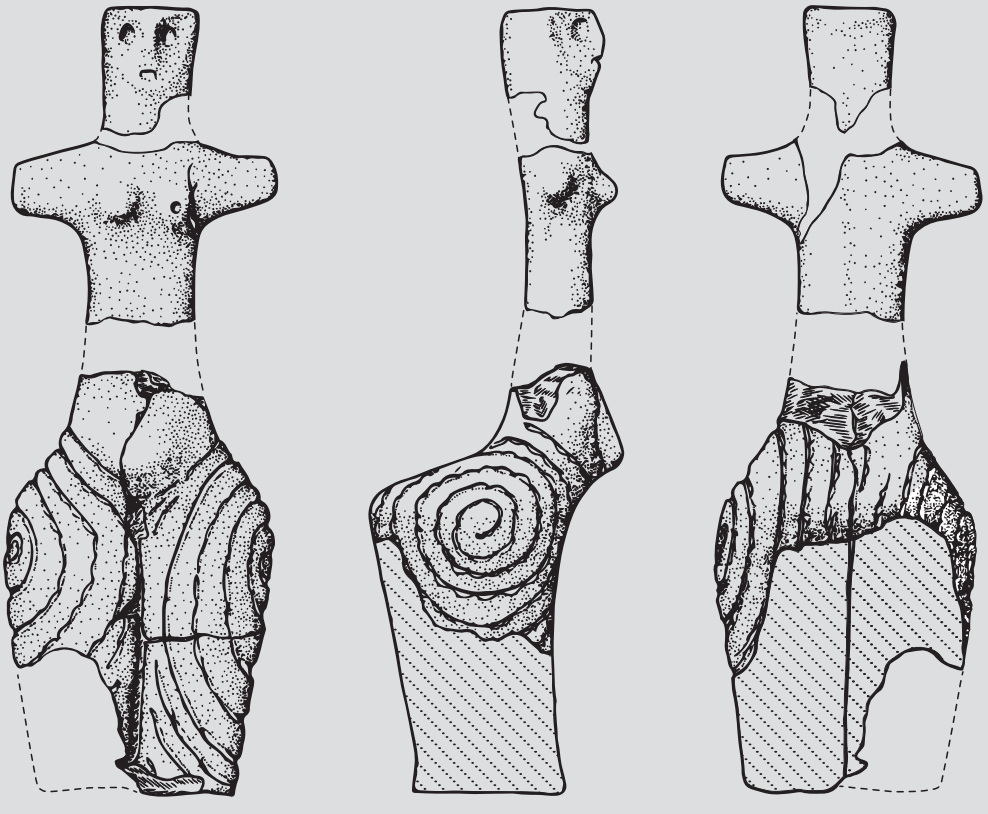
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RAIKO KRAUSS

DYNAMICS OF NEOLITHISATION IN SOUTH-EASTERN EUROPE

THE BEGINNINGS OF AGRICULTURE, HUSBANDRY AND SEDENTARY LIFE



AUSTRIAN ACADEMY OF SCIENCES PRESS

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The Beginnings of Agriculture, Husbandry and Sedentary Life

Translated by Alexander Johannes Edmonds

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Preface by the Series Editor

The 93rd volume of the series Mitteilungen der Prähistorischen Kommission (MPK) represents the comprehensive study on "Dynamics of Neolithisation in South-eastern Europe. The Beginnings of Agriculture, Husbandry and Sedentary Life" by Raiko Krauß. The author is a well-known expert on both the archaeology of south-eastern Europe and the neolithisation process, which he has been actively investigating for decades in manifold projects and fieldwork in different areas of the Balkans. This book not only includes lots of newly gained data and results, but also offers his views on the topic based on his expertise and long-term experience in this field. The long overdue focus on the south-eastern European Neolithic and associated dynamics during the transformation process turns the spotlight on a crucial zone where most of the cultural impact for the Neolithic of the continent is rooted. Understanding the entire region as an archaeological entity in its own right, worth studying from micro- to macro-regional levels, goes beyond its frequent attribution in archaeology as a bridging, transmitting or bordering area between western Asia and continental Europe.

The main chapters of this book offer systematic and in-depth data and materials organised in geographical order, covering the northern Aegean, North Macedonia and the Struma Valley, Thrace, the Central Balkans, the Lower Danube, the Carpathian Basin and the north-western Pontic area. In this thorough compilation, old and new data are contextualised in their regional-specific environments and research trajectories, accompanied by the author's perspective on their specific role and impact within the neolithisation process. This assembly of multilingual literature and facts from various countries offers a new source of reference for future studies by experts and students. The conceptual and theoretical background of the book is outlined in its introductory chapter, discussing the roots, perception and changes of the 'Neolithic' and of the region in the archaeological discourse since the 19th century. The collection, modelling and interpretation of the radiocarbon data includes supporting illustrations and maps and represents an important additional new source that allows us to expect follow-up discussions. The concluding chapter on the cultural legacy contains interesting and stimulating thoughts on specific aspects and practices of the neolithisation process. Although neolithisation and the region in focus are a highly dynamic research field, constantly producing new primary data, this book by R. Krauß will likely serve as a key study for south-east European archaeology.

Incorporating this book in our MPK publication series continues the tradition of the long-term significance of Balkan archaeology at the Austrian Academy of Sciences and our well-established focus on the archaeology of central and south-eastern Europe. My sincere thanks go to Raiko Krauß for sharing his expertise, studies and data about the dynamics of neolithisation in south-eastern Europe. Financial support for the publication has been provided by the Heisenberg Programme of the German Research Foundation (DFG). Ulrike Schuh was responsible for the publication management, Hazel Harrison for the English language editing, and Angela Schwab for the layout. I warmly thank our OeAI team for their thorough work and engagement, as well as the Austrian Academy of Sciences Press for their continuous support in producing the MPK series.

Barbara Horejs
Scientific director
of the Austrian Archaeological Institute
Vienna, 17th September 2023

Preface

This book's central aim is to present the complexity of the transition from hunting and gathering to agriculture and animal husbandry in South-eastern Europe. There is no single neolithisation process; rather, there are different scenarios for the transition to sedentarism in each of the major regions examined herein. My objective is thus to describe this diversity of neolithisation in the subcontinent's dissimilar environments and to outline several processes by means of case studies. To achieve this, however, it was first necessary to subject the existing archaeological data to a critical review. Working with new radiocarbon data, it is clear how fundamentally our understanding of the spread of agriculture and animal husbandry to Europe has changed when compared to older syntheses on the neolithisation. Beyond this, however, tangible manipulations of the archaeological data can also be demonstrated. Another aim of this work is therefore to indicate some of these falsifications by way of example.

This book is based on my habilitation thesis, which I submitted under the German title "Dynamik der Neolithisierung in Südosteuropa. Der Beginn von Ackerbau, Viehzucht und sesshafter Lebensweise" on 14th February 2014 to the Philosophical Faculty of the Eberhard Karls University in Tübingen. Major sections of the original text have since been published. This applies, in particular, to our work on the material from Dzhulyunitsa-Smardesh and Ovcharovo-Gorata in northern Bulgaria. The results of our investigations in Dzhulyunitsa were presented in a journal publication (Krauss et al. 2014). The evaluation of the earlier excavations in Ovcharovo-Gorata is the subject of a separate book (Krauss 2014). The main results from both projects have only been summarised here, and will be described within the context of the overall presentation of the neolithisation process in the lowlands of the Lower Danube. The revised text was then translated into English by Alexander Johannes Edmonds, and only individual sections subsequently added.

The work begins with a research-historical review of the development of the concept of a 'Neolithic'; although the term itself was not coined until the 19th century, it is, in my opinion, deeply rooted in Western cultural history. Indeed, some of the oldest texts in ancient Near Eastern literature already address the contrast between sedentary farmers and wandering hunters. The historical overview demonstrates as to how not only the Three-Age System established by Christian Jürgensen Thomsen (1788–1865) in Denmark, but also contemporaneous systems developed by Johann Friedrich Danneil (1783–1868) and Georg Christian Friedrich Lisch (1801–1883) in the German states, are not only an "ingenious invention", but, above all, represent the concerted implementation of an established historical principle.

The evaluation of the neolithisation process requires knowledge of the conditions prior to this event. However, we only possess solid information on previous Mesolithic settlement for a few areas, such as the zone at the Danube Gorges. The highly simplistic thesis of a neolithisation solely through immigration from Anatolia and the Aegean Sea into the Balkans and beyond into the Carpathian Basin and Central Europe is a consequence of this. A more detailed analysis of the known Mesolithic sites in South-eastern Europe now reveals for the first time a continuation in several places of Mesolithic traditions up to the Neolithic period. The interactions between Mesolithic and Neolithic communities must therefore be assigned more importance.

I had previously already dealt critically with the collection of stone artefacts from Pobiti Kamani in north-eastern Bulgaria. Important results for the research of the Mesolithic in South-eastern Europe were then presented in the anthology "Southeast Europe Before Neolithisation" which was edited by Harald Floss and myself (Krauss, Floss 2016). In the meantime, however, numerous new discoveries have come to light which could be included in the analysis. Among the most important are certainly the publication of the old finds from a cave near Odmut in Montenegro and a previously little-known Mesolithic feature from Ohoden in north-western Bulgaria.

The settlement of Dzhulyunitsa, which is not only one of the oldest Neolithic sites in the Balkans, but also remained inhabited throughout the entire period of the neolithisation process, offers a key to understanding this development in the Balkans. It turns out that the entire greater area north of the Aegean Sea was only neolithisised after the definitive end of the climatic processes encapsulated in the 8.2 ka event after 6200 calBC. According to the limited resolution of the radiocarbon dates, it was a sudden process which covered the area from the northern Aegean to the Carpathian Basin within a maximum of two centuries. However, not all areas within the Balkan-Carpathian region were affected in the same way by this first wave.

The neolithisation of mainland Europe started from those areas which correspond most closely to areas with a Mediterranean climate in terms of their environmental conditions. In South-eastern Europe, this is initially the Sub-Mediterranean-Aegean Biogeographic (SMAB) Region, which only extends deep into the subcontinent along the Axios/Vardar, Struma, and Nestos/Mesta river valleys. The oldest Neolithic sites which are still directly influenced by the Neolithic maritime networks of the Aegean are found in these areas. This area's Neolithic only spread into the Central Balkan region (Proto-Starčevo) and the lowlands of the Lower Danube (Dzhulyunitsa 1–2) by way of an additional step.

According to current knowledge, the neolithisation of Thrace and the Carpathian Basin took place somewhat later. The trigger for this process need not necessarily have been the immigration of an already fully Neolithic population; it is quite possible that autochthonous Mesolithic communities were involved in the neolithisation process occurring there, which only became archaeologically visible thereafter. The physical remains of sedentary societies are simply much more detectable than those of roving hunters.

The architecture of the early settlements is particularly important for the investigation of the expansion dynamics of the Neolithic, since building traditions permit the tracing of the connections between different cultural areas like no other archaeological aspect. However, it is precisely in the documentation of Neolithic house features that major methodological problems for the Balkans are revealed. Based on the evaluation of the old excavations at Ovcharovo-Gorata, a settlement of the developed Early Neolithic in the eastern Balkans, it can be demonstrated how the published house plans had already been manipulated during excavations. As a consequence, all previously published settlement plans for the South-eastern European Neolithic must be critically reassessed. The finds from Ovcharovo-Gorata can be largely paralleled with the material from other sites in South-eastern Europe. This comparability can be taken as a sign of increased communication within the entire Balkan-Carpathian region, which was only possible after the complete establishment of the Neolithic there.

In a supposedly Early Neolithic figure ensemble from Belica in Serbia, manipulation of the finds themselves can be proven. The results of these investigations are also presented here for the first time.

In the Carpathian Basin, the expansion of the Neolithic comes to a halt for several centuries along a line that has been defined as the Central European-Balkanic Agro-Ecological Barrier (CEB AEB). The preliminary results of our investigations in the Maros/Mureș area immediately south of this line already show how the Neolithic settlement in this border area had adapted to the changed environmental conditions. Cattle dominate the domestic animal population there, while sheep and goat breeding predominate in the Balkans, just as in the Neolithic lifestyle's areas of origin in the south-east. The use of aquatic resources and hunting are also more important in the northern areas. The expansion beyond the CEB AEB northwards is apparently related to the exploitation of obsidian deposits in the northern Carpathians. Other exchange networks can also be proven on the basis of the distribution of various raw materials and render it likely that Mesolithic populations were involved in the neolithisation process, especially in this area. In the Carpathian Basin, the Neolithic package is also adapted to the northern ecological conditions to such an extent that it could ultimately also be used to settle areas further north in Central Europe.

The neolithisation of the northern Pontic steppes occurred accordingly late, only during the phase of the developed Early Neolithic (Criș III), and very probably initially originated from the eastern Balkans. In the course of bringing the Neolithic way of life to this area, however, a significant reduction in the Neolithic package can be observed with the ever-increasing distance from the Balkans, until, finally, only ceramic production can be demonstrated in an otherwise economically completely Mesolithic environment.

The book ends with an overview on various cultural techniques of the Neolithic and selected symbolic aspects. These provide an insight into the social and ideological preconditions that made the neolithisation of Europe possible in the first place.

Although the manuscript was written in Tübingen, there were good reasons for submitting it to the Austrian Academy of Sciences for printing. I thank my good friend and esteemed colleague Barbara Horejs for this opportunity. The two reviews commissioned by the Academy were very helpful and so I would also like to thank the two anonymous reviewers for their comments. Special thanks go to the editors of the MPK series and especially to Hazel Harrison, whose precise work contributed a great deal to the improvement of this text, and also to Ulrike Schuh for her continued extremely useful and straightforward guidance.

1. The Occidental Conception of an Epochal Change with the Advent of Agriculture, Husbandry and a Sedentary Life

The transformation from the hunter-gather to agricultural mode of life found its expression in Western myths like none other. The cultural memory of this transition appears to be so deeply rooted within those societies which have undergone such a development that, according to their myths of creation, no other avenue of development is conceivable. Jan Assmann coined the notion that the past does not emerge by itself but is rather the result of a cultural construction and representation, impelled by specific motives, expectations and hopes, and formed within the present's frame of reference (Assmann 1992, 88, with reference to Maurice Halbwachs). Myths from agrarian societies are particularly vital to the emergence of the notion of a historical epoch founded upon agriculture and animal husbandry. These regularly esteem the surmounting of an errant hunting-based mode of life as an achievement. Within these, the mode of life present at the time is retrospectively accentuated by emphasising the departure from the former lifestyle. From the perspective of an agrarian society, sedentarisation and the accompanying socio-technical alterations in human relations are portrayed as the decisive step towards a civilisation of one's own. This process was presumably appreciated entirely differently by hunter-gatherer societies. Regardless, early appraisals of this process stem only from one side, namely from the communities which had already completed the shift to an agricultural-sedimentary society and lorded over hunter-gatherer and non-sedentary societies (as befitted their status). While the statement from Edith Ennen and Walter Janssen that until 1800 CE the farmer was generally a man unable to read and write (Ennen, Janssen 1979, 1) remains apt, only a society based upon agricultural production can provide the preconditions for certain members of society to create a space to textualise their intellectual and conceptual world.

1.1. The Epic of Gilgameš

The irreconcilable conflict between hunter and farmer societies respectively may already be encountered in the earliest literary textual evidence. For the urban societies of the ancient Near East, delineation from the still quotidian hunters in their immediate surroundings was of great significance. Their self-conception as 'civilisation' was thus derived from a mode of subsistence largely founded upon pastoralism and cultivation of fields and gardens. This perspective becomes apparent in the *Epic of Gilgameš*, which, in not recounting in any detail normal life among the gardens and fields surrounding a fortified city, only serves to heighten the description of Enkidu hailing from the steppe:

> He wanders over the hills [*all day,*]
> constantly with the herd [*he feeds on grass.*]
> Constantly his feet [*are found*] by the water-[hole,]
> (*Epic of Gilgameš*, tablet 1. – George 2003, 547)

> and also Enkidu himself, whose birthplace was the hills.
> Feeding on grass with the very gazelles,
> *jostling at* the water-hole with the herd,
> he enjoyed the water with the animals.
> (Then) Šamḫat saw him, the man-savage,
> a murderous fellow from the midst of the wild.
> (*Epic of Gilgameš*, tablet 1. – George 2003, 549)

> This fellow – how similar to Gilgameš he is in build,
> he is tall in stature, *majestic* as a battlement.

> For sure he was born in the hills.
> (*Epic of Gilgameš*, tablet 2. – George 2003, 561)

> They put bread before [him,]
> they put ale before him.
> Enkidu did not eat the bread, he *looked intently* as he viewed (it):
> [*how to eat bread he had never*] *even* [*been taught,*]
> (*Epic of Gilgameš*, tablet 2. – George 2003, 561)

> Enkidu does not have [*a mother or father*]
> Loose-hanging hair ... [*was never cut*]
> he was born in the wild and nobody [*raised him*]
> (*Epic of Gilgameš*, tablet 2. – George 2003, 565, with additions)

Moreover, Humbaba, the guardian of the Cedar Forest, insults him:

> Come, Enkidu, (you) spawn of a fish, who knew not his father,
> hatchling of terrapin and turtle, who sucked not the milk of his mother!
> (*Epic of Gilgameš*, tablet 5. – George 2003, 607)

After all of the adventures partaken together, Gilgameš speaks to his dying companion as follows:

> "O Enkidu, [whom] your mother, a gazelle,
> and your father, a wild donkey, [created,]
> whom the wild [asses] reared with their milk,
> and the animals [of the wild taught] all the pastures!"
> (*Epic of Gilgameš*, tablet 8. – George 2003, 651)

Enkidu, who lives outside of the agrarian community, is described as someone who eats wild plants and drinks the milk of undomesticated animals. As he does not know his ancestry, anyone might assume that he had originated among the animals of the wild or even the fishes of the sea. Due to his life in the great outdoors, he possesses great physical strength. Yet, he does not care for his appearance, is ill-bred and must constantly roam about with the wildlife from which he subsists. As the polar opposite of the fortified city, steppe and highland are his home. Culturally typical dishes such as bread baked from grains or alcoholic drinks are unknown to him. Even after his long sojourn spent among 'civilisation', he still does not belong to the community of the city state, which subsists from garden agriculture and domesticated animals. It is only when one might invoke ancestors themselves raised within the cultivated environs that one might claim to belong. Already in the early 3rd millennium BCE, the period back to which the earliest version of the *Epic of Gilgameš* extends, the dichotomy between hunting and gathering and cultivation and livestock husbandry played a decisive role in the self-characterisation of the sedentary agrarian population (at the very least).

