

# FROM HUNTER-GATHERERS TO FARMERS

HUMAN ADAPTATIONS  
AT THE END OF THE PLEISTOCENE  
AND THE FIRST PART  
OF THE HOLOCENE

Edited by Monica Mărgărit & Adina Boroneanț



# FROM HUNTER-GATHERERS TO FARMERS

Human adaptations at the end of the Pleistocene  
and the first part of the Holocene

Papers in Honour of Clive Bonsall

Edited by  
Monica Mărgărit and Adina Boroneanț

Cover: Dan Iulian Mărgărit

Photo cover: The Danube at Cazanele Mici (the Smaller Cauldrons) in the Iron Gates (photo Adina Boroneanț).

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**PROFESSOR CLIVE BONSALE**



## EDITORIAL

It is difficult to capture one's life in a few words, a few photographs or even a book. The papers in the present volume will hopefully reflect a part of Clive Bonsall's scientific interests during a career that has started some 45 years ago. Their diversity is impressive: from radiocarbon dating, environmental changes, human–environment interactions, funerary behaviour, to paleogenetics and stable isotopes, reconstruction of ancient diets and obsidian sourcing, most of them in close connection to the hunter-gatherer and first farmer communities of Europe. His studies stretched over a large geographical area, focusing recently mainly around the Balkans and the neighbouring regions. He has conducted fieldwork in Britain, Scotland, Romania and Slovenia, edited 9 books and published over 160 papers, book-chapters, notes, as well as book and paper reviews. His main publications include: "The Mesolithic in Europe" (1989), "The Human Use of Caves" (1997), "The Iron Gates in Prehistory" (2008), "Submerged Prehistory" (2011) and "Not Just for Show: The Archaeology of Beads, Beadwork and Personal Ornaments" (2017).

His substantial work in southeastern Europe is reflected by his long-standing collaboration and friendship with many Romanian and Bulgarian archaeologists, and has received due recognition: Clive Bonsall is an Honorary Member of both the "Vasile Pârvan" Institute of Archaeology in Bucharest and the National Institute of Archaeology with Museum in Sofia. His contribution to the archaeology of the Iron Gates has earned him the recognition of the Serbian archaeologists working in the area. His many other research interests and personal collaborations are also reflected in the present volume.

We are grateful to all our contributors: colleagues and friends, new and old, former students and collaborators whose archaeological interests met Clive's if only briefly. We were happy to see that so many of us were able to mobilize in such a short time. We would like to thank all those who answered our call and at a time when every minute of our professional lives is carefully planned in advance, helped us put together this volume in less than a year. They have endured and complied with our constant deadline reminders and requests, checked and re-checked their manuscripts in record times, gracefully complying with the comments and suggestions from the reviewers, and were most patient with our editorial work.

Each paper was submitted to a double reviewing. We would like to also thank our colleagues from various disciplines who accepted to anonymously review the contributions. Their hard and serious work significantly improved the overall content of the volume.

The outcome has exceeded our most optimistic expectation: a volume that geographically covers almost the entire European continent, from Britain to Russia and Greece and touches on most important issues of hunter-gather adaptations through time. A volume brought together by chronological landmarks (the end of the Pleistocene and the beginning of the Holocene) and geographical areas but also by common approaches to issues such as human-animal interactions, exploitation and use of raw materials, and subsistence strategies.

We chose to organize the papers on three main sections, while within the respective theme they follow in chronological succession. The archaeology of the Iron Gates opens the volume, given Clive Bonsall's substantial contribution to the local early prehistory. The eight contributions cover a large range of subjects, from physical anthropology (Andrei Soficaru), re-interpretation of earlier excavations and the subsequent collections (Adina Boroneanț), stone artefacts (Dragana Antonović, Vidan Dimić, Andrej Starović and Dušan Borić) to the study of faunal remains and subsequent paleo-dietary issues (Adrian Bălășescu, Adina Boroneanț and Valentin Radu; Dragana Filipović, Jelena

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Jovanović and Dragana Rančić; Ivana Živaljević, Vesna Dimitrijević and Sofija Stefanović), and osseous industries (Monica Mărgărit and Adina Boroneanț; Selena Vitezović). These studies illustrate the still immense research potential of the Iron Gates region despite the fact that most of the sites have been flooded many decades ago.

During the editing of the volume it became obvious that while some of the contributions focused on the evidence from a certain site, others were more of a regional synthesis. This latter section begins with a most interesting paper bringing together world history and underwater archaeology (Jonathan Benjamin and Geoff Bailey). The following nine articles deal with subjects such as social inequalities seen through the study of burial practices (Judith M. Grünberg), lifeways, adaptations and subsistence strategies of the early prehistoric communities (Agathe Reingruber; Mihael Budja; Annie Brown and Haskel Greenfield; Kenneth Ritchie), raw materials acquisition and exploitation (Tomasz Płonka, Maria Gurova, Eva David), exploitation, management and trade of „exotic” goods (Vassil Nikolov).

