnologic research, the reduction of these admixtures has been interpreted as a tendency towards establishing of more stable and longer-lived settlements. On the other hand, the rise of the thermal coefficient is brought into correlation with changes in the diet of Starčevo communities, and the increased importance of cooked food – cereals above all – in the final phase of the culture. This may indicate a gradual advance towards a crop-growing economy (Manson 1995).

The initial results of such analyses have made it clear that the studies of Starčevo pottery and culture, as a whole, have to progress beyond the limits of descriptive analyses of painted pottery. The studies of so-called common or coarse pottery may offer some of the complex answers to the still insufficiently studied and unexplained issues regarding the Starčevo culture.

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ДУБРАВКА НИКОЛИЋ

## РАЗВОЈ КЕРАМИКЕ У СРЕДЊЕМ НЕОЛИТУ И ХРОНОЛОШКИ СИСТЕМИ СТАРЧЕВАЧКЕ КУЛТУРЕ

### Резиме

Проучавање неолитских култура на територији Србије траје дуже од једног века. Током тог периода истраживано је и рекогносцирано више од стотину локалитета који су приписани старчевачкој култури, односно средњем неолиту (табеле 1–5). Преглед истражених локалитета и публикованих резултата истраживања показује да ниједно старчевачко насеље није истражено у целини, као и то да ни данас нема комплексних истраживачких пројеката који би омогућили проучавање различитих аспеката ове културе. Резултати истраживања старчевачких локалитета показују да су на територији целе културе позната само три вишеслојна локалитета: Рудник и Гладнице на југу, а на северу локације Звијезда и Хотел у Винковцима. Како о резултатима истраживања Рудника и Гладница не постоји ниједан публиковани рад, већ само две различите интерпретације стратиграфије које није могуће проверити и потврдити, локалитет у Винковцима пружа једину могућност за проверу и потврду хронолошких система старчевачке културе.

Старији слој на локацијама Звијезда и Хотел приписан је фази линеар Б, док млађи одговара фази спиралоид Б према периодизацији С. Димитријевића. Чини се да стратиграфски однос линеар Б – спиралоид Б у Винковцима, али и ситуација на локалитетима југозападне Мађарске, пружа могућност да се реалније, кроз само две фазе сагледа развој старчевачке културе.

Наиме, фаза Старчево III у периодизацији Д. Гарашанин, односно спиралоид Б у периодизацији С. Димитријевића, није дефинисана само бојом којом се слика, односно новим мотивом у сликаној орнаментици, већ је одређује неколико карактеристика, због чега се керамички материјал завршне фазе старчевачке културе најчешће лако препознаје.

Када су у питању остале фазе хронолошких система Д. Гарашанин и С. Димитријевића, уочљиво је да, осим самих аутора тих система, истраживачи старчевачке културе ниједан локалитет нису довели у везу са фазом Старчево IIa, односно са фазама гирландоид и спиралоид А. Другим речима, локалитети који репрезентују тзв. класични период старчевачке културе приписани су фази Старчево IIb, односно линеар Б. Како се на територији старчевачке културе, са семиседентарним заједницама, не могу очекивати дуготрајнија насеља са више стамбених хоризоната и динамичним развојем керамичке продукције који би се исказивао знатним типолошким и стилским променама, постојеће периодизације могле би се кориговати и свести на две фазе: класичну фазу која би се могла означити као Старчево II, и завршну фазу Старчево III.

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