1.2. Genesis

In the Bible, a novel dichotomy appears which plays primarily upon the newly developed rivalry between pastoralists and agriculturalists. Following the expulsion from Paradise, and thereby the end of a mythically transfigured mode of life bereft of effort and toil in the acquisition of nutrition (which might retrospectively be equated with a state of affairs prior to sedentarism and the introduction of agriculture), clashes between foragers and farmers form one of the most significant themes within the first of the five Mosaic books. It already becomes evident within the Pentateuch that the emergence of agriculture is marked as an achievement, and was not present from the very outset:

> In the day that the Lord God made the earth and the heavens, and every plant of the field before it was in the earth, and every herb of the field before it grew: for the Lord God had not caused it to rain upon the earth, and there was not a man to till the ground […]. (*Genesis* 2:4–5)

In contrast to primeval life within Paradise, where no effort must be made to cultivate plants, but rather necessary sustenance may simply be collected, the hardships of agricultural activity are central to the narrative as related within *Genesis*:

> Cursed is the ground for thy sake; in sorrow shalt thou eat of it all the days of thy life; thorns also and thistles shall it bring forth to thee; and thou shalt eat the herb of the field; in the sweat of thy face shalt thou eat bread, till thou return unto the ground; for out of it wast thou taken (*Genesis* 3:17–19)

The opposition between hunting and cultivation depicted in the *Epic of Gilgameš* is now superseded by the conflict between agriculture and livestock rearing, which immediately occurs following the banishment from Paradise and the initiation thereby of an agro-pastoral lifestyle. This is clearly demonstrated by the story of Adam's sons, Cain and Abel: while envy of God's acknowledgement of the farmer's offering is initially given as the motivation for the murder, the strife seems, nevertheless, to possess deeper roots – underpinning Cain's murder of his brother Abel is evidently the natural

disharmony between cultivator and the pastor; indeed, what greater danger might constantly present itself to seeds than pasturing livestock? Written from the standpoint of an early agrarian society, *Genesis* also names another threat to its subsistence: drought brought on by lack of precipitation. Even the cultivator can be coerced back into a transient lifestyle by means of extreme climatic events within the ecologically highly sensitive zone of Palestine and its neighbouring regions. It becomes swiftly apparent that agriculture is initially far more sensitive to even the slightest of environmental alterations than pastoralism (which is capable of reacting flexibly to brief climatic changes on grounds of its mobility). By means of consequence, then, the abandonment of sedentary life is here presented as a solution – the temporary departure from agriculture in favour of an intensification of animal husbandry and thereby a transient lifestyle:

> The voice of thy brother's blood crieth unto me from the ground. And now art thou cursed from the earth, which hath opened her mouth to receive thy brother's blood from thy hand; when thou tillest the ground, it shall not henceforth yield unto thee her strength; a fugitive and a vagabond shalt thou be in the earth. (*Genesis* 4:10–12)

The other extreme, precipitation to the extent of flooding, is also discussed. While far less frequent, such events threaten agriculturalists and pastoralists alike. Initially, however, the return of rain is welcomed, as is announced already with the birth of Noah:

> This same shall comfort us concerning our work and toil of our hands, because of the ground which the Lord hath cursed. (*Genesis* 5:29)

Yet, thereafter comes the existential threat of the Great Deluge which submerges the entire land under water. Livestock and seeds must be hoarded, so that life might begin anew with the receding of the waters.

Not only are clashes between groups with competing economic models such as farmers and herders thematised over the further course of the narrative but also those within groups with comparable subsistence strategies. Even with sufficient available land, competition over what precious few expanses might be employed for livestock herding can provoke conflict:

> And Abraham said unto Lot, Let there be no strife, I pray thee, between me and thee, and between my herdmen and thy herdmen; for we be brethren. Is not the whole land before thee? Separate thyself, I pray thee, from me: if thou wilt take the left hand, then I will go to the right; or if thou depart to the right hand, then I will go to the left. (*Genesis* 13:8–9)

Scarcity of land and suboptimal environmental conditions are thus the factors limiting growth within the landscape wherein the biblical narrative plays out. Sedentarism and the production of alimentation favour population growth. Yet, this engendered new problems which were not only expressed in internal conflicts, but also gave rise to expansion into new terrains and outlying regions, and thereby to the enlargement of the settled area. In contrast to Mesopotamia, a departure (at the very least temporarily) from sedentarism by a population specialised in farming appears possible within Palestine. An incessant conflict between sedentary farmers and roaming pastoralists is, nevertheless, presented as "normal". From a historical perspective, here might be encountered, for the first time, the fundamental differentiation between a life in Paradise based upon foraging and that mode of life evidently already understood within the ancient world as more recent comprising of agriculture, husbandry, and also the hunt. There is certainly no other economic upheaval in the history of human culture so deeply etched into Western tradition.

1.3. The Sequence of Ages within Classical Antiquity

With the antique tradition, the tales of a paradisiacal primordial age of perpetual peace, eternal youth, and effortless provisioning of nutrition attested among many populations found "their literarily solidified expression, defining tradition within the occidental cultural sphere" (Mähl 1994, 12). The five-part division of the ages within Hesiod at the turn of the 8th to 7th centuries BCE may be considered to be the first literary attempt at a historical partition of the history of human culture:

> Golden was the race of speech-endowed human beings which the immortals, who have their mansions on Olympus, made first of all. They lived at the time of Cronus, when he was king in the sky; just like gods they spent their lives, with a spirit free from care, entirely apart from toil and distress. Worthless old age did not oppress them, but they were always the same in their feet and hands, and delighted in festivities, lacking in all evils; and they died as if overpowered by sleep. They had all good things: the grain-giving field bore crops of its own accord, much and unstinting, and they themselves, willing, mild-mannered, shared out the fruits of their labors together with many good things, wealthy in sheep, dear to the blessed gods. (Hesiod, W*orks and Days,* 109–120. – Most 2006, 97)

The opposition between foragers and early farmers is no longer of interest to the society of the city-states in the Anatolian-Aegean sphere of the Archaic period. The past is glorified in contrast to the present: the earth provides all that is necessary without toil, and work in the fields serves merely as a pastime. A more precise notion of the acquisition of food during this mystical first age is provided by Ovid, who reiterates the fundamental Hesiodic articulation of ages at the advent of the Common era in his *Metamorphoses*:

> The earth herself, without compulsion, untouched by hoe or ploughshare, of herself gave all things needful. And men, content with food which came with no man's seeking, gathered the arbute fruit, strawberries from the mountain-sides, cornel-cherries, berries hanging thick upon the prickly bramble, and acorns fallen from the spreading tree of Jove. (Ovid, *Metamorphoses* I, 101–106. – Miller, Goold 1977, 9)

For Ovid, this is clearly an age prior to the introduction of agriculture, in which humanity feeds itself by means of the collection of the fruits of the forest and field:

> Afterwards those who have their mansions on Olympus made a second race, much worse, of silver, like the golden one neither in body nor in mind. A boy would be nurtured for a hundred years at the side of his cherished mother, playing in his own house, a great fool. But when they reached adolescence and arrived at the full measure of puberty, they would live for a short time only, suffering pains because of their acts of folly. For they could not restrain themselves from wicked outrage against each other, nor were they willing to honor the immortals or to sacrifice upon the holy altars of the blessed ones, as is established right for human beings in each community. (Hesiod, *Works and Days*, 127–137. – Most 2006, 97–99)

An eternal childhood, hence, but also the age of the first martial confrontations, which explains how weapons and fixed settlements came into the world. Ovid's later text is again more illustrative with regard to the manner of housing and the foundations of acquiring food:

> In this age men first sought the shelter of houses. Their homes had heretofore been caves, dense thickets, and branches bound together with bark. Then first the seeds of grain were planted in long furrows, and bullocks groaned beneath the heavy yoke. (Ovid, *Metamorphoses* I, 121–124. – Miller, Goold 1977, 11)

It can hardly be stated with any greater clarity. All three essential elements of the Neolithic are already mentioned here: a sedentary lifestyle, agriculture and animal husbandry!

> Zeus the father made another race of speech-endowed human beings, a third one, of bronze, not similar to the silver one at all, out of ash trees – terrible and strong they were, and they cared only for the painful works of Ares and for acts of violence. They did not eat bread, but had a strong-hearted spirit of adamant – unapproachable they were, (…). Their weapons were of bronze, bronze were their houses, with bronze they worked; there was not any black iron. (Hesiod, *Works and Days*, 143–148, 150–151. – Most 2006, 99)

In this, Hesiod's third race of men, a vague memory of the period before the introduction of agriculture can possibly be recognised. They used weapons of metal; here perhaps genuinely of copper or bronze (*χαλκῷ δ'εἰργάζοντο*) as iron was not yet employed, and lived in settlements built of sturdy materials. In the antique tradition, this age does not yet represent the Bronze Age in the modern sense, as historical references indicate that the following first 'Iron' Age is meant according to Hesiod:

> When the earth covered up this race too, Zeus, Cronus' son, made another one in turn upon the bounteous earth, a fourth one, more just and superior, the godly race of men-heroes, who are called demigods, the generation before our own upon the boundless earth. Evil war and dread battle destroyed these, some under seven-gated Thebes in the land of Cadmus while they fought for the sake of Oedipus' sheep, others brought in boats over the great gulf of the sea to Troy for the sake of fair-haired Helen. (Hesiod, *Works and Days*, 156–165. – Most 2006, 101)

Finally, the author bewails his own forlorn present, in the fifth age:

> If only then I did not have to live among the fifth men, but could have either died first or been born afterwards! For now the race is indeed one of iron. And they will not cease from toil and distress by day, nor from being worn out by suffering at night, and the gods will give them grievous cares. (Hesiod, *Works and Days*, 175–180. – Most 2006, 101–103)

Robert von Ranke-Graves even specifically identifies the brazen race with the society of Bronze Age Greece. For

him, the epoch of heroes is equivalent to Mycenaean culture and Hesiod's final age begins with the immigration of the Dorians, an event still historically identifiable for von Ranke-Graves (von Ranke-Graves 1960, 5). This notwithstanding, the strict chronological character of the antique notion of the five ages may also be subjected to doubt as underpinning Hesiod's historical conception is no transcendent or immanent necessity leading to some predetermined end goal; the present is not embedded in a meaningful passage of time – it is not a transition, a necessary intermediary between past and future. Rather, it dwells isolated in itself and bears the seeds of its own fall, fulfilling itself in nothing other than the prior ages (Mähl 1994, 17).

In Ovid, any differentiation between a heroic and a contemporary "Age of Iron" is no longer tangible, thus a mere four ages appear in his work: 'Golden', 'Silver', 'Brazen' (*aenea proles*) and 'Iron'. Once more, nevertheless, more precise explanations are presented regarding which technical innovations appear for the first time in this final "Age of Iron", which might, indeed, be interpreted as intimating a historically-understood progress of time:

> Men now spread sails to the winds, though the sailor as yet scarce knew them; and keels of pine which long had stood upon high mountain-sides, now leaped insolently over unknown waves. And the ground, which had hitherto been a common possession like the sunlight and the air, the careful surveyor now marked out with long-drawn boundary-line. Not only did men demand of the bounteous fields the crops and sustenance they owed, but they delved as well into the very bowels of the earth; and the wealth which the creator had hidden away and buried deep among the very Stygian shades, was brought to light, wealth that pricks men to crime. And now baneful iron had come, and gold more baneful than iron. (Ovid, *Metamorphoses* I, 132–142. – Miller, Goold 1977, 11–13)

What is submitted to scrutiny here is nothing other than the development of sailing, of private property on estates, and the advent of mining. The consequences thereof are the acquisition of new littoral territories by means of now far-reaching maritime travel, the development of precise methods of surveying land and further new technical innovations offered by intensified use of metals. As Hans-Joachim Mähl was able to demonstrate, it was Ovid's *Metamorphoses* more than anything else that contributed to the transfer of the myths of Antiquity via the Middle Ages and Renaissance into the Romantic era (Mähl 1994, 50–58).

The foundations of the canonical notion of an articulation of the history of human culture into ages of metal were already laid in Archaic Greece: a "Golden Age" marked by a gatherer-based subsistence, a "Silver Age" in which agriculture and pastoralism predominate, a "Brazen Age" in which copper or bronze come first into use as a metal and, finally, two subsequent "Iron Ages", of which the latter should be understood as the actual present. Differing decisively from the later constructed view of a directed course of history, the Greek conception determining history relationships is rather the cyclical return of an age fixed once for all eternity. The course of history does not thrust against some unknown future but rather moves in a cyclical motion rendered comprehensible by means of understanding the past (Mähl 1994, 18–19). The Archaic Greeks within the Anatolian-Aegean sphere also did not possess any conception of a fundamental upheaval accompanying the transition from hunter-gatherer to agricultural-pastoral lifestyles, as this change was of little consequence to the Archaic population, which stands very much in striking contrast to the authors of *Genesis* who inhabited an ecologically sensitive zone. The notion of the cyclical return of an age also possesses a didactic character, exaggeration of the heroic past and of the present perceived as tiresome, oppressive demanding the striving for a better life in a new epoch. The propagandistic revelation of a "Golden Age" by Vergil at the beginning of the reign of Octavian/Augustus (Vergil, *4th Eclogue*), which more or less coincidentally fell within Jesus of Nazareth's period of worldly activity, is obvious against this backdrop.

The prophesy of the new age by Vergil as Christologically interpreted in the Middle Ages probably substantially contributed to the maintenance of this ancient tradition which would otherwise have been lost.

In contrast to ancient Greece, a historical consciousness developed itself within Judaism which led rather linearly from the remotest past by means of many stages to one's own present day, comprehending these stations as necessary steps towards a promised future (Mähl 1994, 189–190). It was likely only by means of oriental influence that the notion of the return of the Golden Age could penetrate Greece and later be expanded upon in Roman verse (Mähl 1994, 19). Of significance here to the development of the notion of a Neolithic is less the cultural memory of the transition from hunter-gatherer to agrarian lifestyles in the Ancient World, but rather more the efforts demonstrable from Classical Antiquity onwards of partitioning the history of civilisations into discrete epochs and, moreover, of respectively naming these after metals. Yet, most prominently bound together by the notion of the "return of the Golden

Age" were the idea of a cyclical sequence of ages and the eschatological concept of the advent of a new world respectively. More so than the symbolism of metals, this cyclicality may be evidenced in all those occidental conceptions of history's course which postulate a fundamental regularity in its motions. This important aspect must be examined more precisely later.

Characteristically, even contributions to an Enlightenment-esque portrayal of history, which are already somewhat to be found in the Prometheus myth during Antiquity (unfolding as it does quite without the concept of a "Golden Age"), could not impact in the long term upon the notion of a course of ages defined by metal. This critical-rational stance against all mysticism was most radically adopted by the Sophists. On the other hand, the naive notion of the paradisiacal life in the Golden Age was also satirically modified and even made the subject of derision by the comic poets (Mähl 1994, 30–34). The image of the ages of metal did not resultantly disappear, but was merely partially deconstructed and filled with rational content. At the end of this multifaceted development (cf. somewhat the images of history within Herodotus, Thucydides, and Dicaearchus) stands a pragmatic-historical cultural history well removed from myth. Already in Plato, a mingling of the Golden Age with the Prometheus myth may be found (Mähl 1994, 35–41). At the advent of the Common Era, a historical perspective as to the doctrine of world ages appears with utter clarity in Lucretius' didactic poem *De rerum natura*:

> The ancient weapons were hands, nails, and teeth, and stones and branches also broken from forest trees, flames and fire as soon as they were known. Later was discovered the power of iron and of bronze. The use of bronze was known before iron, because it is more easily worked and there is greater store. With bronze men tilled the soil of the earth, with bronze they stirred up the waves of war, and sowed devastating wounds, and seized cattle and lands; for when some were armed, all that was naked and unarmed readily gave way to them. Then by small degrees the sword of iron gained ground, and the fashion of the bronze sickle became a thing of contempt, then with iron they began to break the soil of the earth, and the struggles of war now become doubtful were made equal. (Lucretius, *De rerum natura* V 1283–1296. – Rouse, Smith 1992, 477–479)

For Lucretius, stone tools and weapons made from organic materials were initially used, this being the epoch during which fire had just been tamed. Thereafter, ore came to be employed (*aes*, here likely once more in the sense of copper or bronze), from which not only more effective weapons, but also agricultural tools could be fashioned; this is an age in which agriculture and animal husbandry also appear. The gradual replacement of bronze knives with iron swords ushered in the age of ploughed fields. By Lucretius at the very latest, the notion had taken the form of a cultural-historical sequence within the world corresponding to a system of three periods: a succession of Stone, Bronze and Iron ages. Furthermore, important technical innovations are also ascribed to these epochs: the use of fire from the Stone Age onwards; pastoralism and agriculture from the Bronze Age onwards; and the advent of the construction of ploughs in the Iron Age.

In the ancient Near East, metal symbolism was also common in the characterisation of the various ages. In the prophesy of Bahman Yašt, composed in Middle Persian, Zarathustra sees in a dream a tree with four branches formed of metal in descending quality (golden, silver, brazen, and iron) which is interpreted by Ahura Mazda as an allegory for the four historical epochs (Gatz 1967, 7–8). This text, transmitted from the Sassanid period, draws upon earlier sources which might be traced back to at least the 4th century CE.

Comparable in structure is an account of Nebuchadnezzar's (i.e. Nabû-kudurrī-uṣur II's) dream of the world empires. The unequivocal reference within the biblical narrative to this Neo-Babylonian ruler fixes the tale within the 7th century BCE. In this story, a giant statue appears before Nebuchadnezzar in a dream:

> This image's head was of fine gold, his breast and his arms of silver, his belly and his thighs of brass, his legs of iron, his feet part of iron and part of clay. (*Daniel* 2:32–33)

A stone dislodged from a mountain which destroys the statue is interpreted by *Daniel* as the Final Judgement which seals the fate of the four monarchies symbolised by the four metals (Gatz 1967, 7, 9). Nevertheless, in *Daniel*'s reading, the golden head of the statue only represents the contemporary rule of Nebuchadnezzar, after which the other ages will then follow (*Daniel* 2:37–40). The concept of an eschaton is once more encountered here, after which the ages will renew. Yet, the narrative interestingly also does not present any retrospective organisation of the progress of history until the point in time in which it would have been composed, but rather presents an outlook upon the future from the standpoint of the Neo-Babylonian period. Implicit therein would seem to be a cyclical conception of history. The identification of metals, on the one hand, with colours and, on the other, with heavenly bodies (Gold – Sun, Silver – Moon,

(Copper-)Ore – Jupiter/Venus, and Iron – Mercury/Mars) also reveals the cosmological dimension of the notion of the ever-constant change of the ages. According to this, every epoch stood under the dominion of planetary gods, the appearance and disappearance of whom harmonise with the astronomically observable changes in the stars (Gatz 1967, 11–14).

1.4. Reception of the Antique Notion of the Ages of Metal in the Middle Ages and Renaissance

Although the topos of the "Golden Age" is not found verbatim within the poetry of the German Middle Ages, the notion of the cyclical progress of temporal stages and, most prominently, that of the return of a 'good' age do, in fact, occur as may be seen, namely, initially in Wolfram von Eschenbach's *Parzival* at the beginning of the 13th century CE, and, at the turn of the 14th century, somewhat less clearly in the mystical compositions of Meister Eckhart (Veit 1960, 103–123).

A vague echo of the antique tradition of the "Golden Age" may even be discerned in Snorri's *Prose Edda* from the year 1300 (Snorri, *Prose Edda*, chap. 14). Interestingly enough, the appearance of women is therein held as provoking the end of the "Golden Age", which Gottfried Lorenz considers a blending of Ovid's concept of a "Golden Age" with the biblical account of Paradise and the Fall (Lorenz 1984, 214–215). The antique notion of the outline of the ages was already so widespread in Europe in the Middle Ages that it was even comprehended in distant Iceland in the 14th century.

Roughly simultaneously in Italy during the Renaissance, Classical texts received new attention and came to form the foundation of a poetry which exploited antique notions to the full. In his *Commedia*, Dante Alighieri makes Vergil, the ancient herald of the "Golden Age", his guide through the first two of the three realms of a transcendent world. The journey of the narrator through the spheres of "Inferno", "Purgatorio" and "Paradiso" may be read as retrospective from the standpoint of the historical present of the poet back to the beginning of creation by way of Antiquity (Veit 1960, 124–127).