The nine papers focusing on individual sites present case studies that illustrate the nature of the current research, the rich opportunities offered by the growing range of scientific techniques and their applications to existing collections. This series of papers starts at Zemunica Cave on the coast of the Eastern Adriatic (Siniša Radović and Ankica Oros Sršen), explores the Mesolithic occupations at Malga Rondetto (Paolo Biagi, Elisabetta Starnini and Renato Nisbet) and Grotta dell'Edera (Barbara Voytek) in Italy, the Mesolithic ornamented weapons of Motala in Sweden (Lars Larsson and Fredrik Molin), ending this Mesolithic journey among the shell middens on the western coast of Scotland (Catriona Pickard). The transition to the Neolithic happens among the beaver tools at Zamojste 2 in Russia (Olga Lozovskaya, Charlotte Leduc and Louis Chaix). The Neolithic Age finds us further south into Bulgaria, exploring the pitfields of Sarnevo (Krum Bacvarov and John Gorczyk) and the gold of Varna (Tanya Dzhanfezova), while during the Bronze Age roe deer hunting is resurrected at Paks–Gyapa in Hungary (László Bartosiewicz and Erika Gál).

The volume presents altogether new results in recent research and new information resulted from the study of old collections. We also hope it points out directions for future research.

It is with great joy that we present Clive Bonsall this volume, as a token of both our appreciation and friendship, for his contributions to the Early Prehistory of Europe in general, and of Southeastern Europe in special.

*The Editors*

## CLIVE BONSTALL – SOME YEARS AFTER

When Clive Bonsall came to Romania in 1991, I was taking an undergraduate degree in computers and wasn't even considering becoming an archaeologist. Together with my mother and brother, I used to accompany my father Vasile Boroneanț every year on his summer digs at Schela Cladovei. It was just over a year after the fall of the communist regime in Romania, and everybody at the site was waiting impatiently for the arrival of a team of archaeologists from Great Britain, who were coming to visit the site and perhaps start a joint research project. It must have been past mid-night of the expected day when my father woke us up – because the “English” had arrived... Four very tired people (Clive Bonsall, Kathleen McSweeney, Sue Stalibrass and Mark Macklin – and not all “English”) in a Land Rover but still managing to smile... They had spent 10 hours at the border between Hungary and Romania and their first encounter with Romanian cuisine had been carp-head soup (the only thing available on the menu) in Arad... I believe Clive still remembers the fish-heads sticking out of the large bowl (obviously a reminder of the Lepenski Vir sculpted boulders...).

The visit at the site went well and the next year the research project commenced, but not uneventfully. It must have been sheer passion for archaeology and keen interest for the Iron Gates Mesolithic that made Clive come back the second year, after having (during the previous first year) the minibus tyres slashed several times by the curious and mischievous Schela Cladovei lads, bits of the flotation equipment vanishing into thin air and two pairs of his new Levis jeans (a rarity in Romania in those days) mysteriously disappearing from his room at the youth camp in Gura Văii....Not to mention the breaking down of the minibus in a country where there were no spare parts for western cars.

Still, here he is, working in Romania, 26 years later...

And following the first four years of the Schela Cladovei project I had switched to a degree in archaeology (and Clive bears much of the blame...). And we are still excavating at Schela Cladovei...and at least Clive looks unchanged... It is his dedication to the archaeology of the area that has made this second research project possible, project going on successfully for over ten years now.

As it was with me, Clive has influenced the lives of many (older and younger) archaeologists and perhaps future archaeologists. He is an inspiration to our students from the Schela Cladovei excavation and a respected professional among Romanian archaeologists. He has always been ready to help my fellow colleagues, whether it was field work, collecting samples, editing or mere professional advice, although such work had rarely anything to do with the archaeology of the Iron Gates. But during his entire activity in this area, he acted as a “human bridge” between Romanian, Bulgarian and Serbian archaeologies, facilitating professional exchanges, easing the access to modern technologies, information and publications.

Clive Bonsall was/is equally interested in other geographical areas and research topics of European (and not only...) archaeology, and the number of people contributing to this volume testify to the impact he had on individuals and archaeologies elsewhere outside Romania.

This may not be the typical introduction to a Festschrift volume... but then, Clive is not a typical person. Rather cynical but warm hearted underneath, with a wonderful (and at times very dry) sense of humour, and great charm (when he wants it...) he makes a great project co-director and fellow-worker.

I can only but hope that our collaboration would go on for many years from now and that we'll get to see the end of the Schela Cladovei trench we started before we both retire!

Bucharest, September 2017

*Adina Boroneanț*



## PUBLICATIONS OF CLIVE BONSTALL

### **Books**

- Bar-Yosef Mayer, D.A., Choyke, A. & **Bonsall, C.** (eds). 2017. *Not Just for Show: The Archaeology of Beads, Beadwork and Personal Ornaments*. Oxford, Oxbow Books.
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# GROUND STONE ARTEFACTS FROM ARIA BABI

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**Abstract:** The Early Neolithic settlement at the site of Aria Babi (the Danube Gorges or Iron Gates area, northeastern Serbia) is chronologically contemporaneous with the Starčevo horizon at Lepenski Vir, and it is located in its immediate vicinity. Our analysis of the stone tools encompassed the material from trench 1–2/2005, investigated in 2005 and 2006. Judging on the basis of the ground stone assemblage from this site, and with the same conclusion reached based on the ceramic analysis, a rural household was identified in this place, in a small settlement with dispersed dug-in features, typical of the Starčevo culture. In this household, the every-day life of the community was probably focused on farming. There were items found which were used for food preparation – aside from pottery, such as stone querns – but there were also tools and household items produced from materials softer than stone, such as wood and bone, which were not preserved. Various fragments of raw material, not so numerous in this assemblage, indirectly point to a small-scale ground stone tool production at this place. The secondary use of fragmented abrasive tools bears witness to, in most cases, expedient tools used by the inhabitants of this household. It is probable that in the mountainous hinterland of the Early Neolithic sites discovered along the Danube's banks in this region existed smaller villages which provided both agricultural and perhaps also some artisanal products.