At the beginning of the 16th century, Thomas More's work *Utopia* directly engaged with the antique tradition and, more specifically, on the outline of an idealised polity in Plato (*Atlantis*). In the notes to the German translation of *Utopia* by Curt Woyte, the ideal state as suggested by More is characterised as "communist" (Woyte 1951, 183–184, fn. 3), which draws parallel to conceptions of the course of history at the end of the 19th century. It must first be acknowledged, however, that the term itself experienced a shift in the Renaissance from its original meaning of 'nowhereland' and a new notion of "utopia" as the fiction of an ideal state would become prevalent, proving decisive thereafter most prominently within the intellectual history of the 19th century (Mähl 1994, 2). A strand connecting to antique notions of a "Golden Age" may possibly already be seen in Augustine's *De civitate Dei*. Clear references to the ancient topos of the Golden Age might also be encountered in the works of Erasmus of Rotterdam and William Shakespeare (Veit 1960, 128–136), to mention only a few best-known, pertinent authors. Benedict Anderson, nevertheless, has pointed to the location of these not always seriously-meant "utopias" within their respective contemporary societies (Anderson 2005, 74). At the end of the 19th century, the meaning of the term "utopia" was expanded upon to relate not only to the genre of writings and novels on the state, but also to all illusionary and unfulfillable ideals, receiving thereby a negative, disparaging appreciation for the first time (Mähl 1994, 2). Within the intellectual conceptual sphere of the Renaissance, a notion of ages housing a chronological dimension might still initially serve as a point of departure regardless. At the same time, the hope for or wishful thinking about the return of a particular age serves as a canvas upon which certain theories of state might be illustrated.

The periodisation of history into Antiquity, the Middle Ages, and the Modern era still employed today was the product of the adoption by Christoph Cellarius of the principle founded upon the antique tradition of segmentation into three (or four) "world empires" within his 1702 work *Historia universalis*, through which the mythological conception of the antique ages had materialised into a chronological framework at the very latest. Indeed, published in 1688, the name of his *Historia tripartita* already exemplifies the epochal system he fashioned (Goetz 1999, 36).

While no original outline as to the articulation of the history of civilisation may be evidenced for the Middle Ages, at the very latest with the Renaissance's reorientation towards Antiquity it may be presumed that the notion of a historical succession of Stone, (Gold, Silver,) Bronze, and Iron ages respectively (as established around the advent of the Common Era) belonged to the heritage of an intellectual elite and the clergy in Europe at the very least. The demonstrable references to the topos of the "Golden Age" within the aforementioned Renaissance authors certainly suggest this. Intellectual engagement with the Bible presented the medieval individual with the account within *Genesis* of the transition from "free" life in Paradise to a new lifestyle founded upon farming and herding. With the translation of the Bible by Martin Luther, this notion entered the general populace's collective imagination from 16th century onwards.

1.5. The Notion of Epochal Change from the Enlightenment to the Romantic Period

Clearer forays into a resolution of the mythical-cosmological conception of the succession of ages may be noted from the Enlightenment onwards. Yet, an intensive engagement with classical texts initially also formed the basis of this. Taking Lucretius as his point of departure, Giambattista Vico developed markedly original notions of "cultural" achievements over the course of time at the turn of the 17th to 18th centuries:

> Thus, since the forests came first, then the hovels, next the fields, flocks and herds, followed by the cities, the nations and, finally, the philosophers. (Vico, *The New Science*, trans. by Pompa 2002, 216)

This notwithstanding, it is not the transformations in modes of subsistence which brought about the four stages of society for Vico, but rather changes in human thought (Burke 1990, 73).

Within Johann Gottfried Herder's 18th-century conception of history, a juxtaposition of cultural development and human life-stages may be encountered. Inasmuch as therein, for example, the cultural development of ancient Egypt corresponds to childhood, that of Classical Greece to adolescence, and that of the Roman Empire to adulthood, the end of such a historical cycle presents the foundation for the development of a new civilisation which underpins, in turn, a development analogous to the human lifespan. Simultaneously, Herder emphasises clearly (and very much in the spirit of the Enlightenment) the geographically and environmentally determined causes for the transformations of human societies (Maurer 2014).

Universally known are the stylistic periods coined by Johann Joachim Winckelmann and the subdivision of the art history of Antiquity into Archaic, Classical, and Hellenistic derived from these, which ultimately present the concept of a living organism which buds, blossoms, and withers (Lang 2002, 44). The significance of Winckelmann for the reception of Antiquity has been much discussed, his influence already showing markedly in the title of Johann Wolfgang Goethe's 1805 text *Winckelmann und sein Jahrhundert* ('Winckelmann and his Century'). Thereafter, a tripartite division appears in Adam Ferguson's 1767 work *An Essay on the History of Civil Society* which characterised the successive states of society as "savagery", "barbarism" and "civilisation" (Grünert et al. 1989, 28).

Taking an ethnographic analysis of different Native American tribes (most notably the Iroquois) as his starting point, Lewis Henry Morgan succeeded in later defining these epochs more closely. In 1877, he outlined a system of cultural development composed of seven stages within his work *Ancient Society* which would come to be fundamental to the early 19th century's conception of history (Morgan 1921). Morgan also explicitly has recourse to an image of history transmitted from Classical Antiquity, and also somewhat in his prefacing of his work with verses from Horace's *Satires*.

It might therefore be deduced that until the mid-18th century, practically the entire corpus of antique literature still extant had been accessed and made available to a broader public in printed form (Anderson 2005, 76–77). Beyond the remarkable inroads made by scientific observations into conceptualisations of history, it is most prominently the artistic engagement with Antiquity which contributed to the passing on of the ancient conception of the succession of Stone, (Gold, Silver,) Bronze and Iron ages within the European intellectual sphere. The poem *Die vier Weltalter* ("The Four Ages of the World") by Friedrich Schiller and Friedrich Hölderlin's *Natur und Kunst oder Saturn und Jupiter* ("Nature and Art, or Saturn and Jupiter") are examples of this.

A stream of transmission such as this beginning with Classical Antiquity was thus of equal standing to those fantastical views regarding creation of prehistoric monuments and finds propounded in the medieval and early modern eras which are so often remarked upon in introductory literature on ancient history and prehistory (cf. Eggers 1986, 25–29). With the constant addition of prehistoric finds to collections and cabinets of curiosities alike, the need for the integration of the prehistoric epochs into the pre-existing scheme also increased. Moreover, during the Romantic era, many European countries also experienced strengthened interest in the antiquities on their own doorstep, which, after all, were readier to hand than the epochal divisions of, on the one hand, the Bible and, on the other, the antique tradition.

It is only in the second half of the 18th century that a pronounced turn towards the economic aspects of the development of history might be evidenced. Adam Smith embedded once more a three-stage succession of hunter to pastoralist to finally agriculturalist within his studies of civic economy (Grünert et al. 1989, 28). At the same time, travellers' accounts from expeditions overseas confronted a European public with societies which had not yet accomplished the transition from a hunter-gather mode of life to an agrarian-pastoral example or were in the early stages of an agricultural lifestyle. Despite an increasing scientificisation of perspectives of history up to the end of the 18th century, the entrenchment of a tripartite, cyclically recurrent

progression of epochs is noteworthy. While academic interest shifted ever more to the economic preconditions for historical development, these new aspects were still completely shoehorned into the antique tripartite worldview. The most remarkable interpretation of historical processes during the Enlightenment is the comparison with the cycle of life in its constant succession of budding, blossoming, and withering. Even the ancient metal symbolism was not done away with by Enlightenment-era intellectual movements, but rather the economic and social underpinnings of its use over the course of epochs further sought.

1.6. Developments in the Perception of History in the 19th Century

The notion of a cyclical progression of history also occurs with the worldview of Karl Marx and Friedrich Engels. The foundation of their conception of the course of cultural development is the thesis posited by Ferguson and Morgan of a progression from "savagery" to "civilisation" via "barbarism". In his work *The Origin of the Family, Private Property and the State*, Engels explicitly refers to Morgan and further develops his sequence of prehistoric cultural stages. Morgan's initial sub-stage of "savagery" is viewed by him as the "childhood of the human race". As people were still living partially in trees, the foundations of their sustenance would have been fruits, nuts, and roots. The salient achievement of this elementary sub-stage is seen by him as having been the emergence of articulated speech (Engels 1969, 29). At the beginning of the subsequent intermediate sub-stage, the exploitation of fish and further maritime food sources would prevail. The precondition of this was mastery of simple waterborne travel. This would have been accompanied by the use of fire. Hunting (but also cannibalism) would only then have emerged (Engels 1969, 30). The final stage of "savagery" is characterised by specialised hunting by means of bow and arrow. The first settlement in villages would have occurred in this period. The material culture is distinguished by wooden vessels and tools, finger weaving, still without a loom, and also the emergence of polished stone tools (Engels 1969, 30–31). Together with the domestication of animals and the cultivation of crops, Engels considers the introduction of pottery to have been a crucial criterion for the transition from "savagery" to "barbarism". These achievements mark the initial stage of "barbarism". Here, already, the transition from a mode of life based upon hunting and gathering to one formed from agriculture and husbandry may be identified.

At the advent of the intermediate stage, Engels sees a bifurcation in the development of the eastern and western hemispheres. While, on the grounds of the great potential presented by its domesticable large mammals, the eastern of these concentrated on the taming and breeding of these species, in the western hemisphere the focus was more the development of vital cultivars and earth building techniques. Yet, Engels also posited within this stage a division of peoples into Semites and Aryans (Engels 1969, 31–32). At the beginning of the final sub-stage of "barbarism", he imagines the smelting of iron and the discovery of the alphabet. For Engels, an advance in the division of labour is a total novelty at the outset of "civilisation" (Engels 1969, 185). The lowest sub-stage of "civilisation" is nevertheless marked by production for personal use. It is only in the intermediate sub-stage that a surplus of property is noted, for example among pastoral populations. At the same time, a division of labour between the pastoral peoples and the "backward nations without herds" should become apparent (Engels 1902, 200). All of the preconditions for a regular exchange between these two groups should thus have been achieved. The upper sub-tier of "civilisation" finally demonstrates a division of labour between agriculture and manual labour. Increasingly, the production of a proportion of the fruits of labour directly for exchange should result in the development of a social class of merchants which enables an exchange which is now vital to survival between the individual producers of society.

Also arising from this excellent analysis and synthesis of historical theory was the critique of social conditions articulated by Marx and Engels which would prove to engender a political program of titanic and wide-ranging consequences. The characterisation of the social elite during the third stage of "civilisation" in Engels' *Origin* already delivers a seemingly timeless political statement:

> But here a class appears for the first time that captures the control of production in general and subjugates the producers to its rule, without talking [sic] the least part in production. A class that makes itself the indispensable mediator between two producers and exploits them both under the pretext of saving them the trouble and risk of exchange, of extending the markets for their products to distant regions, and of thus becoming the most useful class in society; a class of parasites, genuine social ichneumons, that skim the cream off production at home and abroad as a reward for very insignificant services; that rapidly amass enormous wealth and gain social influence accordingly; that for this reason reap ever new honors and ever greater control of production during the period of civilization, until they at last bring to light a product of their own periodical crises in industry. (Engels 1902, 201)

The last stage of "civilisation" presents states as its organisational form, the cycles of exchange of which are driven with the aid of metal coinage (Engels 1969, 186).

Proceeding from the premise of a "primitive society" without social differentiation, the course of history from a Marxist perspective is determined by class oppositions. The escalation of the clashes between ruler and ruled should culminate in revolutionary changes within society, at the end of which communism as a classless society stands anew (Marx, Engels 1971, 26–37. – On the reception of these theses within the study of prehistory, see Herrmann 1982. – Grünert 1989, 52–59). As both a point of departure and return for this trajectory, a society is envisioned wherein its members live in equality according to their needs and abilities, without differences in status or private property, at the least in terms of the means of production. In the attempts to implement practically these ideas within the socialist nations of the 20th century, the striving for communism did, indeed, assume a similar significance to the notion in Antiquity of the return of the 'Golden Age'. The foundations of the concept of a development beginning with a pre-state, classless society can already be recognised in the historical system of Immanuel Kant at the turn of the 18th to 19th centuries, according to which humans were supposed to have lived first as hunters and gatherers and then as agriculturalists and pastoralists (Grünert et al. 1989, 28–29). A differentiation between acquisitive (hunter-gatherer) and productive (agricultural-pastoral) modes of life also probably appears here in this context at the very latest, this having its basis in a purely economic depiction of this historical transition at the beginning of the Neolithic.

Thereafter, the 19th century was marked most noticeably by the pursuit of scientific discovery on an empirical basis, leading to a fundamental criticism of the image of history informed by the Bible and the antique sources. Conscious of the actually far greater age of humanity, a necessity emerged to subdivide the now markedly longer history of culture. The starting points for this articulation were provided by discoveries within geological research, on the one hand, and by typological and context-analytical observations of the archaeological finds themselves, on the other. Accordingly, the contribution of the work of Christian Jürgensen Thomsen is quite rightly to be recognised in the development of an academically-grounded three-period system (Hansen 2001). This notwithstanding, it hardly surprises that Thomsen came to a tripartite system of displaying the finds in the Copenhagen Museum and, in 1839, also published his division of the history of human culture according to tools of stone, bronze, and iron (Eggers 1986, 32–40). It would be far stranger were he to have come to any other division of prehistory on the strength of his observations. Taking into account the development of Antiquity's notion of division of human history up to the 19th century, Thomsen's tripartition of prehistory can certainly only be deemed consequent in nature. Regardless, he may be credited with establishing the traditional division inherent to European intellectual history into Stone, Bronze, and Iron ages by means of scholarly arguments based upon find contexts and typological observation. Should the development here portrayed of the notions of the ages' course prior to Thomsen be considered, then the fashioning of the three-period system is most certainly not to be understood as an "intellectual revolution" (contra Hansen 2001, 11). The initial point of departure for Thomsen's engagement with Antiquity was numismatics, an academic field requiring a classical education like none other. The degree to which Thomsen employed the antique sources in the development of his organisation of the Copenhagen Museum's displays and later also his historical classificatory system is apparent in reading the first page of his *Guide to Northern Archaeology* (Thomsen 1848), this being concerned with the "Extent and Importance of Ancient Northern Literature". Firstly, the influence of Classical literature upon Nordic literature is for him undoubted and, secondly, the praise lavished by him upon the antique sources demonstrates how well acquainted he was with them:

> This development of humanity has been mainly pursued through two channels: this unrest of the mind, so beneficial in its operations, we owe first and most signally to the ancient classical literature, that of Greece and Rome; by this it has been awakened, by this it has been nourished, by this Christianity itself has been urged forwards. The study of the Greek and Latin languages has given birth to the modern philology. By the example of the classical historians modern history has attained its eminence, of which fact there can be but one opinion among men of scientific acquirement; none but the uninstructed and superficial observer would ascribe the movement of a machine to the great external and visible wheels without taking into account the inner principle of motion. But with the remains of the old classical literature the moderns have moreover combined a new spirit of intellectual activity, sprung indeed from an ancient root, but which by degrees has expanded into a new tree with another stem and bearing other fruit. The knowledge of the old time embraced man, that of our time nature at large. The special subjects of the labours of antiquity were mythology, language, history, as also philosophy, or in other words the history of man; what in modern times has been added to these is

> the knowledge of the world in all its departments, or in general terms the history of nature. The latter could not have sprung into existence without the former, *no La Place*[1] *without an Euclid*, but the later development of knowledge has placed such a distance between the two, that they may be considered as independent of each other. Both together complete the culture of the human intellect. (Thomsen 1848, 2–3; my italics)

Thomsen acknowledges thereby to have altered an existing system by means of supplementing it with his own observations from the material record. "No Thomsen without Lucretius" might be stated in very much in the same vein!

Regardless, the criticism from the opponents of the three-period system are also to be encountered at such junctures, for example when Ludwig Lindenschmit expresses disapproval of Thomsen that his "cultural-historical fantasies" have "as a reflex of the poetic twilight of yore much to attract" but might never be brought into accord with the "natural division of things" (Lindenschmit 1860, 184). This oft-cited remark is nevertheless completely overblown, when it is considered that Lindenschmit himself presented the "antiquities" from the Roman-Germanic Central Museum according to a comparable division into Stone, Brazen, and Iron periods (along with a Frankish-Alemannic period) in his catalogue already published in 1858:

> Inasmuch as we apportion a certain designation only to those groups *to which a character or chronological allocation may be ascertained without doubt* […] we adhere on the whole to the celebrated central division presenting three large periods according to the chief employment of stone, copper, and iron for tools and weapons. This designates in the correct general outline the developmental trajectory of the entirety of human culture in a succession about which no difference of opinion might prevail, and encompasses simultaneously all of the transitional stages which, as the object of archaeological investigation, must be identified from the factual findings of the grave inventories. (Lindenschmit 1858, 5; my italics, trans. by A. Edmonds)

While he might eschew larger subdivisions (so as to avoid misapprehensions in the categorisation of the find corpus), Lindenschmit nevertheless evidently maintains the general tripartite division of the history of human culture and, indeed, its derivation from antique tradition. Admittedly, his published views, particularly in respect to the question as to whether or not a Bronze Age occurred within Northern Europe, remain contradictory and not always clear. From correspondence with Thomsen, it might be deduced that here Lindenschmit is the student, and indeed all too keen to learn from his older colleague in Copenhagen. It might incidentally be noted that it does not seem that Lindenschmit could ever truly rid himself entirely of the tripartite division of the ages and, perhaps more so than Thomsen, in the antique sense. Even his work on Sigmaringen's antiquities is marked by the classical terminology and operates quite evidently according to the terms Stone, Brazen, and Iron ages. Moreover, the chapter on "the so-called Brazen Age" can by no means be understood as a fundamental criticism of Thomsen's three-period system as portrayed by Eggers (Eggers 1986, 50). While Lindenschmit certainly dismissed the independent development of bronze tools in the north (Lindenschmit 1860, 157–158), he nevertheless leaves scarce doubt as to their chronological anteriority in contrast to iron tools, at the very least in the case of Southern Europe. Not even the periods of martial confrontation between the German Confederation and the Kingdom of Denmark over Schleswig-Holstein between 1848 and 1852 and again in 1864 had any bearing on the bonds of scholarship and friendship between Thomsen and Lindenschmit. Throughout these years, amicable letters journeyed back and forth between Copenhagen and Mainz; from these, it is apparent that not only plaster casts of valuable finds were traded, but also that a varied and mutually fruitful academic exchange prevailed (Street-Jensen 1985, 49–143).

Initially independent of Thomsen, Johann Friedrich Danneil in the Altmark and Friedrich Lisch in Mecklenburg came to a similar division of prehistory by means of the contents of graves (Eggers 1986, 43–49). In 1865, Lisch had already documented how once again the heated clashes over the three-period system came to be increasingly dominated by nationalistic voices in the wake of the events of the war of 1864. Even Lisch confessed to having already articulated the system in a publication from 1837 so as to dismiss the charge that the division of prehistory into Stone, Bronze, and Iron ages was a system of categorisation imposed by Danish academia. The details of this famed debate have already been sufficiently explained by Eggers (Eggers 1986, 50–52), and need not be recapitulated here, inasmuch as they are of little importance to the pertinent question as to the perception of the transition from hunting and gathering to farming and herding. The dispute over the partitioning of prehistory had relocated entirely to the realms of the artefacts themselves,

1. Meant here is Jean Baptiste Marie Charles Meusnier de la Place, the inventor of electrolysis and pioneer of lighter-than-air travel.

and it seemed as if the economic perspective regarding epochal change which had emerged at the beginning of the century would increasingly fade into relative unimportance.

1.7. The Invention of the 'Neolithic'

Regardless of whether the three-period system was common to Antiquity and the 19th century or not, the crucial transition from a way of life rooted in foraging to one organised around sedentism and agriculture is not described by this paradigm. It remains unclear as to when Thomsen envisions this historical transformation, his descriptions being concentrated entirely upon the material culture and ignoring for the most part the economic scope of the accompanying changes. That the shift from hunting and gathering to an agrarian lifestyle hardly proved to be of any central interest to Thomsen may well be as this transition occurred comparatively late within Scandinavia and therefore was less tangibly rich in consequences than in many other quarters of the ancient world.

Decisive progress towards dispelling the antique doctrine of the three ages and the recognition of a significant cultural historical segment still within the Stone Age was first achieved in the second half of the 19th century. In 1865, John Lubbock, close confidant, and research assistant of Charles Darwin, published *Pre-Historic Times*, his debut work as an academic author. The subdivision of the Stone Age into epochs of knapped and of polished stones and the coining of the terms Palaeolithic ('Old Stone Age') and Neolithic ('New Stone Age') may be traced back to him (Lubbock 1865, 60–82). It is these discoveries, novel at the time, which would find reception within the works of Marx and Engels (cf. Engels 1969, 29–35). In this case, the inspiration for this also came from Denmark, where Lubbock not only visited the National Museum, but was also able to view a few *Køkkenmøddinger* ('kitchen middens'). At the time, the famous debate between Jens Jacob Asmussen Worsaae and Johann Japetus Smith Steenstrup over the development of these shell heaps was at full tilt, the result of which was a commission for the study of the Køkkenmøddinger presenting its first results in 1851 (Fischer 2002, 34. – Kristiansen 2002, 11–14).

Once Jacques Boucher de Perthes and Charles Lyell had demonstrated the "antediluvian" age of humanity (Eggers 1986, 56–59), the way had been cleared for the Stone Age's detailed, stratigraphically-oriented subdivision over the remaining half of the 19th century. The salient academic figure during this period was Gabriel de Mortillet, who had already published a comprehensive system for the division of the Stone Age within his *Classification chronologique* of 1869. The basis of this classification was formed by artefact types which, similarly to Edouard Lartet within Palaeontology, he considered to be "index fossils" for a particular epoch. Pioneering in this respect were his observations in light of stratigraphic information, according to which initially core tools appear, followed by flake tools and then finally blade tools. Mortillet named the pertinent inventories after the sites at which they respectively occurred, drawing on the excavations of Lartet at Abri Le Moustier, the caves at Aurignac and at La Madeleine. In his last academic work, he discussed the "greatest known social revolution" in connection with the Neolithic (Mortillet 1897, 326). His thoughts as to the transition from the Palaeolithic to the Neolithic are also otherwise remarkable, and are very much modern in comparison to all of his predecessors within the study of the distant past. This modernity reveals itself in a radical dispelling of all developed models of the stages of human cultural history, inasmuch as he introduced a perspective purely grounded in empirically derived facts into the historical disciplines. Initially, he recognised that the gradual transition in the climate of the Pleistocene culminating in the conditions prevalent today had first formed the precondition for the emergence of a new intellectual and material culture (Mortillet 1897, 326). As an expression of these profound intellectual and also social and religious transformations, he pointed to the respectful treatment of the dead, which should offer intimations as to a fundamental shift in thought among human communities. Simultaneously, the burial of the dead should also indicate a deeper understanding of hygiene (Mortillet 1897, 326). The terminology employed by Mortillet might be understood as reflecting his ideological convictions, only becoming entirely intelligible in the context of his political activities during the February Revolution of 1848 (Junghans 1987, 23–45). He actively participated in events by (among other things) expressing himself in political writings on social questions. He sided with the circle of *Democrates-Socialistes* which had formed about Louis Charles Delescluze, and assisted in the flight into exile of Alexandre-Auguste Ledru-Rollin, initially one of the strident opponents of the regime of Louis Philippe and thereafter the defeated electoral adversary of Napoléon III (Junghans 1987, 25–33). So as to evade his own imprisonment for "incitement to sedition through writing" he stayed in Switzerland and the liberal Duchy of Savoy from 1849 until amnesty in 1863 (Junghans 1987, 35–45). Against such a political backdrop, Mortillet scrutinised humanity and its societal development with entirely new eyes; for him, the question as to the cultural development of humanity was of fundamental political significance. Mortillet not only recognised the appearance of polished stone tools as a characteristic element of

the Neolithic, but also flint arrowheads with barbs, pearls, and slices from mussel shells and stones, the introduction of pottery ("still crude and handmade and poorly fired"), the installation of burial pits, artificial caves and dolmens, the first pile dwelling settlements, and the first appearance of domesticated species (Mortillet 1897, 250–251. – See also Mortillet's *Tableau Archéologique* photographically reproduced by Junghans 1987, folding plate). He had thus identified all of the essential innovations appearing with neolithisation, at least for Central Europe. These transformations extend well beyond purely the sphere of artefacts, and also impact upon the social behaviours of human communities. For Mortillet, this innovation was prompted by the arrival of a new population group and he even held multiple waves of immigration to be possible, these, however, leading not to an expulsion of the autochthonous population, but merely to a cultural dominance over it (Mortillet 1897, 251–252). Mortillet entirely correctly localised the origins of this development in the East, although with a rather weak argumentation for one of such otherwise unerring judgement. As the establishment of the Neolithic economic model was accompanied by a fundamental shift in the sphere of intellectual perception, the impulse for this must then have originated from the oriental cradle of all great world religions, such as Brahmanism, Buddhism, Judaism, Christianity, and Islam alike, namely from the expanse between Asia Minor, the Caucasus, northern Persia, and Tartary (Mortillet 1897, 252). Yet, even here, for all its intuitiveness, his postulation was not entirely incorrect.

1.8. "Ex oriente lux" – on the Localisation of the Earliest Neolithic

Thus, by the close of the 19th century, all innovative elements of the Neolithic had already been identified. By means of the Køkkenmøddinger Commission, the idea of a Mesolithic period as an intermediate stage between the end of the Ice Age and the beginning of the establishment of agriculture and husbandry in Europe gradually began to break fresh ground. All that remained vague for the time being was the localisation of the origin of this novel economic mode and, moreover, the direction in which it had spread, this being on account of archaeological research's confinement to Europe's core territories. The great disadvantage of Mortillet's quasi-stratigraphically-situated system of chronology was, incidentally, the notion of epochs successively replacing one another and overlapping one another like firm chronological segments. Similarly to all other cultural epochs, the Neolithic was viewed as a chronological interval, the absolute beginning and end points of which simply could not yet be isolated any more precisely. At the onset of the 20th century, the Neolithic was depicted as a chronological block which, considered from the perspective of prehistory, would have come about in a manner analogous to those almost sudden disseminations of technical innovations or religious beliefs as found within historical periods and which, once established, would have enjoyed a static existence until its replacement by the Bronze Age. It was only first with a clear conceptualisation of the enormous chronological depth to the process of neolithisation that grasping the successive waves by which this new economic model was disseminated could gradually begin in earnest. Initially, however, this did not alter the static character of the Neolithic chronological segment, which was regarded somewhat as a fixed interval between the end of the foraging lifestyle and the coming of metal technology. It was only with the partial deconstruction of this epochal model in the 20th century that the dynamic character of the neolithisation process was revealed; it was recognised that this need neither strictly follow the hunter-gatherer economic mode, nor uniformly occur globally, but is rather highly flexible. Indeed, this process could even be reversible. There are many examples of societies which eschewed individual elements such as sedentarisation or agriculture so as to adapt to shifting environmental conditions, and transitioned back from a completely neolithised lifestyle to an existence as nomadising shepherds. Even an intensification of hunting and gathering can occur without further ado.

Excavations initiated at the end of the 19th century and the beginning of the 20th century at many sites in the Near East yielded new advances in the study of the earliest manifestation of the Neolithic, its localisation, and ultimately its trajectory of dissemination towards Europe. At the turn of the century, the Egyptologist James Henry Breasted had already coined the term "Fertile Crescent":

> The earliest home of men in this great arena of Western Asia is a borderland between the desert and the mountains, a kind of cultivable fringe of the desert, a fertile crescent having the mountains on the one side and the desert on the other. This fertile crescent is approximately a semicircle, with the open side toward the south, having the west end at the southeast corner of the Mediterranean, the center directly north of Arabia, and the east end at the north end of the Persian Gulf. The end of the western wing is Palestine; Assyria makes up a large part of the center; while the end of the eastern wing is Babylonia. This great semicircle, for lack of a name, may be called the Fertile Crescent. (Breasted 1916, 100–101)

This geographical region is distinguished by its frequent winter rains and offers advantageous conditions for the growth of the wild grains first cultivated by humans. Breasted was convinced that "civilisation" began in the East, and had first spread from the Near East to Europe (Breasted 1916, 33–34).

Vere Gordon Childe thereafter succeeded in bridging the void between the early agrarian cultures of the Near East and Europe, surmising thereby the key position of the eastern Mediterranean, Asia Minor, and the region of the Balkans in the transmission of the Neolithic innovations northwards and westwards. He confirmed the view of Breasted according to which the Neolithic development emerged in the East, spreading from there to Europe by means of the Mediterranean and Asia Minor (Childe 1928, 14–30). Consciously or not, he further developed Mortillet's notion of a "greatest known social revolution" during the neolithisation, so that the very nomenclature of the "Neolithic Revolution" seems to have been Childe's own creation even today. Despite this, the social shifts tied to neolithisation are formulated more clearly by Childe than by Mortillet, the former employing for this purpose the economic terminology of Marx, Engels, and their intellectual predecessors:

> The greatest moments – that revolution whereby man ceased to be purely parasitic and, with the adoption of agriculture and stock-raising, became a creator emancipated from the whims of his environment, and then the discovery of metal and the realization of its properties – have indeed been passed before the curtain rises. (Childe 1928, 1–2)

The actual advance in Childe's thought is nevertheless the discovery of a technical, social, and economic development occurring worldwide at differing speeds. While a similar succession of Palaeolithic, Mesolithic, Neolithic, Bronze and Iron ages may be evidenced in diverse places within the Old World, it can hardly be presumed that these stages were synchronised in their occurrence. This knowledge must certainly have been common to many researchers by the close of the 19th century; nevertheless, by means of Childe, these notions were corroborated by the absolute dates available at the time and, above all, formulated brilliantly:

> But, though everywhere homotaxial (occupying the same position), none of these Stages need be everywhere contemporary: for instance, the Neolithic Stage ended before 3000 B.C. in Egypt, in New Zealand only after A.D. 1800! The Ages or Stages are accordingly again only guides to relative chronology. (Childe 1958, 11)

The dynamic character of these processes had thus already become evident, even if the perspective of study remained largely confined to certain regions and their diachronic cultural development, lending themselves to expression in chronological scales or columns. Childe's innovation was that these columns not only developed at differing paces in different places, but also that phases of quickened and slowed growth were identifiable in each of their own respective trajectories.

From the 1920s onwards, Childe articulated his Oasis Theory, according to which the increasing dryness at the end of the last Ice Age had forcibly brought about sedentarisation through the concentration of populations at the oases developing as a result of this (Childe 1928, 31–49). The high density of settlement would thus also form the basis of technical innovations such as husbandry, development of land, and hydraulic economy, which would have become of crucial necessity to the feeding of humans. While the Oasis Theory would soon already be criticised (inasmuch as regionally differing transformations in the environment led to the emergence of elements of the Neolithic), Childe's ecologically determined perspective would regardless remain pioneering for the coming decades of research into the Neolithic. He was also the first to identify the close ties of the earliest Neolithic groups in Europe to certain resources such as some deposits of salt, copper, and gold in the Carpathian Basin, and the foundation of the first settlements in Central Europe upon loess soils (Childe 1929, map 1).

A clear counterargument was presented by the "Hilly Flanks" theory of Robert John Braidwood, according to which the preconditions for early agriculture would primarily be found in upland areas with sufficient precipitation, so that irrigation would not be an initial necessity (Braidwood 1952, 9–13). Here, he meant most notably the highlands of the Zagros Mountains, which simultaneously also offered a habitat for the wild variants of the earliest livestock, sheep, and goat. The "hilly flanks" of the "Fertile Crescent" would accordingly have presented the ideal basis for the development of this novel economic system, which then first reached Egypt in a developed state. Moreover, Braidwood sees the sedentarisation of humans as a flexible reaction by means of which to adapt to changing environmental requirements within this ecologically highly sensitive area (Braidwood 1957. – Braidwood 1962). From a present-day perspective, the northern periphery of the "Fertile Crescent" does, indeed, present a region within which the most important early crop cultures such as einkorn, emmer, and barley naturally occur in their wild forms. This area also covers the presumably somewhat broader region of distribution for wild forms of sheep and goat (Watkins

2007, 43–47). The soubriquet of the "Golden Triangle" was coined by Olivier Aurenche for this overlapping zone (Aurenche, Kozlowski 1999. – Aurenche 2007). At the very least, for the world of the ancient Near East and the European heartland, this region represents in a certain way the core zone for a Neolithic lifestyle consisting of a bundle of innovations transmitted more or less in its entirety into the neighbouring regions. Decisive elements of this "Neolithic package" are the domestication of animals and the breeding of cultivates, the development of grindstone technology, a production of polished stone tools and the production of ceramic vessels, whereby the conscious manufacture of products from burnt clay might feature as the development of the earliest artificial material in cultural history.

1.9. Affluent Hunter-gatherers

The study of recent hunter-gatherer groups permitted new and extensive insights into the life-worlds of societies prior to the introduction of agriculture and husbandry, which is not without repercussions for perspectives on the neolithisation process. Inasmuch, the essays compiled by Marshall Sahlins under the title *Stone Age Economics* are significant here. He imagines a Stone Age society living under Zen-like rules, the requirements of which are minimal and could be covered without high productivity (Sahlins 1972, 2). The assumption that hunters and gathers are in a permanent struggle for survival in a marginal environment are accordingly based on the ethnocentric criteria of a capitalist industrial society. With closer examination of tribal groups, it can, in fact, be concluded that these live in a veritable surplus as they are content with little. They had no concept of property as too many goods literally become a burden in light of their constant movement. Private property and mobility would thus seem to be at odds with each other, and represent a certain contradiction. Hunters and gatherers can also obtain a high yield within fertile regions with little work. This perspective was confirmed by Brian Hayden, according to whom generalised hunter-gatherer societies can develop into complex hunters and gatherers within rich biotopes. Independent of the potential for domestication among plants and animals, farming and herding could develop under certain circumstances (Hayden 1990). This argumentation was significant for the proponents of the thesis of the development of a Neolithic specifically in Middle Europe from local Mesolithic roots, without a migration from the south-east (cf. Tillmann 1993. – Kind 1998). By means of human genetic studies, this perspective seems to have been conclusively disproven for (at least) the diffusion of Linearbandkeramik (LBK) along the Danube towards Middle Europe (Haak et al. 2015. – Hofmanová et al. 2016. – Mathieson et al. 2018). This stance was confirmed by the discovery of a very low density among the local Mesolithic population (Richter 2017). These solitary hunters and gatherers would have scattered without any problem before the newly arrived Neolithic groups from the Carpathian Basin since they could make use of diverse habitats while the Neolithic communities would have been confined to the fertile loess soils. This would explain why isolated Mesolithic groups could survive into the 4th millennium BCE (Bollongino et al. 2013). Relationships of exchange between Mesolithic and Neolithic groups are, at the very least, evident at the level of stone tools (Gronenborn 1994). In recent years, the considerable economic potential of the pre-Neolithic societies has become more apparent. By means of so-called "low-level food production", mobile hunter and gatherer societies would have been capable (to a certain degree) of making sustainable interventions within the environment which would have contributed to its transformation by humans in terms of economic use (Smith 2001). Examples would be the contraction of dense forest by means of burning, as a result of which useful plants could proliferate through conscious or unconscious dispersal of their fruits. An extensive dispersal of the hazelnut, for example, into Middle Europe over the course of the Mesolithic could accordingly be explained (Heidgen et al. 2020). On the fringes of the LBK, the alternating relationship between the last hunters and gatherers, on the one hand, and the newly arrived farmers and pastoralists, on the other, remains of vital relevance. A particularly attractive description of the staggered process of adaptation of initially individual ideological concepts and later the entire productive economic mode by Mesolithic groups was the model developed by Marek Zvelebil with the example of the neolithisation in the Baltic which is supposed to have occurred in three phases, namely availability, substitution, and consolidation (Zvelebil 1986. – Zvelebil 1989. – Zvelebil 2001). This so-called Availability Model is applicable to other geographical regions on the fringe of the Neolithic oikumene, although the Mesolithic is poorly attested almost everywhere outside of the areas north of the LBK. From the diffusion of human genetic haplotypes and the ^{14}C dates then available, Albert Jay Ammerman and Luigi Luca Cavalli-Sforza presumed a radial expansion of the Neolithic in the sense of a Wave of Advance Model as coined by them (Ammerman, Cavalli-Sforza 1971. – Ammerman, Cavalli-Sforza 1984). This model functions akin to the principle of a stone thrown into water spreading concentric ripples. Interesting and of need of explanation, nevertheless, were those regions in which a hastened or delayed expansion of the neolithisation process could be evidenced,

which have markedly contributed to discussion of the dynamics of dispersal in Europe as a result (see, e.g., Lüning 1988). Moreover, some colleagues have described this process of distribution's specific dynamic as arhythmic (Guilaine 2007. – Schier 2009). An explanation for the stadial dispersion of Neolithic in leaps and bounds from the Near East via Anatolia initially into the Aegean, and from there into the Balkans, the Carpathian Basin, and Middle Europe is ultimately presented by the climate fluctuations over the course of the Holocene and their influence upon the Neolithic lifestyle in the different bio-geographical zones. A large role in this was most prominently played by the 8.2 ka event, a sudden decrease in global temperatures which has its peak at approximately 6200 calBC, and, to some degree, aids understanding of why the dispersal of the Neolithic remained confined to the eastern Mediterranean for such a long period of time (Weninger et al. 2005. – Weninger et al. 2009. – Weninger et al. 2014).

1.10. A Summary of the Prior History of Research

The construction of the Neolithic as a historical epoch appears as a product of the 19th century, presenting itself as the consequence of a conception of history extending back into Antiquity, of ages progressing in stages. Nevertheless, this perspective stands in opposition to the Neolithic's actual character. This does not comprise a single, easily delineated period, but rather several dynamic processes of dispersal on the part of diverse innovations. Within this, the most important element to note is the economic mode of production; at the beginning of neolithisation, this remained confined to those regions particularly suited to cultivation, serving the purposes of land reclamation and irrigation without any additional investment of effort. Other elements such as, for example, production of ceramics and grindstone technology came to be dispersed well beyond regions primarily suited to agriculture. Viewed globally, the production of ceramics had already occurred at various locations before the introduction of farming and herding, without altering the economy of the respective societies. That pottery production and an agrarian lifestyle need not necessarily be connected is evidenced by the early pottery-producing groups of the Baltic region and eastern Europe, the economic models of which would long remain founded in hunting, fishing, and gathering. It should thus be apparent that some innovative aspects of the process of neolithisation might occur within the realms of a similarly unfolding societal development as contemporary phenomena, or indeed in a chronologically staggered manner quite without recourse to one another. It might even be supposed that the chronologically shifting appearance of certain innovations is simply a characteristic of neolithisation, which primarily describes merely the transition from a hunter-gatherer economic mode to differentiated manners of economic activity on the basis of agriculture and livestock keeping. Thus, the breeding of plant cultures and the domestication of animals need not always occur in tandem, although both developments might alternately stimulate each other, and, as a result, frequently appear in conjunction. The tying of human groups to a place in order to nourish and protect cultivars drove further technological advances, such as pottery and metallurgy. The actual trajectory of cultural development nevertheless teaches that both innovations might also emerge entirely independently from agriculture and pastoralism, or even a sedentary existence.