**Key words:** ground stone tools, Neolithic, Starčevo culture, Danube Gorges.

## Introduction

The site of Aria Babi (translating from the Vlach language as “the old-woman’s threshing floor”) is located in northeastern Serbia, on the slopes of Košobrdo, in the hinterland of the Danube Gorges area, at an altitude between 310 and 318 m ASL (Fig. 1). The site was investigated from 2004 to 2006 as part of the project “Prehistory of North-East Serbia”, directed by Dušan Borić of the University of Cambridge at the time, and Miloš Jevtić of the Faculty of Philosophy, Belgrade (Borić and Starović 2006; Borić 2007. 36-39; Borić 2008. 26-29; Borić 2011, 183). The site is situated at a

small distance from the old main road Beograd–Kladovo, on the steep northern slope, with an 18° inclination towards the Danube, covering the surface of ca 0.8 ha. The site is located in the immediate vicinity of Lepenski Vir and the Early Neolithic rockshelter of Lepenski Abri, situated several meters above Lepenski Vir (Jevtić 1983), in their hinterland (Fig. 2).

The existence of an Early Neolithic settlement in this place was first noticed by the owner of the land on which the site is situated. During regular works on the field, he

used to dug up and gather surface finds – chipped stone artefacts made from “Balkan” flint, which was a typical raw material of the Early Neolithic in the central and northern Balkans. During the surface survey of the field, at the end of October 2004, pieces of pottery typical of the Starčevo culture were gathered, as well as tools and raw materials made of different types of abrasive stones (querns and groundstones) and polished stone tools. Immediately after that, trench excavations were undertaken, with several test-trenches being opened. The existence of a single-culture layer site was established. The layer is mostly homogenous, and it is constituted by a vertisol of dark brownish colour with dark yellow-reddish lenses. After the removal of the ploughed layer (with an average thickness of 0.2–0.3 m), a dugout with soil darker than the rest of the layer was noticed in the first excavated trench. No archaeological material was found when this dugout was emptied. At the depth of only 0.5 m, pebbles of grey limestone were found, forming a sterile rocky bedrock (the depth of the cultural layer varied from 0.5 up to 0.8 m). The layer contained fragments of Starčevo pottery, “Balkan” flint, as well as fragments of abrasive tools. The Starčevo pottery sherds were considerably fragmented, with worn-out surfaces, which, along with the complete absence of bones, can be interpreted as the consequence of soil acidity.

In 2005 more extensive research was undertaken. A surface of 40 m<sup>2</sup> was investigated in two connected trenches, 1/2005 and 2/2005, opened in the western part of the site, oriented approximately along the east–west axis, parallel with the steep slope of Košobrdo (Fig. 3). Four layers were identified: 1. surface layer of dark grey-black ploughed soil, with the average thickness of 0.3 m, in which a considerably quantity of broken pottery fragments were found, as well as small pieces of daub and a large number of worked stone artefacts; 2. layer of compact light brownish soil, with the thickness of up to 0.25 m, not

disturbed by ploughing and directly overlying the sterile, representing the archaeological horizon of the settlement; 3. sterile layer beginning at the depth of only 0.5 m below the surface, and consisting of light yellow clayish earth without any traces of anthropic activity, with fragments of red ammonites; 4. rocky bedrock consisting of grey, Baramian limestone<sup>1</sup>.

In the eastern part of trench 1/2005, in the upper part of the undisturbed archaeological layer (the second stratigraphic unit from the surface), the finds were scattered across the investigated surface, while in the lower part of this layer they were concentrated in the central part of the excavated area (Fig. 3). The concentration of finds, with considerably larger fragments of vessels and stone tools, was followed by a change in the colour and the structure of the soil. These most probably indicate the existence of remains of a dug-in feature, whose upper part was destroyed by erosion and ploughing. Near the bottom of this feature, the zone of black, loose infill and a concentration of finds narrowed down to ca. 8 m<sup>2</sup> in the central part of the excavated area.

Due to the absence of preserved traces of an upper construction (other than minor daub fragments), it was not possible to determine the purpose of this feature with any certainty.

The most numerous finds came in the form of pottery fragments, mostly from larger spherical bowls, produced in a rough manner and with roughly worked-upon surfaces (Borić 2011. 184. Fig. 17). They were most commonly fired to achieve light brownish tones, while their cross-sections indicated low firing temperatures. The pottery was made of clay with admixtures of quartzite and silica sand. There were also fragments of shallow conical bowls and several fragments of vessels of higher quality, with a footing or a hollow footing. As for the ornamental techniques, only finger imprints and pinches were noted, as well as plastic appliqués with regular imprints in the shape of garlands and horizontal strips. There were neither finer

vessels with thinner walls nor painted and red-polished ceramics, typical for the pottery of the Early Neolithic of the Danube Gorges area (Jovanović 1987). This may be the consequence of the already mentioned acidity of the soil and the frequent ploughing which disturbed the layers and destroyed the ceramic finds, but it is also possible that finer pottery was not used at all in what was obviously a rural household.