One of the aims of the discipline of history is the classification of past events. The demarcation of historical epochs results from the use of chronological units, the contents of which permit delineation from one another. Nevertheless, it poses considerable difficulties to move about the period completely independently of these received systems, as a result of which privileged, already established chronological systems are most frequently used. Most striking within western intellectual history is the notion of a tripartite division of history's course, this ultimately hailing from the vegetal metaphor of growing, blooming, and perishing. In and of itself, however, the processes of neolithisation were syncopated in their progress when considered against these historical units as defined through classification. The innovations subsumed under the heading of the Neolithic package seem thereby rather less suited to defining an epoch in their entirety. Rather, the Neolithic depicts far more an experimental phase for a mode of living which is estimated at least in the Western world as a civilisational achievement.[2] Nevertheless, history can take an entirely different course and, indeed, did so in various regions of the world. The dynamic processes of neolithisation began in differing places in the world at different times and, in some areas, still continue.

1.11. The Perception of the Balkan-Carpathian Region

An aim of this book is to write the history of the spread of the Neolithic for a single region in Europe. At the same time, however, this is not a single story, but the story of the diversity of this process in its various facets as it spread. This work deals with the specific region of Europe closest

2. On the multifaceted nature of the term "civilisation", see Elias 1997, 1–42.

to the zone in which the neolithisation process of the Old World began.

The term "Balkan" entered South-eastern Europe by means of Turkish and denotes a wooded hill landscape; in the Slavic languages, the region is by contrast *Стара планина* or 'Old Mountain'. In Antiquity, this mountainous region was known under the name *Αἷμος* or *Haemus*. In a tighter sense, this refers only to the terrain traversed by the mountain range spanning from eastern Serbia in the west to the Bulgarian coast of the Black Sea. In a more expansive sense, it also describes all of the countries ranged between the Adriatic and the Black Sea respectively, including the Julian Alps, the northern Aegean and the North Pontic steppes and, beyond Bulgaria and the nations formerly composing Yugoslavia, Romania, Moldavia, Albania, mainland Greece, and even the European regions of Turkey.

Were it to be asked in Kiel where the Balkans begin, one might hear "in East Berlin". By contrast, the quip that the Balkans begin on Rennweg in Vienna's 3rd district is popularly attributed to Prince Metternich.[3] While archaeologists also tend to append the entire Carpathian Basin to the Balkans, this is not the belief of the majority of Hungarians. A positive image of the Balkans also does not generally abound among the South-eastern European nations. This perception is marked by the military confrontations of the last centuries and the near present, which prompted the coining of the byword "Balkanisation". Meant by this is the territorial fragmentation of once-larger political entities such as the Ottoman Empire and, in the most recent past, the fracturing of Yugoslavia. It is only in Bulgaria that there is a tendency towards a positive connotation of the term "Balkan" and its use even in branding (Balkan Airlines, Balkantourist) and tourism (Balkan folklore, Balkan cuisine, etc.). The approach to this term is thus problematic and shifts depending upon the standpoint adopted. In describing the manner in which landscapes, places, and people are perceived by outsiders, and thereby their own respective concepts, interests, and power relationships introduced, probably the most useful notion to summarising this is that of "Imaginative Geography" as coined by Edward Saïd (Saïd 1978). Much as in the case for the term 'Orientalism', the word 'Balkan' is a blank canvas upon which wildly varying perceptions of a geographical space might be projected. These differing perceptions of the Balkans may be reduced *cum grano salis* to three images named in an article by Ruth Tringham: *Bridge*, *buffer zone*, and *mosaic* (Tringham 2000). The 'bridge' paradigm can ultimately be traced back to Childe, who emphasised the geographical position of the Balkans between Continental Europe and the Near East in the dispersal of the Neolithic lifestyle from the latter to the former (Childe 1928. – Childe 1956). Since then, the neolithisation has been perceived as the most significant revolution in European cultural history and the earliest European Neolithic localised on the Balkan Peninsula. While the eastern Mediterranean was understood to be the origin point for the diffusion of the Neolithic to Europe, other regions of the world have more recently been considered. Ceramic production, grindstone technology, and polished stone tools were evidently known in Eastern Asia long before the development of agriculture and husbandry, and could expand westwards into cultural areas with a purely Mesolithic economic mode. Prior to this, the route from the Middle East via Anatolia, the Aegean, and the Balkans had served as the most important and, indeed, only path of dispersion for the Neolithic to Europe. However, with the thesis of the spread of the Neolithic via the Balkans to Continental Europe, Childe had also consciously or unconsciously introduced into the discussion a very traditional conception of the Balkans as a 'buffer zone', somewhat in the manner of that between the Islamic states in the East and the Christian lands of the West (Tringham 2000). In the periods prior to the neolithisation, this space also served as the main corridor of communication for the dissemination of important innovations such as copper metallurgy over the course of the 6th and 7th millennia BCE and iron smelting which spread as a new technology from the eastern Mediterranean to Continental Europe at the end of the 2nd and the beginning of 1st millennium BCE. The 'bridge' paradigm swiftly won popularity among prehistorians and, indeed, not only on account of Childe's force of argumentation but also because spectacular finds were unearthed in the Balkans such as those originating from the Chalcolithic burial ground at Varna. When the reasons for the popularity of the 'bridge' paradigm are sought, then Saïd's thesis regarding the impact of fascination about the Orient upon the West can hardly be avoided. The 'bridge' paradigm is accordingly acclaimed among local researchers within the Balkans as they wish their region to be considered as significant as

3. These lines go back to a very fruitful discussion with Bogdan Athanassov during preparation of a joint manuscript for the conference "Die Donau-Balkan-Region als Kontaktzone zwischen Ost-West und Nord-Süd". Nonetheless, the text printed in the proceedings hardly contains any of the original ideas for this article (cf. Athanassov, Krauss 2015). At this point, however, I have to appreciate how much Bogdan contributed to this. Like no other, he understands the perception and meaning of the Balkans in Europe from the perspective of Sofia and Brussels alike.

possible, encouraging comparison with other, less politically fragmented regions of Europe. This notwithstanding, the disadvantages of the 'bridge' paradigm are very much evident. First and foremost, the perception of the Balkans as a bridge leads to the simplification and neglect of local processes. A consequence of this is that processes of migration and diffusion are the central source of societal and political transformations within prehistory for many South-eastern European researchers, a thesis which may be subjected to doubt. The aforementioned work by Tringham directly demonstrates that the Neolithic already features processes marked by regional variability and different patterns of interaction. While a transfer of knowledge and even a migration of people and domesticated animals from the south-east into the Balkan region is assumed by the vast majority of researchers due to the striking lack of knowledge of the pre-Neolithic settlement in South-eastern Europe (Childe 1958. – On this, in summary, Scharl 2004, 91–105), paradigms of 'bridge' and 'buffer zone' are too simple to describe this. The conception of the South-eastern European Neolithic as a 'mosaic' ultimately necessarily results from research being heavily confined to individual states, which has provoked a division along present-day national borders of cultural expanses actually belonging to one another (cf. Krauss 2010).

Within scholarly discourses on the dissemination of agriculture, husbandry, and sedentary lifestyles to Europe, the Balkan-Carpathian sphere accordingly plays a vital role. Tellingly, nevertheless, the observation often one-sidedly proceeds from the neolithisation process without according the local hunting, gathering, and fishing populations any shrift in these transformations in subsistence forms and transitions in material culture. Earnest attempts to reverse this perspective require comparison with areas beyond the Balkan-Carpathian region (cf. Fiedel, Anthony 2003). For a very protracted period, the only evidence for a coexistence of Mesolithic populations and early farmers remained sites at the Danube Gorges. It is only now as the find situation densifies for those periods directly prior to the beginning of the Neolithic in South-eastern Europe and the realisations about the continuation of Mesolithic traditions generally within percussive lithic technology and subsistence forms multiply that the process of neolithisation might be regarded from both perspectives.

2. Notes on the Mesolithic in South-eastern Europe

In contrast to Central Europe, two different terminologies are used in the Aegean for the cultural trajectory from the end of the last Ice Age to the beginning of the Neolithic. The term Epi-Palaeolithic is used for western Anatolia, as is generally the case for the eastern Mediterranean. This is based on the notion that the early Holocene environment did not change dramatically in the same way as in Europe (where there is a clear turning point with the reforestation of the Ice Age tundra landscapes). In contrast, the hunting strategies of the people in the Mediterranean region (where the sea level had risen systematically, but the natural area remained largely unchanged) did not have to be readjusted. In this respect, it seems logical to assume that the Palaeolithic tradition continued into the Holocene. This idea was terminologically characterised by the term Epi-Palaeolithic. In addition, the geometrical microliths usually associated with the Mesolithic are not key artefacts for the Aegean (Reingruber 2008, 11–12). For large parts of Greece, however, the term Mesolithic is in use (Perlès 2001, 20–37). Compared to other regions in Europe, the time before the arrival of the first farmers and stockbreeders in the Aegean has been well researched here. Precisely because the question of the origins of the Neolithic was of particular importance for Greece, the Mesolithic settlement of the Aegean increasingly became the focus of research.

What then remained was the academic challenge of shedding light upon the period between the definitive end of the Palaeolithic and the beginning of the neolithisation in the Balkans. Solutions to this problem may well be found by means of a closer analysis of the natural sphere, inasmuch as the environment in South-eastern Europe did not change to the same degree as in Central, Western, and Northern Europe and the region of the Alps (Vaptsarov 1973, 125). It would seem rather that the climatic events connected with continental glaciation were only tangible within the Balkans and Carpathians in weakened form, this spelling a far less radical alteration of the natural environment there and the possibility for communities to retain their traditional modes of life for the most part. In the north of Europe, by means of contrast, the transformation of the natural world also becomes visible in the artefacts. Vital here is the metamorphosis from Palaeolithic big game hunting in open spaces to specialised forest hunting in the Mesolithic. It would thus seem that the prospects are poor for detecting a Mesolithic within the archaeological record of the Balkans as no deforestation and reforestation in the wake of the Ice Age is visible in the region, and thus no transformation thereby in lifestyle. By means of contrast, a crucial phenomenon in the wake of the continental glaciation in this region was the widespread windborne scattering of loess (Fotakiewa, Minkov 1966. – Minkov 1968). In particular, the depositions of these sediments on the lower Danube and in the Carpathian Basin are so massive that it seems all but inconceivable that the settlement of large swathes of land would have been possible during the active process of windborne deposition (at the very least). A periodic retreat of the population from these regions during periods of loess deposition would be plausible, which, in turn, would justify lacunae in the archaeological record. Concurrently, earlier finds cannot be easily discovered in this region due to this widespread surface sedimentation. It is on these grounds that the Palaeolithic sites in the Balkan-Carpathian region are entirely situated either in caves or in the deep recesses of river valleys devoid of loess. Generally speaking, the Mesolithic in South-eastern

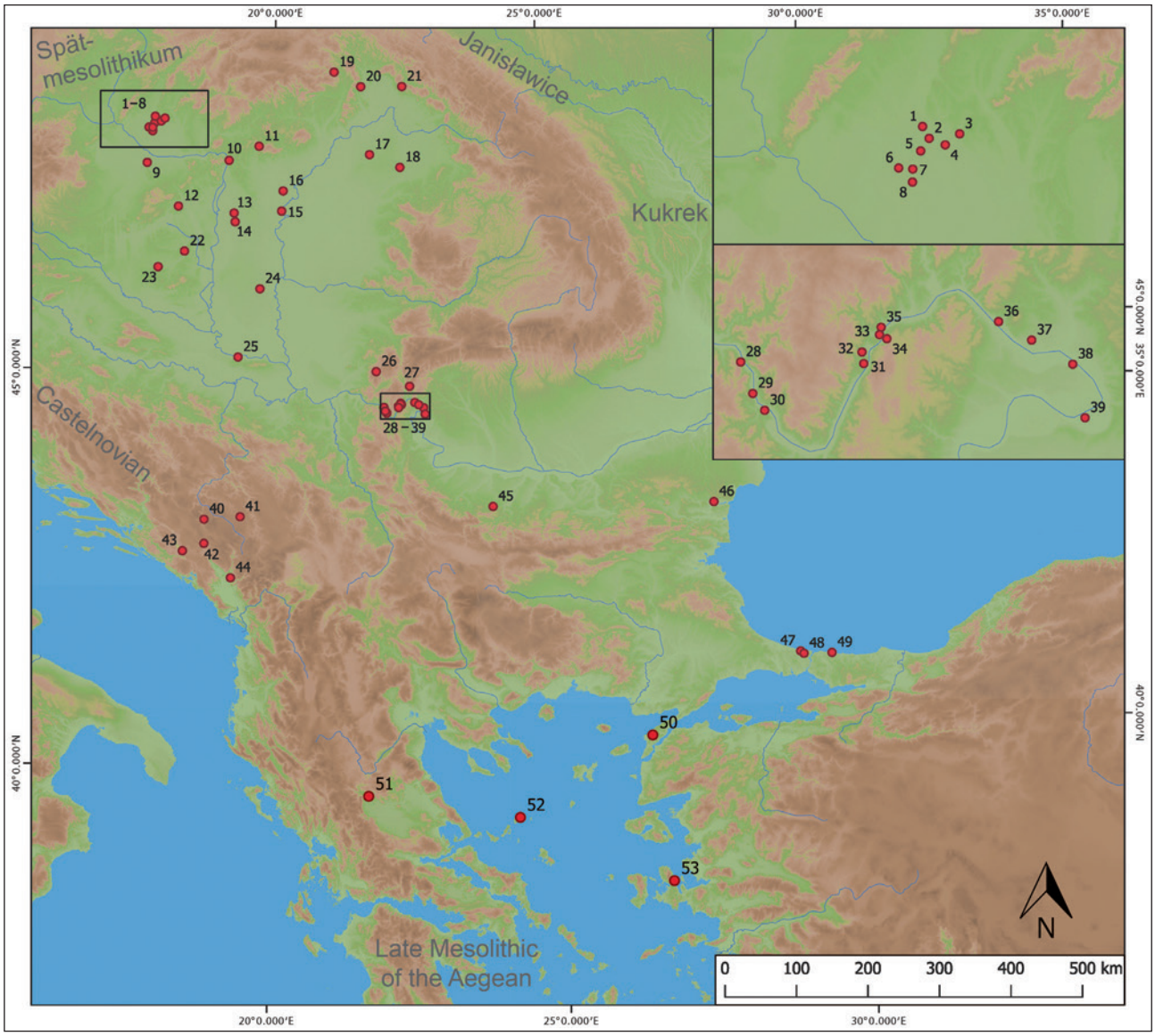


Fig. 1: Map of Mesolithic and Epi-Palaeolithic sites mentioned in the text. – 1. Sered´ I. – 2. Dolná Streda. – 3. Sládečkovce. – 4. Šoporňa-Štrkovec. – 5. Veľká Mača. – 6. Čierna Voda. – 7. Mostová. – 8. Tomášikovo. – 9. Győr. – 10. Sződliged. – 11. Pásztó-Mária tanya. – 12. Sárrét bog. – 13. Kunpeszér-Felsőpeszéri út-Homokbánya. – 14. Kundacs-Köztemető. – 15. Tószeg-Áldozó-halom. – 16. Jászság area. – 17. Hugyaj/Érpatak. – 18. Ciumești II. – 19. Medvedia Cave. – 20. Barca I. – 21. Kam´janyzia I. – 22. Regöly 2. – 23. Kaposhomok. – 24. Hajdukovo. – 25. Bačka Palanka. – 26. Hoțu Cave. – 27. Hoților Cave. – 28. Padina. – 29. Lepenski Vir. – 30. Vlasac. – 31. Cuina Turcului. – 32. Veterani Terasă. – 33. Răzvrata. – 34. Hajdučka Vodenica. – 35. Icoana. – 36. Ostrovul Banului. – 37. Schela Cladovei. – 38. Ajmana. – 39. Ostrovul Corbului. – 40. Odmut. – 41. Medena Stijena. – 42. Vrbička Cave. – 43. Crvena Stijena. – 44. Vruća Cave. – 45. Ohoden. – 46. Pobiti Kamani. – 47. Ağaçlı. – 48. Gümüşdere. – 49. Domalı. – 50. Üçdutlar. – 51. Theopetra. – 52. Youra, Cyclops Cave. – 53. Kayadibi (R. Krauß, B. Dutilleux).

Europe has been comparatively poorly studied, and the more intensive studies are concentrated on selected areas, besides the Danube Gorges mainly in the eastern Carpathian Basin (Fig. 1).

Should the manner in which the Neolithic was able to establish itself in this area be studied, then not only is the dynamic of the neolithisation process vital to this, but also the issue of the pre-Neolithic occupation (Krauss 2016a). It is only in this manner that a credible hypothesis or model might be developed as to how the transition from mobile hunter-gatherers to agricultural and sedentary communities occurred. In addition to the environmental factors mentioned above, various other aspects might have contributed to the scarce evidence of this particular period. A low density or

high mobility on the part of the Mesolithic population might be assumed, this having then resulted in only transitory sites. That Mesolithic sites are located in unstable geomorphologic situations or in a position where they have been destroyed by modern agricultural activities has also been taken into account (Eichmann, Kertész, Marton 2010, 211). Furthermore, it is also self-evident that a period with potentially poor find material is far more difficult to investigate than epochs yielding a rich material culture. Accordingly, there is no specific terminology for the South-eastern European Mesolithic. Of use here for orientation is the terminology developed within Central Europe – this covering the climatic stages from Pre-Boreal to the early Atlantic period or, in absolute dates, the timespan between 9700 and 5500 calBC. It is divided into Early Mesolithic with the two technocomplexes of the Beuronian and the Sauveterrian from 9700–7000 calBC, and the Late Mesolithic or Tardenoisian from 7000–5500 calBC respectively (Kozłowski S. 2001, 261–262. – Kind 2009. – Eichmann, Kertész, Marton 2010, 213). This is followed by the so-called *Endmesolithikum* which is regarded as being already contemporaneous with the appearance of the first Early Neolithic groups in Central Europe, namely La Houguette in the west and Linearbandkeramik (LBK) in the east respectively (Gronenborn 1997, 132–139).

2.1. The Northern Aegean and Marmara Region

For the Mesolithic of the northern Aegean, the Theopetra Cave is of key significance for the history of research. Systematic excavations have taken place there since 1987 (Kyparissi-Apostolika 2000). The stratigraphy of the cultural layers in the cave was important because there are layers from the Mesolithic and the Neolithic that are documented. However, only the lowest, Palaeolithic layers were undisturbed; those from the Holocene had been heavily damaged or ransacked by seismic activities and looters (Reingruber 2008, 46). The oldest settlement even goes back to the Middle Palaeolithic. Compared to the older and more recent periods, the Mesolithic in Theopetra is less well explored.[4] To make matters worse, apparently only very few stone artefacts from this time horizon were found in the cave. It was not only traces of settlement that could be detected there; the cave had apparently also served as a burial place. The grave of a young woman was also found within the layers of the Upper Mesolithic. A dense sequence of ^{14}C data could be obtained from the various layers. According to this, there seems to have been an interruption between the latest Mesolithic and the beginning of the Neolithic settlement (Reingruber 2008, 48–50). The animal and plant remains from the cave have been well researched (Tsartsidou et al. 2015), and some of the Neolithic pottery has also been published. The lithic inventory of the Mesolithic period, on the other hand, has hardly been discussed (Reingruber 2008, 50–51).

The so-called Cyclops Cave on the small, now uninhabited island of Youra in the northern Sporades is of great importance for the Mesolithic of the northern Aegean. This site also evidences settlement up to the Neolithic period. However, there are also large gaps in the sequence of the ^{14}C data between the Early and Late Mesolithic, on the one hand, and the Neolithic settlement, on the other (Reingruber 2008, 40–41. – Sampson 2008, 208–210). An extensive range of waste and food refuse has been found within this cave. Noteworthy among the Mesolithic finds are some mortars, grinders, objects with jagged edges that could have been used for sawing, and arrow shaft smoothers made of rock (Figs. 2–4). Finds of numerous bipoints and fishhooks made from bones point to an increased use of marine resources (Fig. 5). In the refuse, this is also reflected by large quantities of mussel shells, snails, fish bones, and bones of sea birds (Karali 2011. – Mylona 2011. – Powell 2011. – Trantalidou 2011); however, goats and pig were also eaten. Adamantios Sampson even assumes that these animals were kept in pens in the front area of the cave (Sampson 2008, 199–200), which would represent a remarkable aspect of early human-animal relationships even before the beginning of sedentarism in the region. Finds of some human skeletal remains seem to belong to the earlier periods of the Mesolithic (Sampson 2008, 214–216). The range of flint tools found is impressive, and offers the best insight into the Mesolithic technology of the entire Aegean (Figs. 6–8). Both local siliceous stones (164 specimens or 91.62%) and obsidian (15 specimens or 8.38%) were used as raw materials (Kaczanowska, Kozłowski 2008). Because of the geographical proximity, it can be assumed that the obsidian comes from the island of Melos. The artefact spectrum consists of 112 flakes (62.57%), 13 blades (7.26%), 7 chips (3.91%), 2 chunks (1.12%), and 45 tools (25.14%). The latter consist of several types of scrapers on flakes and blades, splintered pieces, burins, and retouched tools. A few microliths such as crescents, trapezes, and simple backed blades are found among the obsidian tools (Kaczanowska, Kozłowski 2008), which can be considered exceptions within the range of Mesolithic finds of the Aegean.

4. Catherine Perlès does not consider the information from the excavations to be useful because the layers are severely disturbed. This is demonstated by recent studies, the results of which, however, have not been published (Perlès 2001, 46, fn. 17).

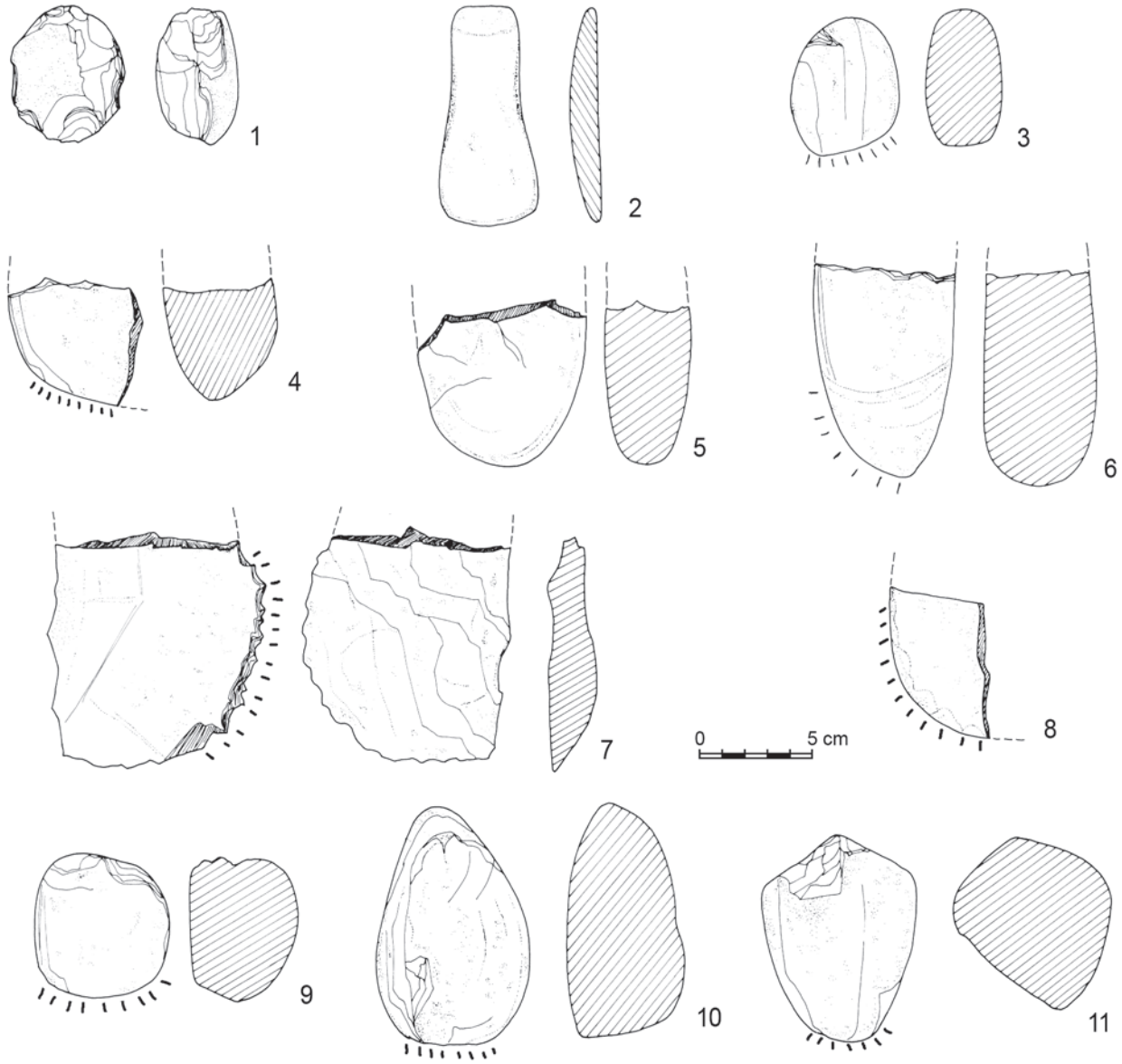


Fig. 2: Youra, Cyclops Cave. Mesolithic stone tools from rock (after Sampson 2008, fig. 7/1–2).

On the eastern side of the Aegean, a team of researchers from the Ege University, Izmir, has carried out an extensive survey on the Karaburun Peninsula in recent years (Çılıngiroğlu et al. 2020). At Kocaman and Kayadibi, lithic artefacts typologically regarded as pre-Neolithic were recorded. The raw material used comes mainly from local sources, and is of middling quality. It is dominated by white chert with dark intrusions, grey-brown flint, and yellow-brown siliceous rock with opaque limestone intercalations. While the finds from Kocaman are classified as late Pleistocene (and thus as Epi-Palaeolithic), most of the finds from Kayadibi can be interpreted as Mesolithic. However, a sickle blade was also found in the material (Fig. 10/14), which is considered to be post-Mesolithic. Technological information is provided by single-platform blade and discoidal flake cores in the material (Fig. 9/1–6). Blades seem to be rare. However, bipolar splintered pieces produced mostly on flakes are more common. The tools consist of end-scrapers, side-scrapers, retouched flakes and denticulated-notched tools (Figs. 9/7–11; 10). Most tools are produced on flakes. There is only one retouched blade.

Between 1973 and 1980, the region where the Bosporus meets the Black Sea yielded find inventories collected within an area of sand dunes which might be thought from

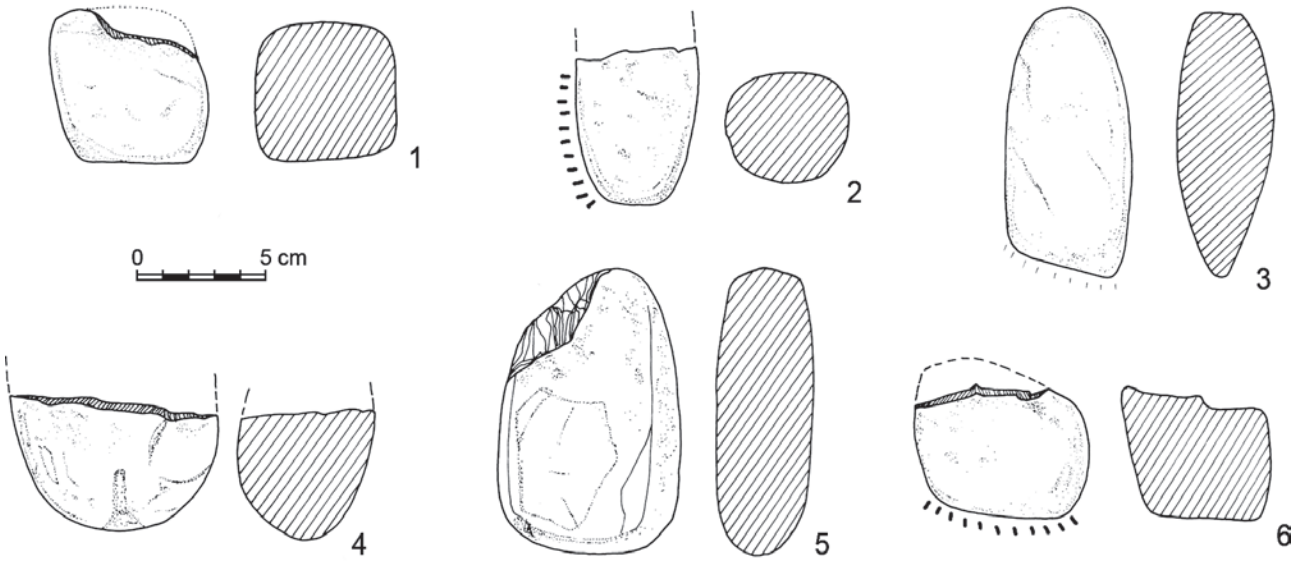


Fig. 3: Youra, Cyclops Cave. Mesolithic stone tools from rock (after Sampson 2008, fig. 7/4).

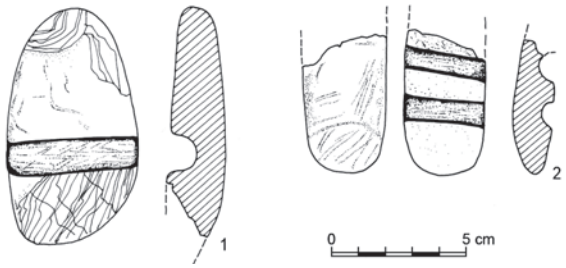


Fig. 4: Youra, Cyclops Cave. Mesolithic shaft straightener made from stone (after Sampson 2008, fig. 7/4).

their characteristics to be of pre-Neolithic date (Gatsov, Özdoğan 1994). Three sites are particularly emphasised: Ağaçlı, which was uncovered in 1980 by means of an open-cast lignite mine; Domalı, unearthed by means of the excavation of a gravel quarry and the construction of a summer resort; and Gümüşdere, a site also discovered during the construction of a hotel complex. All three sites must now be regarded as destroyed. Considering the history of the Black Sea's development, it is to be inferred that the entire original shoreline of the western coast lies submerged well away from the present shoreline; thus, the aforementioned sites would have been situated much further inland than it would seem today. The inventory of the blanks of each of the three sites is dominated by unidirectionally exploited cores (Figs. 11–12). This exploitation was evidently realised by means of punch technology. The intended tools consisted of scrapers, among these thumbnail scrapers and laterally truncated blades (Figs. 13–15). It is difficult to characterise these surface finds. Since the collection does not contain any obvious Mesolithic types, it could also be significantly older, for example Final Palaeolithic.

From the other, western end of the Marmara Sea, a further tool inventory from Üçdutlar on the Gallipoli Peninsula has been known about for some years (Fig. 16). The microlithic scrapers and bladed tools are a similar character to the material from the south-western edge of the Black Sea. The question as to how much earlier than the beginning of the neolithisation in this region this stone tool inventory dates is presently obscure. To presume a later date solely on the strength of the microlithic size of the tools seems far too premature. It is only by means of excavation of productive find contexts that the cultural historical value of this tool inventory from surface collection might be appropriately gauged.

A noticeable feature of the Mesolithic in the northern Aegean is the absence of or infinitesimal number of microliths. Compared to the neighbouring regions to the north, it is interesting to see that microlithic forms such as trapezes, triangles, and lunets did not appear here until the Neolithic. Of course, it should be noted here that the Aegean Early Neolithic overlaps chronologically with the Late Mesolithic in the Balkans. Nonetheless, it is noteworthy that microlithic artefacts increasingly occur in the Aegean up to the Late Neolithic, for example in the Late Neolithic material of the Cyclops Cave (Sampson 2008, figs. 8.8–8.11). This means that, unlike in Central Europe, the Mesolithic in the Aegean or in the Balkans is not determined by the occurrence of microliths. In the Aegean, they remain in use throughout the entire Neolithic, and probably even beyond (Gurova 2017).

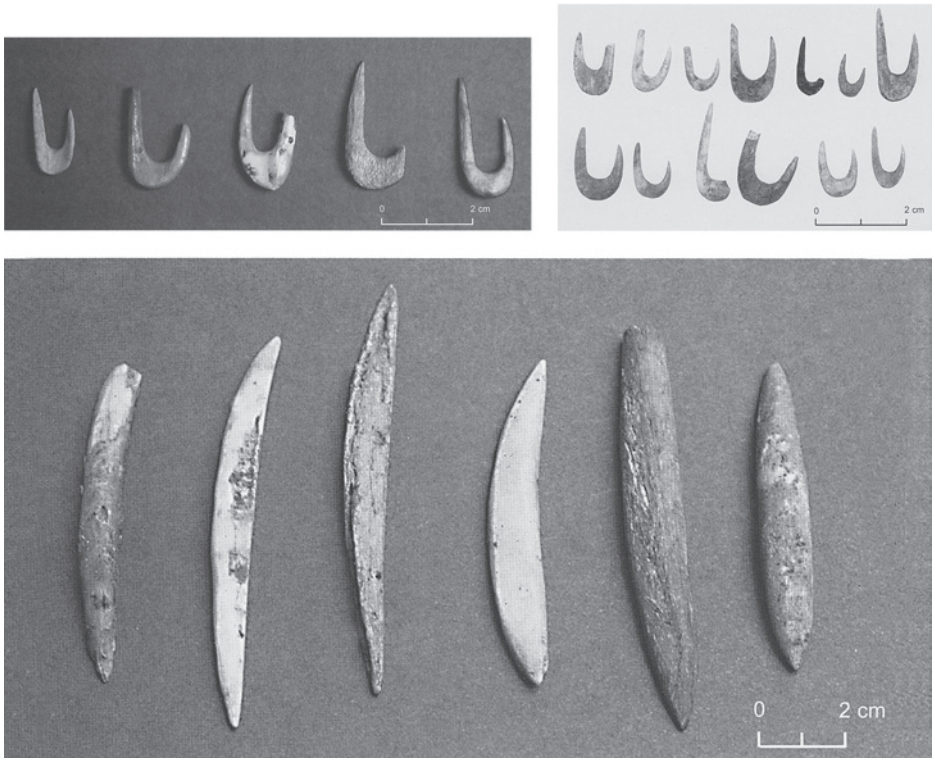


Fig. 5: Youra, Cyclops Cave. Mesolithic fishhooks and bipoints made of bone (after Sampson 2008, pl. 12/1).



Fig. 6: Youra, Cyclops Cave. Mesolithic chipped stone artefacts (after Sampson 2008, fig. 8/1).

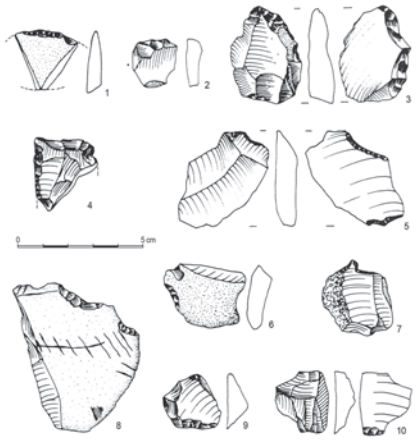


Fig. 7: Youra, Cyclops Cave. Mesolithic chipped stone artefacts (after Sampson 2008, fig. 8/2).

2.2. The Danube Gorges

Well researched by comparison is the pre-Neolithic settlement along the Danube Gorges ('Iron Gates') where, in the course of construction of two dams in the section of the river between the Carpathian Basin and the lowlands of the Lower Danube in the 1960s, numerous find sites were discovered and studied. The sites of Vlasac, Padina, and Hajdučka Vodenica on the Serbian bank of the Danube are relevant initially to the Late Mesolithic period immediately prior to the Early Neolithic. Excluding some burials of the Early Mesolithic originating from the period between the second half of the 10th millennium and roughly 7300 calBC, settlement only began at the celebrated site of Lepenski Vir after 6200 calBC, and thus in an age in which the Neolithic had already widely

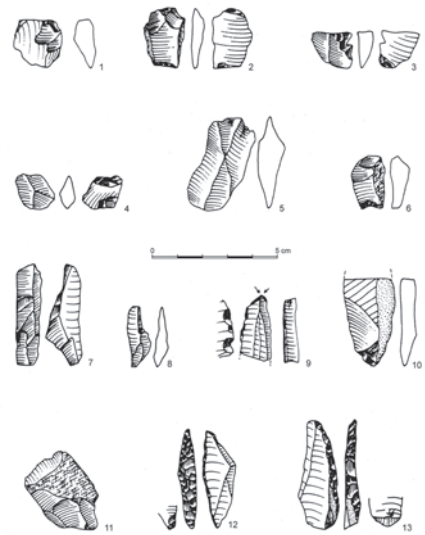


Fig. 8: Youra, Cyclops Cave. Mesolithic chipped stone artefacts (after Sampson 2008, fig. 8/3).

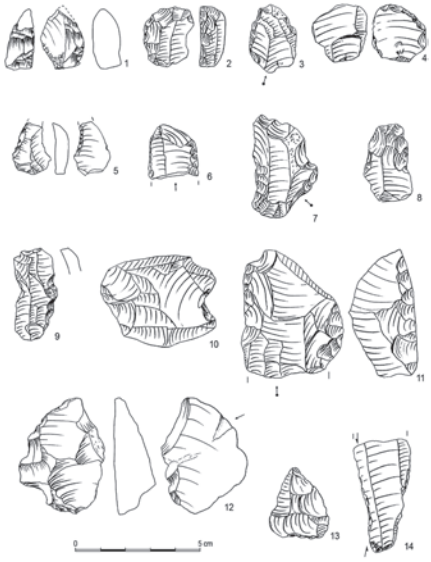


Fig. 10: Kayadibi, Karaburun Peninsula. Retouched tools (after Çilingiroğlu et al. 2020, fig. 11). – 1–2. Backed pieces. – 3–5. Retouched flakes. – 6. Retouched blade. – 7–10. Denticulated-notched tools. – 11–13. Side-scrapers. – 14. Sickle blade.

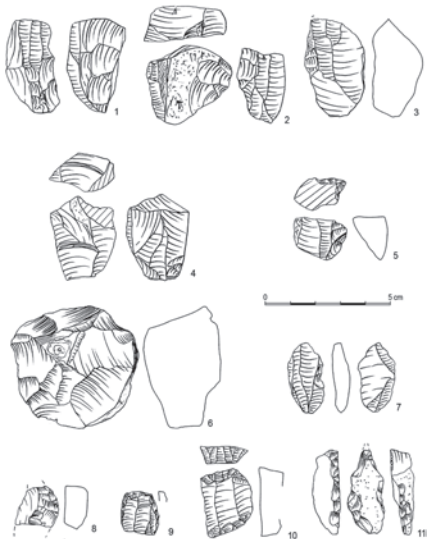


Fig. 9: Kayadibi, Karaburun Peninsula. Flint artefacts (after Çilingiroğlu et al. 2020, fig. 10). – 1–6. Cores. – 7. Splintered piece. – 8–10. End-scrapers. – 11. Perforator.