The largest part of the knapped stone artefacts (over 100) was made from the already mentioned raw material, the "Balkan" flint (Borić 2011. 185. Fig. 18). The following types of tools were represented: retouched blades, scrapers, sidescrapers on flakes, borers and one burin on a retouched truncation. Aside from those, one flint artefact made of dark brownish transparent flint with a pronounced glow on one area of the blade indicated its use in cutting plant fibres - maybe as a sickle. There were also three minor flakes of black obsidian, the geo-chemical characterization of which points to the Carpathian source.<sup>2</sup>

The finds from Aria Babi can be brought into direct connection with the layer of the Starčevo culture material at Lepenski Vir (Perić and Nikolić 2004). The characteristics of the discovered material indicate that the most probable relative chronological determination of this site is within phase IIb of the advanced Starčevo culture (according to the chronology established in Arandelović-Garašanin 1954), i.e. in the period between 5900 and 5500 cal BC.

### **Ground stone tools**

The analysis encompassed the stone material from trenches 1/2005 and 2/2005. The stone artefacts in these trenches at Aria Babi were numerous and they were discovered in all parts and layers of the excavated area. They consist of tools from polished (axes and adzes) and abrasive stones (groundstones, whetstones, pounders and querns), as well as fragments of raw materials that had been used to make them. In total, from all

excavation layers, 1100 stone finds were discovered. Fragments without any processing and use-wear traces prevailed, in a total of 933 items (84.82 %). They could be interpreted both as fragments of larger tools without any worked or used surfaces left, and as mere fragments of raw material, discarded during the manufacturing process. A sixth part of the collection consists of worked fragments or/and bearing use-wear traces (167 pieces, 15.2 %), and from this part of the assemblage the exact tool shape was determined for only 81 specimens (Table 1).

### **Tools with a cutting edge**

The tools with a cutting edge were represented by four typologically recognizable examples (Fig. 4). They were all damaged, sometimes with traces of retouching and secondary use.

In the central part of the excavated area, in the immediate vicinity of the Starčevo feature, a fragmented axe was found, made of polished stone, with parallel lateral sides, a semi-circular cross-section and an arched cutting edge, damaged by use (Fig. 4/1).

Adzes were slightly more numerous, which is a common feature for the collections of ground stone materials found within habitation features. One adze, found in the surface layer, with its fanlike shape and a cutting edge wider than the butt end, with a semi-circular cross-section and its manufacturing technique, represents a tool emblematic for the Late Starčevo and Early Vinča period in the Central Balkans (Fig. 4/3), while another one, trapezoid in shape, with the cutting edge narrower than the butt end, given the raw material it was made from (chlorite schist of light green colour) is an example more commonly linked to the Early Neolithic (Fig. 4/2). The use-wear traces on the latter indicate that the adze had not been used for a long period. All tools have a length of max. 10 cm, which puts them into the group of tools employed for fine wood-working, bark removal, hollowing wooden segments or perhaps making wooden vessels.

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**Table 1.** Percentage distribution of different types of artefacts from Aria Babi.

Type of tool	Numerical and percentage distribution	Raw material
Axes	1 (0.09 %)	fine-grained metamorphosed sandstone
Adzes	3 (0.27 %)	fine-grained metamorphosed sandstone, crystalline schist
Atypical fragments of tools with cutting edge	6 (0.55 %)	fine-grained metamorphosed sandstone
Hammers	1 (0.09 %)	quartzite
Grindstones	74 (6.73 %)	fine- and medium-grained quartz sandstones, conglomeratic sandstone, amphibolite
Whetstones	4 (0.36 %)	fine- and medium-grained quartz sandstones, conglomeratic sandstone, amphibolite
Pounders	23 (2.09 %)	fine- and medium-grained quartz sandstones, conglomeratic sandstone, amphibolite
Querns	17 (1.55 %)	fine- and medium-grained quartz sandstones, conglomeratic sandstone, amphibolite
Abrasive tools of unknown type	38 (3.45 %)	fine- and medium-grained quartz sandstones, conglomeratic sandstone, amphibolite
Fragments without traces of manufacturing and use	933 (84.82 %)	fine- and medium-grained quartz sandstones, conglomeratic sandstone, amphibolite, fine-grained metamorphosed sandstone
<b>Total</b>	<b>1100 artefacts</b>	