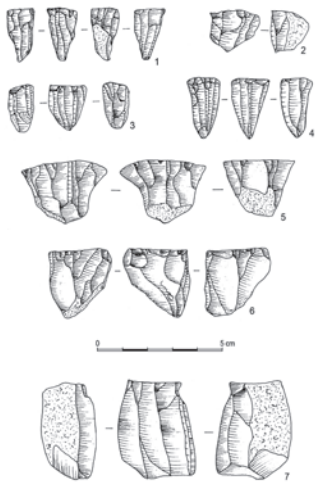


Fig. 11: Ağaçlı. Single-platform cores (after Gatsov, Özdoğan 1994, fig. 1).

spread within the zone beyond the Danube Gorges (Borić 2016, 16–33). To this period also belongs Ajmana lying further downstream. The sites of Icoana, Ostrovul Corbului, Ostrovul Banului, Schela Cladovei, Veterani Cave, Veterani Terasă, and Răzvrata on the Romanian bank of the river further evidence find layers with Late Mesolithic settlement. As in the case of Lepenski Vir, the settlement in Cuina Turcului first begins with the spread of the Neolithic into the region, as there is no evidence of continuity from the older, Epi-Palaeolithic settlement. At Schela Cladovei, settlement ends with the beginning of the Neolithic in the region (Boroneanț 2011, 121–137. – Bonsall, Boroneanț 2016).

The new dating of the sites at the Danube Gorges permits the connection of the fishing settlements at the exit of the Danube from the Carpathian-Balkan mountain chain to the Early Neolithic sites of the region (Borić 2002. – Borić 2011). It is the specific natural environment within the narrow canyon of the Danube where it breaks through the

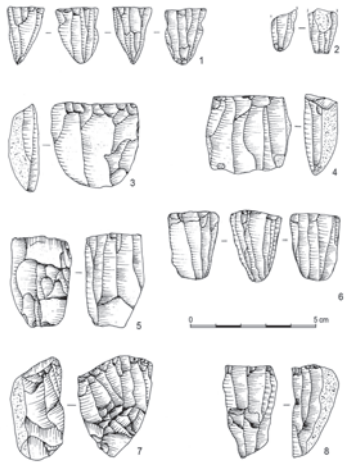


Fig. 12: Ağaçlı. Single-platform cores (after Gatsov, Özdoğan 1994, fig. 2).

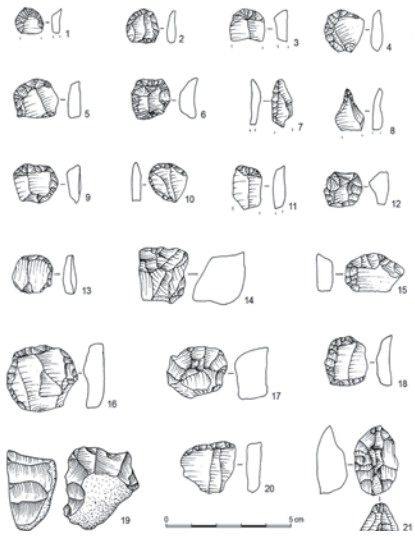


Fig. 13: End-scrapers and perforators from Ağaçlı, Domalı and Gümüşdere (after Gatsov, Özdoğan 1994, fig. 3).

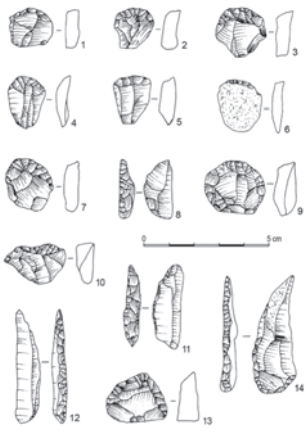


Fig. 14: Ağaçlı. End-scrapers and backed blades (after Gatsov, Özdoğan 1994, fig. 4).

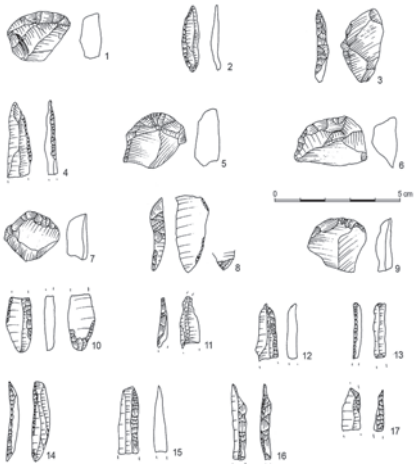


Fig. 15: Ağaçlı. End-scrapers and backed blades (after Gatsov, Özdoğan 1994, fig. 5).



Fig. 16: Üçdutlar. Microlithic stone tools (after Kozłowski 2016, fig. 15).

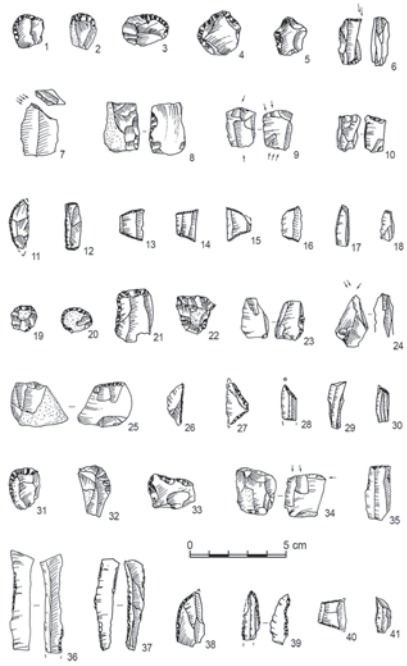


Fig. 17: Padina A1–A2. Mesolithic stone tools (after Radovanović 1996, fig. 5/5).



Fig. 18: Vlasac I–III. Mesolithic stone tools (after Radovanović 1996, fig. 5/12).

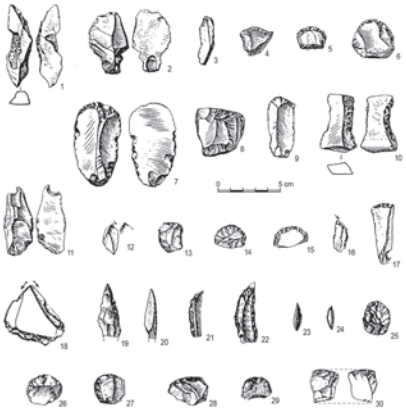


Fig. 19: Early Mesolithic stone tools from Veterani Cave (1–12), Ostrovul Banului (13–17) and Cuina Turcului (18–30) (after Boroneanț 2011, fig. 66).

mountains which predisposed the population there towards fishing and other aquatic resources. The practice of agriculture is next to impossible in this landscape and the preconditions for husbandry can only be fulfilled along those stretches of the banks of the Danube where the narrow valley broadens out somewhat. Not only are the Mesolithic sites at the Danube Gorges the only certain attestation for pre-Neolithic settlement of the Balkan interior, but also these Mesolithic means of subsistence endured into the Neolithic period due to these environmental conditions. On account of this 'survival' of the Mesolithic within this landscape, the chronological links to the Neolithic also went unnoticed for a long time (cf. Radovanović 1996). In addition to typical geometric microliths, these Mesolithic find sites from the settlements at the Danube Gorges, such as Padina A and Vlasac I–III (Borić 2011, 168–175) which are certain to be dated prior to 6200 calBC, display a stone tool inventory of scrapers, retouched chips, drills, gravers, and retouched blades (Figs. 17–18). Similar forms have been published from the Romanian river bank such as from Veterani Cave and, in turn, from Ostrovul Banului, Cuina Turcului, Icoana, Răzvrata, and Schela Cladovei (Figs. 19–20). As will be seen, however, this does not only pertain to forms solely confined to the Mesolithic, but also to comparable types occurring within the well-studied inventory of the Early Neolithic.

A striking element of the Mesolithic in the Danube Gorges is the trapezoidal plans of the dwellings which may possibly be seen as solid realisations of preceding tent or hut constructions (Srejović 1973, 50–108. – Radovanović 1996, 60–159. – Borić 2011, fig. 14).

The site of Vlasac presents a unique funerary ritual. Next to inhumations of supine bodies were partially cremated



Fig. 20: Late Mesolithic stone tools from Ostrovul Banului IIIb (1–3), Icoana (4–10, 25, 27), Rzvrata (11–15) and Schela Cladovei (16–24, 26) (after Boroneanț 2011, fig. 67).

bodies, from which it might be reconstructed that the bodies were first exposed to fire following interment (Borić, French, Dimitrijević 2008). Grave goods were rare, restricted to miniscule decorative elements belonging to the clothing of the deceased, among these most prominently snail shells (*Cyclopea neritea* and *Columbella rustica*) and fish teeth from cypriniforms (*Cyprinidae*) (Cristiani, Borić 2012. – Borić et al. 2014). The burials of a wife and a child (H2 and H297) from the Middle Mesolithic from Vlasac provided the basis for the reconstruction of the clothing of the two buried people (Cristiani, Borić 2012).



Fig. 21: Vlasac. Reconstruction of a garment worn by a woman and a child based on the Late Mesolithic burials H2 and H297 (after Cristiani, Borić 2016, fig. 13).

The fish teeth and snail shells are reconstructed as sewn-on sequins on the clothing of women and children (Fig. 21). This interpretation is supported by ethnographic analogies from today's hunter-gatherers in the Arctic (Cristiani, Živaljević, Borić 2014).

Particularly at Lepenski Vir and Padina, closer observation of the situation of the finds and (not least) recent ^{14}C datings offer an entirely new interpretation of the context and its position within cultural history. Indeed, Dragoslav Srejović had already noticed Starčevo pottery in the putatively still purely Mesolithic Level I of Lepenski Vir, although he interpreted this as disturbance from the overlying Neolithic levels (Srejović 1969, 153–154. – Srejović 1971, 5). Nevertheless, following the discovery of Starčevo pottery in the houses of the settlement at Padina (Jovanović 1987), the thesis of a pre-Neolithic chronological positioning of the installations was rendered ever more questionable. Consequently, Dušan Borić established the Early Neolithic context of the finds of Lepenski Vir I and Padina which are dated to the period between 6200 and 5400 BCE according to calibrated ^{14}C dates (Borić 2002).

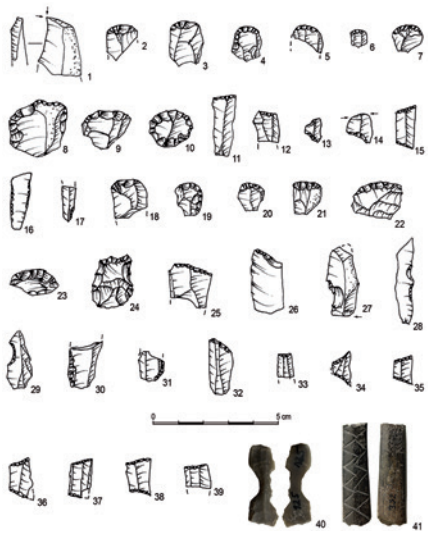


Fig. 22: Odmut. Mesolithic stone tools from Mesolithic layers XD (1–17) and Ib (18–39) (after Cristiani, Borić 2016, fig. 6).

2.3. Montenegro

Significant traces of settlement in the period prior to the arrival of the Neolithic outside of the zone of the Danube Gorges are provided by some sites in Montenegro. The five sites presently known either lie beneath cliff overhangs (i.e. rock shelters: Crvena Stijena, Medena Stijena, and Odmut) or within caves (Vruća Cave and Vrbička Cave). Among these, the cave site of Odmut, some 3 km north of the city of Plužine, is of particular significance. Between 1972 and 1974, five sectors with a total area of 65 m² were excavated at the site under the direction of Čedomir Marković (Cristiani, Borić 2016). The debris, up to 4 m wide in places, evidences a settlement history extending from the Early Mesolithic to the Bronze Age. The site's stratigraphy is instructive on account of a continuous settlement from the mid-7th to mid-6th millennium, spanning the period from the Late Mesolithic to the onset of the Early Neolithic. The lithic spectrum of tools within the Mesolithic cultural levels is dominated by thumbnail scrapers, trapezoids, and notched blades (Fig. 22). The transformation in the economy of the settlement is clearly apparent in the spectra of animal bones (Cristiani, Borić 2016, tab. 2). While only butchering waste from game may be found within the Mesolithic cultural layers, domesticates such as sheep/goat, some cattle, and a few pigs also appear within the Neolithic strata. The most striking finds from Odmut Cave are harpoon barbs fashioned on site overwhelmingly from the ends of red deer antlers (Fig. 23). Interestingly, these finds of harpoons were not restricted solely to the Mesolithic layers, but could also be found in the Neolithic deposits (Borić et al. 2019); therefore, this specialised fishing with harpoons had retained its importance even after the introduction of agriculture. Bone



Fig. 23: Odmut. Barbed points found from different Mesolithic and Early Neolithic layers (after Borić et al. 2019, fig. 4).



Fig. 24: Vruća Cave. Barbed points (after Borić et al. 2019, fig. 7).



Fig. 25: Ohoden. Rounded pit with antlers of three red deer from the Mesolithic layer exhibited in the Museum of Vratsa (Museum Vratsa).

harpoons have also been found in the Vruća Cave (Fig. 24). Thus, it seems to be a general phenomenon of the Mesolithic and Early Neolithic in Montenegro. The great distance of the sites from the sea and, indeed, from any large rivers permits the drawing of two conclusions: the basis for the production of antler harpoons was initially access to sufficient red deer antlers, as a result of which coastal regions did not primarily enter the equation. The antler tips were either collected from shed antlers or came from hunted animals. Regardless, they were 'freshly' worked on site. From Odmut and Vruća, the harpoons could also be traded in distant regions without red deer populations but with a heightened demand for fishing equipment. It remains, nevertheless, possible that the majority of these harpoons found at these two places were employed in catching fish within the small mountain streams of the region surrounding the sites.

2.4. Lower Danube

The site of Ohoden-Valoga, 20 km north-east of Vratsa in northern Bulgaria has been studied since 2002 by the local regional museum under the direction of Georgi Ganetsovski (Ganetsovski 2009). There is evidence of an Early Neolithic settlement with a total area estimated by the excavator to encompass 1.2 ha. Additionally, two inhumations have been detected so far within this settlement space. The find material is ascribed to two different settlement phases (I and II respectively) which belong to a developed stage of the Early Neolithic in the Balkans. This chronological position is confirmed by ^{14}C dates which show that the site was inhabited in the 57th century BCE. In some places, traces of an earlier settlement were also encountered. The clearest find comparable to those of the Mesolithic on structural grounds is a rounded pit with the antlers of three red deer deposited within (Fig. 25). These are not shed antlers but rather antlers of slain deer. It is possible that the crania of the animals were consciously finished in a way that they could be used as attachments for masks, as is known from various other Mesolithic contexts in the North German Lowlands (Bedburg-Königshoven, Hohen Viecheln, Plau, and Berlin-Biesdorf) and from England (Star Carr) (Street, Wild 2015). The ensemble was transported to the Vratsa Museum in an intact block and has not yet been entirely articulated. A total of three radiocarbon dates could be extracted from two of the three deer skulls. The joint calibration of all of the data indicates the 67th century BCE as having been the period in which the animals had lived (see Chapter 10). This find is presently the only clear evidence from the period of the Mesolithic from the region of the Lower Danube. Recurrently notable, however, are individual microlithic artefacts unearthed beneath the Early Neolithic level during excavations. Fascinating in this context is also the observation by the excavator of two humus bands beneath the Early Neolithic settlement layer considered to be floor levels excavated following flooding events.[5] Among

5. Personal communication from Georgi Ganetsovski.

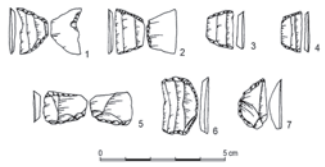


Fig. 26: Ohoden. Microlithic trapezes and triangles (after Gurova 2017, fig. 2).

the currently published stone tools belonging to the Early Neolithic cultural levels, a few geometric microliths, most noticeably trapezoids, are striking (Fig. 26), as has been noted by Maria Gurova. These may be redeposited Mesolithic tools. Nevertheless, geometric microliths may be attested time and again in find contexts from the region even well into the Chalcolithic (Gurova 2017).

2.5. Western Black Sea Coast

For a long time, the stone artefacts gathered as a find collection from the site of Pobiti Kamani in eastern Bulgaria served as the only evidence for any Mesolithic settlement along the western coast of the Black Sea. Also known under the older Turkish name of 'Dikili Tash', the site lies some 18 km west of Varna, its name referring to the 'protruding stones' which form a large group of naturally-shaped limestone pillars emerging from the sandy hollows left and right of the highway from Varna to Sofia. The history of the geological development of the imposing rock pillars is not without some uncertainty, although it is generally agreed that these are formations from the Earth's earlier history well prior to the beginnings of human settlement (Dinev, Mishev 1980). The flint tools were collected from the area of the stone pillars by Ara Margos in the 1950s (Figs. 27–28). The entire find ensemble encompasses at least 11,000 artefacts, among these some 1300 cores, 900 blades, and 9000 flakes (Gatsov 1989, 471), rendering this collection one of the most comprehensive of its type within South-eastern Europe.

Nikolay Dzhambazov and Ara Margos (Dzhambazov, Margos 1960) initially assumed a Palaeolithic or Mesolithic date for the artefacts. They reported a total of nine different sites within the area between the villages of Banovo and Pripek up to the northern shores of the lakes of Beloslav and Varna. These are more precisely the sites of Banovo, Slanchevo I–III, the 'central group' of Pobiti Kamani, Strashimirovo, Beloslav I–II, and Harmankaya respectively.

In 1982, some inventories from the lattermost stage of the Palaeolithic in the North Pontic steppe were published by Vladimir Nikiforovich Stanko (Stanko 1982) which permitted a reconsideration of the chronological placement of the finds from Pobiti Kamani. Ivan Gatsov published a

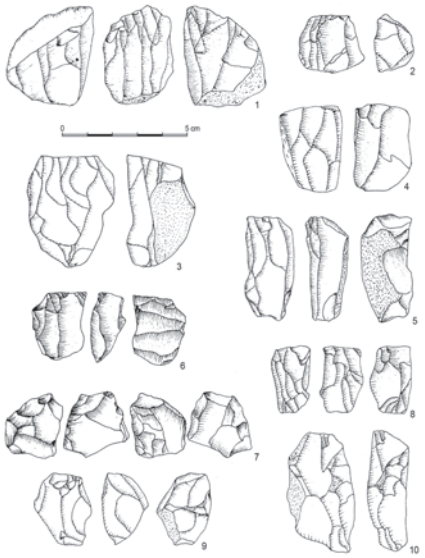


Fig. 27: Area of the Pobiti Kamani. Silex cores (after Gatsov 1989, fig. 1).