The polished stone tools with a cutting edge were also used for wood-working. Axes, as multifunctional tools, were used for a wide spectre of wood-working activities, but they were most commonly fit for heavy-duty activities, such as cutting down and splitting wood, trimming branches, etc. Unlike them, adzes were most probably used for more refined activities, including spalling and hollowing, e.g. for making household items (modest furniture, troughs, vessels) as well as various constructive elements (Dimić 2015: 53-58). For this reason, as a general rule, axes are rarely found in prehistoric settlements, unlike adzes, which are a regular occurrence in the assemblages, and are mostly found outside the habitation features (Antonović 2003: 53-54; Antonović 2013a: 31). Atypical fragments of tools with a cutting edge, and fragments of raw materials were somewhat more numerous than the tools themselves. Same as the tools, they were discovered in the area around Feature 1. The fragments of raw material, namely the fine grained metamorphosed

sandstones and crystal schists, indicated the possibility that the axes and adzes were produced in the settlement, or at least repaired after being damaged and broken. The raw material itself was not of a particularly high quality, certainly not as good as the one used for making the same type of tools at Lepenski Vir (Antonović 2006: 17-20; Cvetković and Resimić-Šarić 2006).<sup>3</sup> The quality of the raw material used at Lepenski Vir bears testimony to the presence of experienced workmen and the knowledge of the geological availability within the wider surroundings of the settlement, while the raw materials used at Aria Babi indicate that the local inhabitants did not search very far for particularly good raw materials and they probably used stones found in the immediate vicinity of their settlement.

#### **Abrasive tools**

The abrasive tools and the fragments of the raw materials used in their production were very numerous (Table 1; Fig. 5). The most

common ones were groundstones, which obviously had a wide range of applications in the every-day life of the inhabitants of the Starčevo settlement at Aria Babi. Regardless of their number, there is no notable diversity in their shape, nor were they made in a refined manner. Not a single tool was found complete, only fragments, and only some of them were of larger dimensions, enabling us to determine the shape of a given tool (Fig. 6). Large, flat immovable groundstones with one or two flat working surfaces prevailed. The use of both sides of the groundstones was a common occurrence at the settlements where there were no sources of stone in their vicinity, which was not the case for Aria Babi. Therefore, the maximal usage of abrasive tools was not the result of the lack of raw materials or the absence of workmen for making the stone tools. It is very probable that the abrasive tools were used for making and repairing simple wooden and bone tools<sup>4</sup>, which did not require complete abrasive tools with well-defined working surfaces, such as those necessary for the making of stone objects. This supposition is confirmed by the presence of a large number of fragments of abrasive tools, with traces of secondary use, and which classify as small hand-groundstones. Unworked sandstone pebbles were also used as small hand-groundstones, but they exhibited clear traces of being used on softer materials, such as bone and wood (Fig. 7). The groundstones were made of fine-grained sandstones, with a high content of quartz. The uniformity of the raw material choices suggests that the same source was used for all the abrasive tools from Aria Babi.

Whetstones for fine work and the sharpening of blades, awls and needles are quite a rare occurrence at this site. Only a few fragments were found outside Feature 1 within the cultural layer and they differ from the groundstones by their almost completely polished working surface and the raw material, namely very fine-grained compact sandstone.

Quern fragments were relatively numerous at Aria Babi (Table 1; Fig. 5), but not a single complete item was preserved, not even larger fragments which could have helped reconstruct the shapes of these tools (Fig. 8). Based on the existing fragments, it appears they were all made of very compact medium-grained sandstones. Great macroscopic similarity between the raw materials used for the querns suggested the possibility that the rocks used for their manufacture had been taken from the same source area, most probably from the same place. The choice of good quality raw material for making querns was noted on many sites in Serbia throughout the Neolithic. At the sites of Masinske njive and Jaričište, discovered during rescue excavations at the Kolubara colliery in north-western Serbia, the same raw material was used for querns from the Early Neolithic throughout the end of the Eneolithic (Antonović 2013b; Šarić *et al.* in press). At Vinča-Belo Brdo, in the Late Vinča culture deposits, querns were made exclusively from peridotite breccia which came from the same ore deposit (Cvetković and Šarić 2004).

Most of the quern fragments preserve on parts of their working surface clear traces of use, namely, polishing and parallel longitudinal creases (Fig. 8). The fragmented querns had also a secondary use as pounders, i.e. querns which were held in hand and used for grinding grains.

### **Conclusion**

A first impression apparent after the examination of the stone artefacts from Aria Babi refers to their considerable fragmentation. Considering the fact that the archaeological layer is located very shallow below the surface (it begins at the depth of only 0.3 m) and that the site is in the middle of cultivated fields, it is quite certain that decades of regular ploughing made the archaeological material grow ever more fragmented and scattered across the surface of the site. This is why today, on the basis of the horizontal distribution of the finds, it is



possible only to establish that the greatest concentration of finds was in Feature 1 and its immediate vicinity, spreading along the southwest–northeast line, in exactly the same direction as the ploughing (Fig. 9). This horizontal distribution is identical both for the unworked finds and those with no use-wear traces, and the fragmented (but typologically defined) tools.

The large degree of fragmentation of the finds (pieces longer than 10 cm were rare) and the lack of complete items makes an overview of the typological character of this stone collection more difficult. However, the fragmentation is a good indicator of the quality level of the stone tools. Raw materials of lower quality could not have held out against several decades of ploughing. The raw materials used for making the stone tools came from a small number of sources (deposits), hence, parts of rocks with natural cracks and admixtures of other rocks were also used, and thus made the raw material more fragile and less resistant to blows. Fragments of raw materials of a somewhat higher quality were also noted in this collection, and those were precisely the ones that enabled the identification of the tool types.

Judging on the basis of the stone finds, and with the same conclusion reached by the ceramic analysis, Feature 1 was a rural household within a small settlement with dispersed dug-in features, typical of the Starčevo culture. The people who inhabited this location might have been agriculturalists, perhaps focusing on animal husbandry, though the lack of osteological material (due to the soil acidity) cannot confirm this hypothesis with absolute certainty. The recovered artefacts had been used for food preparation, and apart from pottery, they were mostly stone querns. There is indirect evidence (on the basis of the analysis of the ground stone tools) pointing also towards the production of artefacts from raw materials

softer than stone, such as wood and bone. There were no rough-outs of stone tools recorded, nor flakes from fine grained rocks, such as crystal schists and metamorphosed sandstones, the basic raw materials for making axes and adzes (a clear indicator for the existence of workshops for this type of stone tools). Raw materials fragments, although not very numerous, indirectly suggest that some small-scale stone tools production should be envisaged here. The secondary use of fragmented abrasive tools testifies to the fact that in most cases expedient tools were sufficient to the inhabitants of the household. It is notable that in the settlement, regardless of the great amount of sandstone fragments, no organized production of abrasive tools was observed, and, therefore, it is suggested that they were either made outside the settlement or in another part of it which has not yet been investigated.

The analysis of the ground stone tools, as well as the earlier analysis of the pottery finds, allowed us to conclude that there was a small village settlement at Aria Babi, contemporaneous with the Early Neolithic Starčevo horizon at Lepenski Vir. It is probable that in the mountainous hinterland of the sites located along the banks of the Danube (Lepenski Vir, Padina, Stubica) existed smaller settlements which supplied the main sites with both agricultural and certain artisanal products. The settlement at Aria Babi certainly had no artisanal production to offer, at least not in the area investigated in 2005 and 2006, hence, we may assume that its basic function was food production. However, for the moment, this must remain a mere speculation, given the fact that only a small part of the site was examined and that further surveys of the Danube hinterland are needed in order to locate other similar small settlements that might have been situated in the hills above and beyond the banks of the Danube River.

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<sup>1</sup> The expertise concerning the geological age of the rocky bedrock was provided by Profs. Dragoman Rabrenović and Dragan Milovanović, both of the Faculty of Mining and Geology, University of Belgrade.

<sup>2</sup> Compositional analysis was performed at the Laboratory of the University of California at Berkeley; personal communication, Boban Tripković 2006.

<sup>3</sup> Preliminary macroscopic analysis of the type of raw materials used at Aria Babi was performed by one of the authors (DA).

<sup>4</sup> Unfortunately, due to the acidity of the soil, the bone material was not preserved, and therefore we can only assume that tools and household items made of bones were used in the settlement.

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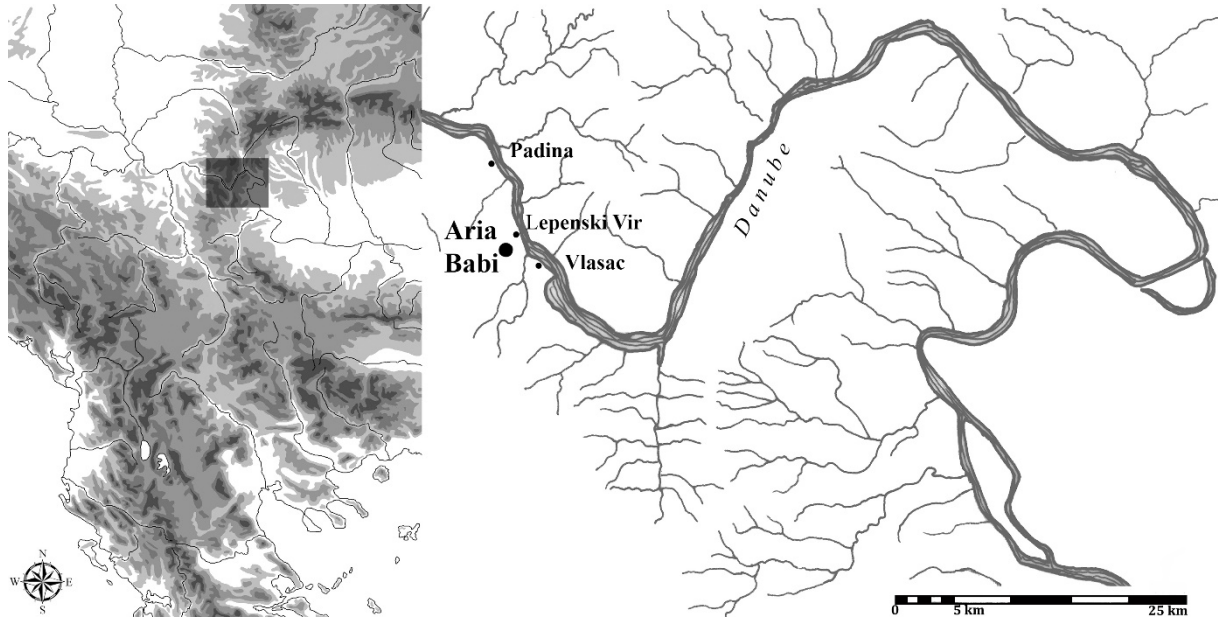
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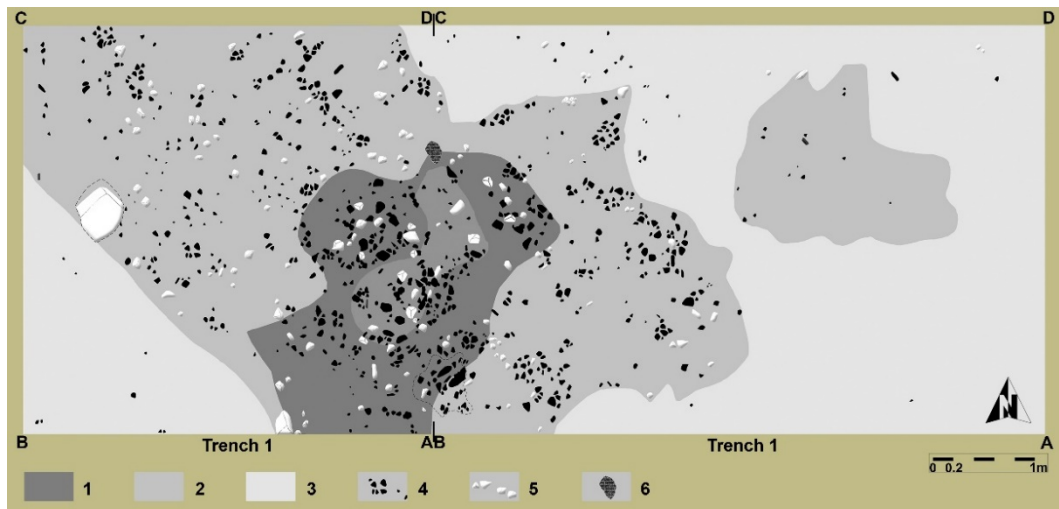


**Figure 1.** Map of the Danube Gorges showing the location of the Early Neolithic settlement at Aria Babi.



**Figure 2.** Location of the sites at Aria Babi, Lepenski Vir and Lepenski Abri (view from the Danube).

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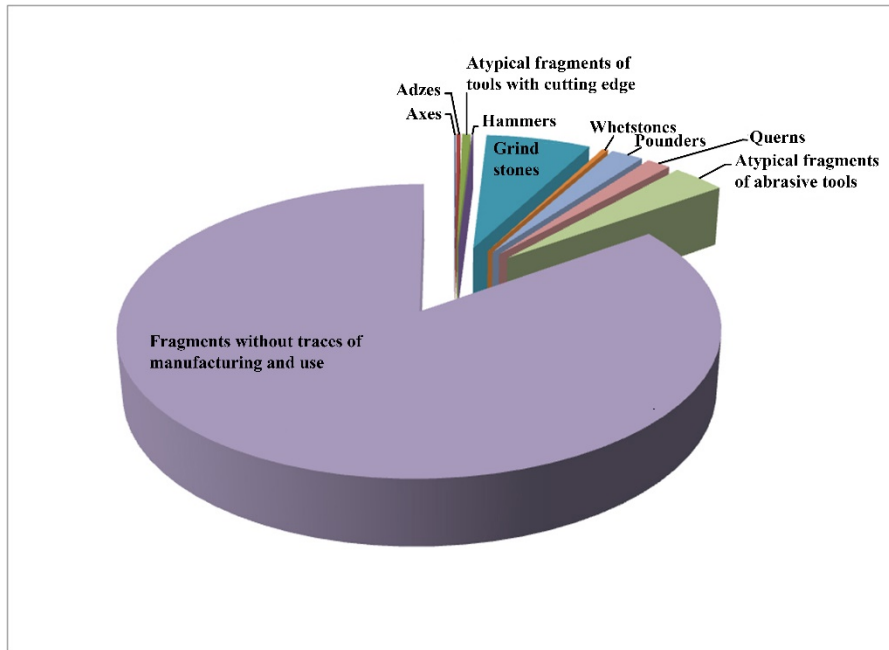
**Figure 3.** The Early Neolithic layer at Aria Babi with the distribution of finds: 1. black soil (Feature 1); 2. light brown soil; 3. light yellow sterile soil; 4. pottery; 5. ground and abrasive stone; 6. daub.



**Figure 4.** Ground stone tools with a cutting edge from Aria Babi: 1. fragmented axe (AB<sub>1</sub>/05-U<sub>31</sub>-08); 2. fragmented adze (AB<sub>2</sub>/05-2U<sub>7</sub>-05); 3. adze (AB<sub>1</sub>/05-U<sub>01</sub>-13).



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**Figure 5.** The distribution of different types of artifacts from Aria Babi.

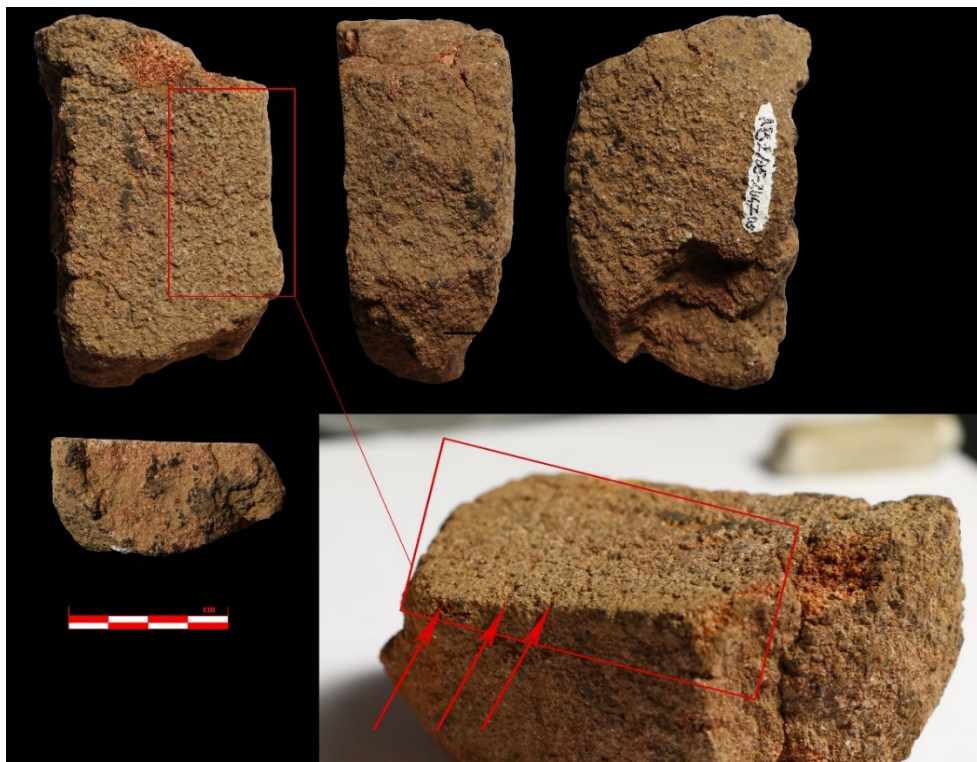


**Figure 6.** Fragmented static grindstones from Aria Babi: 1. AB1/05-U115-05; 2. AB1-05-U82-07; 3. AB2-05-2U20-01.

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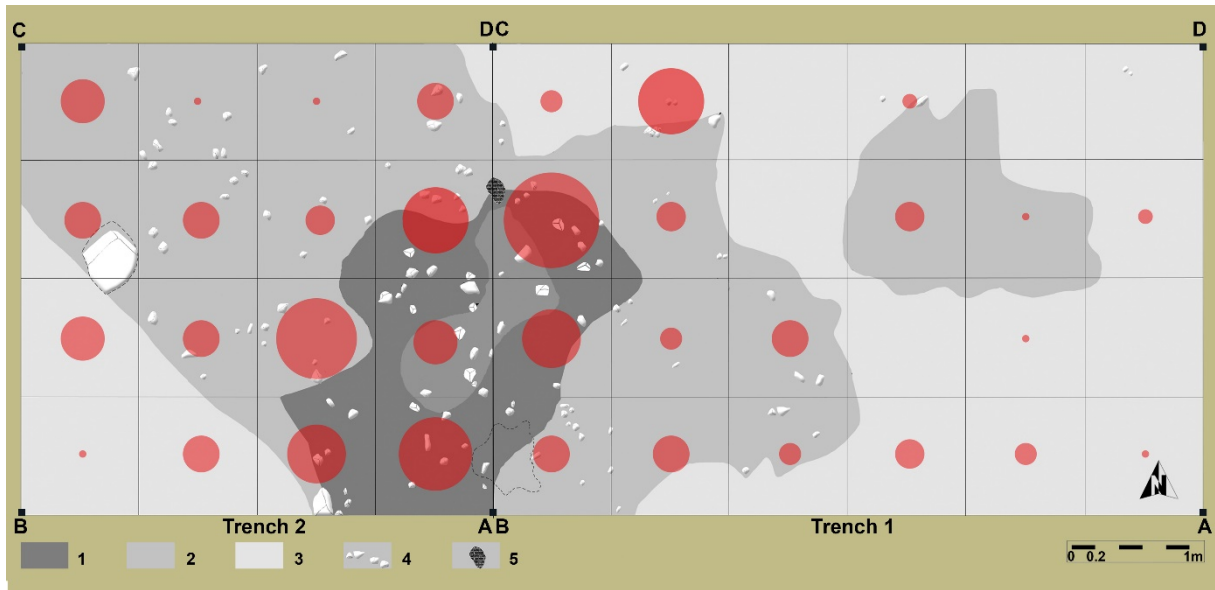


**Figure 7.** Handheld grindstone for the grinding pottery, bone or wood (AB1-05-U31-09). To the bottom right: the ground working surface with grooves as traces of use.



**Figure 8.** Fragmented quern, secondarily used as a pounder (AB2-05-2U47-05). To the bottom right: the ground working surface with grooves as traces of use.

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**Figure 9.** Horizontal distribution of the stone artifacts from the Early Neolithic Starčevo culture layer at Aria Babi: 1. black soil (Feature 1); 2. light brown soil; 3. light yellow sterile soil; 4. ground and abrasive stone; 5. daub.