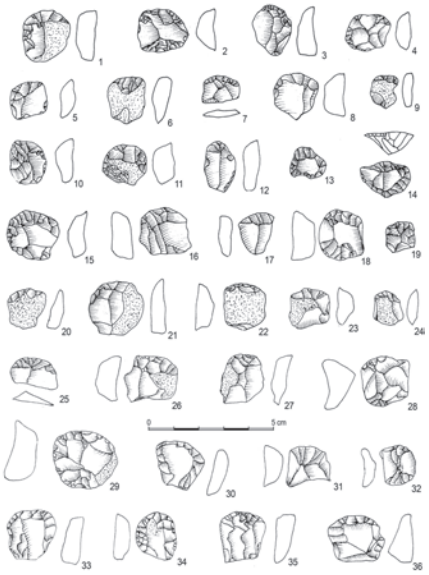


Fig. 28: Area of the Pobiti Kamani. End-scrapers (after Gatsov 1989, fig. 2).

larger selection of the artefacts, and outlined arguments for dating these to the early Holocene. Initially, he studied the different types of cores from the Pobiti Kamani, for which he could present parallels in the finds from Vlasac (Gatsov 1984). Particular attention might additionally be accorded to the diverse microlithic tools, stated to be 428 in number. From these, Gatsov published even more cores and scrapers which he also compared, in turn, with finds from Vlasac and Cuina Turcului (Gatsov 1989, 474). On account of the

general morphology of the artefacts and, most prominently, also the lack of further finds, the chronological placement of the site has not since been brought into question.

Apart from the new finds from Ohoden, the artefacts from Pobiti Kamani would be the only evidence for finds from the period between the Epigravettian and the Neolithic in the Eastern Balkan region, which was well attested on the lower course of the Danube, as found in the caves of Bacho Kiro (Kozłowski 1982, pls. XV–XVI. – Sirakova, Ivanova 1994) and Temnata (Kozłowski, Ginter, Laville 1992). As the artefacts found at Pobiti Kamani appear on their part to adhere to earlier traditions, the somewhat unfortunate designation of Epi-Tardigravettian has been voiced in connection with the site. Not least on account of the linguistic imbalance of this term, the expression Epi-Palaeolithic is today generally employed (Gatsov 1989, 474). This designation borrowed from the Near East not only assumes an uninterrupted tradition in forms from the Palaeolithic into the periods after the Pleistocene but also clearly separates this chronological segment from the following Neolithic. Although this term suggests a marked caesura with the Neolithic, Gatsov remarkably was also able to demonstrate parallels with the stone tools from the Middle to Late Neolithic sites at Usoe and Kachitsa (Gatsov 1989, 474).

Renewed investigation of the site, together with former Berlin students Markus Brückner, Alexander Möser, and Jens Weschenfelder in March 2006 then yielded pottery fragments for the first time (Krauss 2007, figs. 3–4), which are doubtless prehistoric in ascription and, perhaps with some due caution, might be understood as Neolithic. Although the dating of the ceramic fragments cannot be further narrowed down on account of their poor state of preservation, the discovery of prehistoric pottery is in and of itself of some significance, inasmuch as it locates the stone artefacts also collected at this site within a new context.

Should the typological connection between the stone artefacts of the Pobiti Kamani and the sites at the Danube Gorges be considered, as has already been concluded by Gatsov (Gatsov 1984, 149. – Gatsov 1989), then a post-Mesolithic era might also be assumed. Accordingly, the finds from Pobiti Kamani hardly serve as an unequivocal attestation for Mesolithic settlement.

2.6. Southern Carpathian Basin

Sedimentation by loess particularly affects the find situation in the shallow zone in the interior of the Carpathian Basin, although, in this case (even more confoundingly) the rivers meander through the loess horizons, unable to cut deeply enough to impact the limestone bedrock. A good attestation for this is the complete absence of stones in the river sediment (Krauss 2016a). Beyond the narrow zone of the Danube Gorges, the uncovering of finds from the Younger Dryas through the Preboreal all the way to the Boreal accordingly remains primarily a methodological problem.

Insufficient research on the Mesolithic in the southern Carpathian Basin has repeatedly been highlighted (Starnini 2001, 396. – Eichmann, Kertész, Marton 2010, 215–216). In respect to the landscape, there is no good reason to believe that Mesolithic hunter-gatherer groups would have avoided the floodplains, rich in fish and shellfish, of the Danube and Tisza rivers with their biodiverse gallery forests (Bánffy 2004, 21). This landscape offers more than enough attractive resources for communities with a livelihood based upon fishing and hunting. The question resultantly arises as to how the almost complete absence of Mesolithic sites in the southern Carpathian Basin might be explained.

The state of research on the Mesolithic in Banat has been well summarised by Adina Boroneanț (Boroneanț 2011); from this work, it is clear that Mesolithic sites are exclusively situated in the southern Banat, a region which is part of the Danube Gorges region and nowadays administratively belongs solely to the Romanian Banat. The only two sites not located in the gorges themselves are situated just a few kilometres north of the Danube Gorges, namely Hoțu Cave, next to Steierdorf (Anina), and Băile Herculane-Hoților Cave. A few chipped artefacts were reported from Hoțu Cave, including a backed microlithic point. Due to the small number of finds, hardly any correlation beyond that of chronology could be made. Two samples of charcoal from a hearth in the cave yielded a date in the middle of the 7th millennium BCE (Boroneanț 2011, 106–107). The inventory of the Hoților Cave consisted almost exclusively of microliths (96%) made from local lithic raw material (Figs. 29–30). End-scrapers, burins, geometric segments, backed bladelets, and Azilian points are mentioned as characteristic shapes (Boroneanț 2011, 118). One single radiocarbon date from the Mesolithic layer of the cave's stratigraphy points to an equally early date: with a range of 11,559–11,215 calBC, the date still fits into the range of the Epi-Palaeolithic of the Danube Gorges (Borić 2011, 191. – Boroneanț 2011, 118). The Mesolithic sequence is unknown throughout the northern portion of the Banat, either because of the conditions of preservation or as a result of the state of research.

The situation in the western adjacent Bačka is only slightly better. Bogdan Brukner has reported geometric microliths in a Tardenoisian tradition from Hajdukovo (Fig. 31), an ephemeral site close to Subotica. A second site which yielded trapezoid and crescent-shaped microliths is situated on the sandy coast of the Danube at Bačka Palanka,

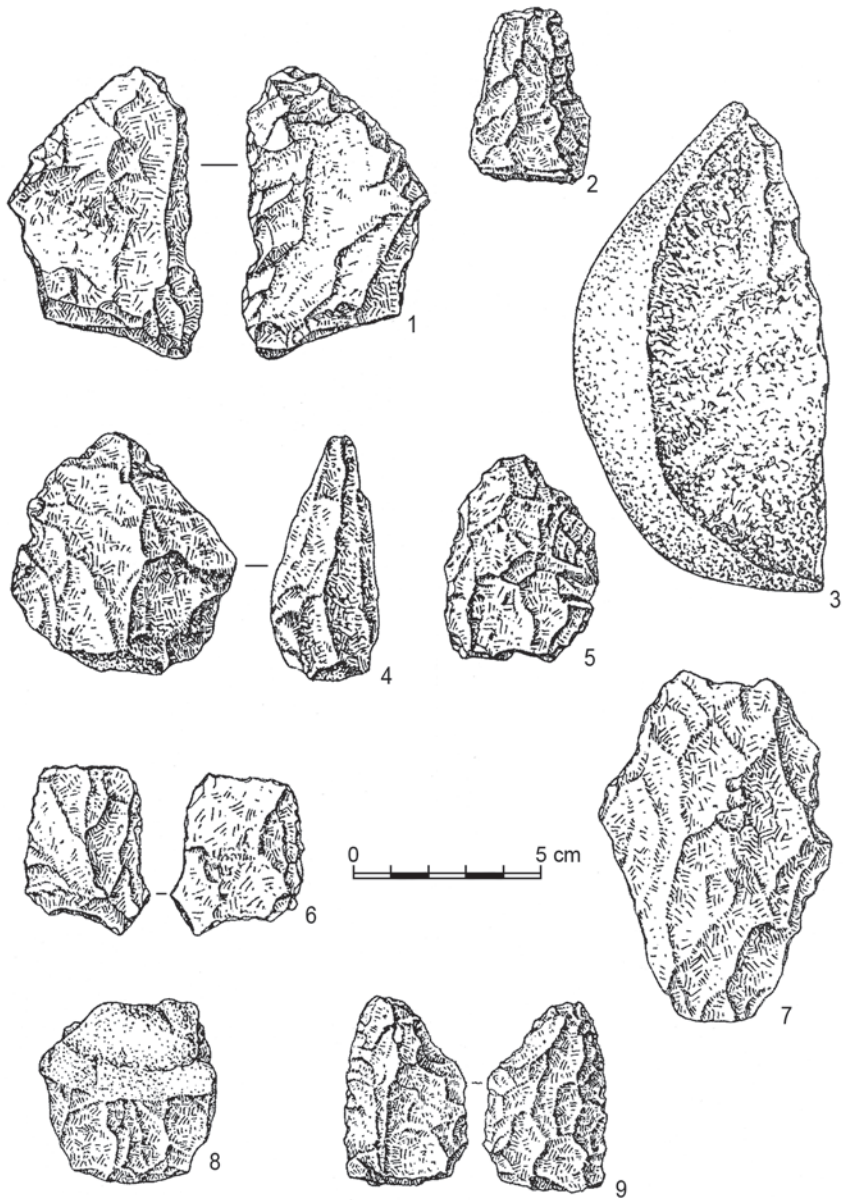


Fig. 29: Băile Herculane-Hoților Cave. Silex artefacts (after Boroneanț 2011, fig. 12).

west of Novi Sad (Brukner 1974, 23). In both cases, these are old finds occurring only very sporadically. The question of the supply of raw materials is of some importance because both sites are located in areas of the Bačka without any significant deposits of flint stones. Thus, considering that the geomorphological base is an important factor for the preservation of Mesolithic sites, this then seems to be the most important reason why no Mesolithic sites have been discovered in the loess plains of Banat and Bačka. The few known sites in the Bačka are located exclusively on the banks of the alluvial plains of the rivers, and the sites in Banat are situated in the hilly parts of the southern Carpathians.

2.7. Western Carpathian Basin

The state of research is much better for the Mesolithic in the Hungarian parts of the Carpathian Basin and the Slovakian territories adjacent to the north (Eichmann, Kertész, Marton 2010). A total of eight Mesolithic find collections is reported from the area of Győr which can no longer be assigned to any specific site (Eichmann, Kertész, Marton 2010, 216). Most of the materials had been collected by Benedictine monks in the late 19th century, and were later assigned to the Magdalenian or Tardenoisian. Nevertheless, on account of their uncertain provenance, these finds were considered to offer only ambiguous evidence for the

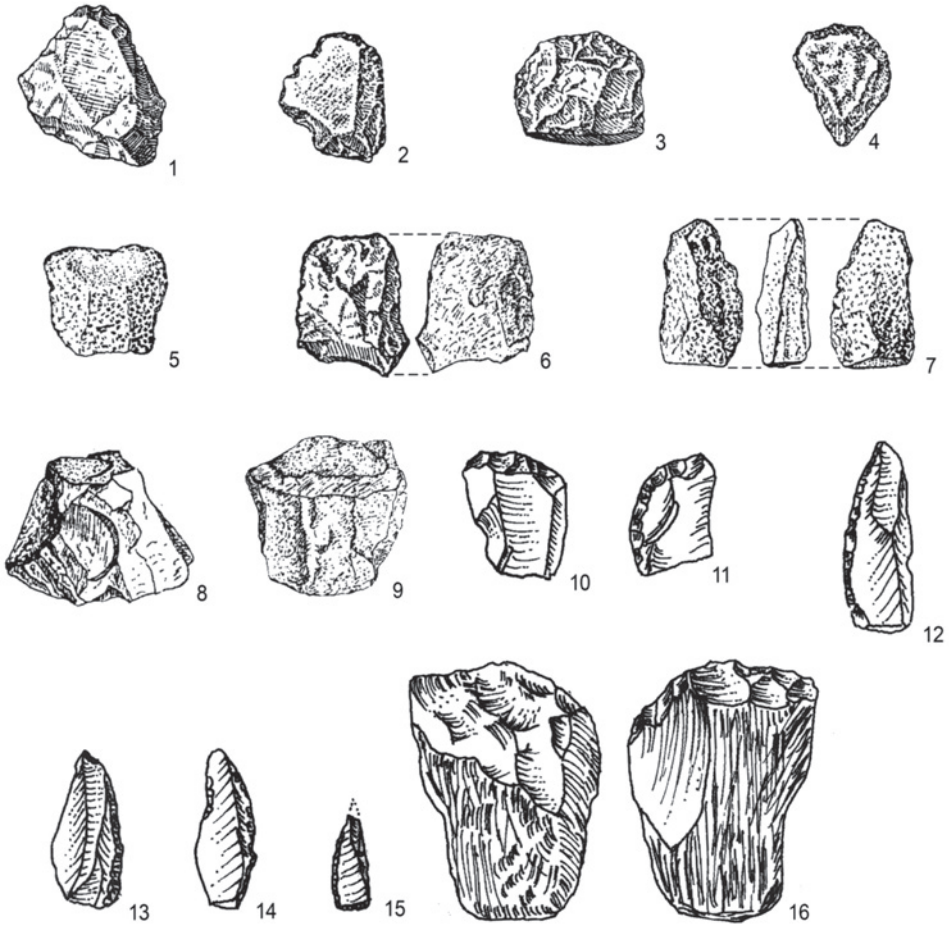


Fig. 30: Băile Herculane-Hoţilor Cave. Silex artefacts (after Boroneanţ 2011, fig. 13; various scales).

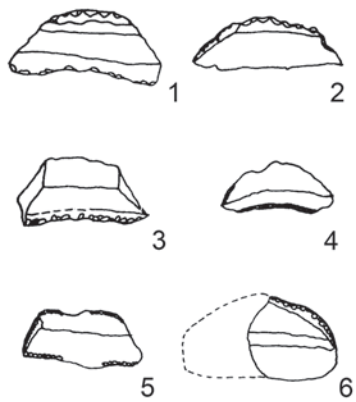


Fig. 31: Hajdukovo. Trapezes and crescents (after Brukner 1974, fig. V/1; without scale).

Mesolithic in the vicinity of Győr (Eichmann, Kertész, Marton 2010, 217).

Possibly Mesolithic are two barbed bone harpoons uncovered in the Sárrét bog, a former Early Holocene lake, during peat-cutting activities in a Csór-Merítőpuszta field and next to the village of Nádasdladány (Eichmann, Kertész, Marton 2010, 217).

A private collection of flint artefacts was reported from a sand dune on the floodplain of the Kapos River at Kaposhomok which could be assigned conceivably to the late Early and Late Mesolithic by means of comparison with assemblages from southern Germany (Eichmann, Kertész, Marton 2010, 217–219). The material consists of regular blades, notched blades, truncated blades, abruptly backed blades, thumbnail scrapers, borers, exhausted cores and geometric microliths such as triangles and trapezes (Eichmann, Kertész, Marton 2010, 217). Interestingly, a large proportion of the raw material already consists of Transdanubian radiolarite, probably from the Szentgál mine, which was extensively exploited later in the Early Neolithic. Most likely, the Mesolithic groups had not only possessed access to this source, but perhaps also controlled the outstanding deposits (Bánffy 2008, 153). There is evidence that Szentgál radiolarite had already been brought further north into

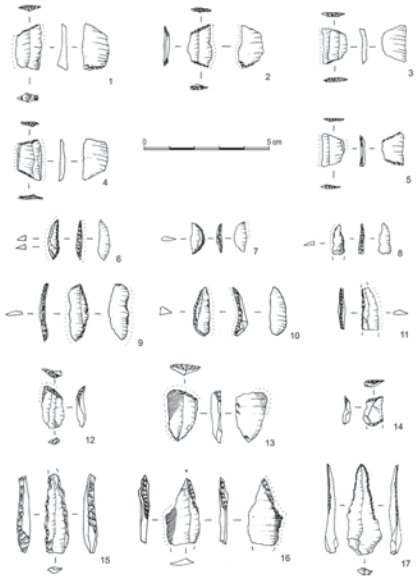


Fig. 32: Regöly 2. Microlithic stone tools (after Eichmann, Kertész, Marton 2010, fig. 3).

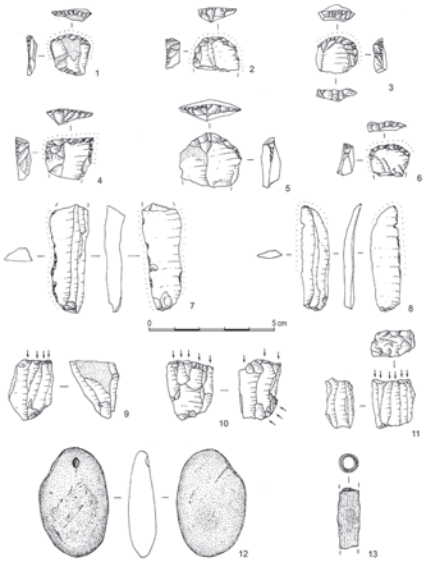


Fig. 33: Regöly 2. Mesolithic stone tools, silex cores, a partially drilled gravel, and a dentalium shell (after Eichmann, Kertész, Marton 2010, fig. 4).



Fig. 34: Dolná Streda. Microlithic stone tools and cores (after Bárta 1972, fig. 9).



Fig. 35: Mostová. Microlithic stone tools (after Bárta 1972, fig. 10).

southern Moravia during the Mesolithic (Mateiciucová 2003, fig. 12).

The site of Regöly 2 in Transdanubia has been systematically investigated in recent years. Although no radiocarbon dates are available, the finds can typologically be assigned to the Late Mesolithic (Eichmann, Kertész, Marton 2010, 223–227). The lithic inventory consists of exhausted single- and multi-platform cores, blades with dorsal scars, regular blades in many sizes, short, narrow blades, scrapers, perforators, and geometric microliths with trapezes and abruptly backed blades (Figs. 32–33). As sources for the radiolarite predominantly used, two deposits, one in the Bakony Mountains and the other in the eastern Mecsek Mountains, could be identified (Eichmann, Kertész, Marton 2010, 226). Hydroquartzite and/or limnoquartzite are rarely present in the raw material, and two pieces are made of obsidian. Very little was reported until now regarding the structure of the settlement. Nevertheless, the ongoing excavations will certainly soon deliver more information about the appearance of the dwellings of a Mesolithic site and how life was organised beyond the production of stone artefacts.

Substantial Mesolithic material comes from the long-term excavations at Sered´ I, Mačianske vŕšky in western Slovakia (Bárta 1972, 57–69). This site is located on a sand dune above the northern bank of the Danube. As a result of the analysis of malakofaunal remains, some charcoal and pollen from the sediments demonstrate that the environment in Mesolithic times had the character of a forest-steppe. Oak, pine, willow, maple, birch, hazel, and rosaceae could

be detected (Bárta 1972, 63). The chipped stone inventory has been described extensively by Juraj Bárta, and was compared with the Late Tardenoisian and the *Spätmesolithikum* in southern Germany (Bárta 1972, 63). Unfortunately, due to later processes of soil formation, settlement structures could not be detected at Sered´ I. Nevertheless, a great deal is known about the economy of the settlement. Based on the animal bones discovered, the hunting of red deer, roe deer, wild boar, bison, aurochs, donkey, horse, and hare could be identified. Moreover, the snail *Helix pomatia* played a role in the diet (Bárta 1972, 64).

The finds from Sered´ I provided the opportunity for further investigations of the dunes in the vicinity of Bratislava by Slovakian colleagues. Subsequently, the sites of Dolná Streda, Veľká Mača, Šoporňa-Štrkovec, Sládečkovce, Mostová, Čierna Voda, and Tomášikovo were catalogued. From these, an acceptable assortment of cores, regular blades, scrapers, small points with side retouching, and a few microlithic trapezes from Dolná Streda (Fig. 34) and Mostová (Fig. 35) were presented.

The transition to the Neolithic in Transdanubia is of particular interest because this part of the Carpathian Basin is regarded as the cradle of the Earliest LBK. However, it seems as if the Neolithic in Transdanubia could have evolved on a new basis, or at least not on the foundations of the Mesolithic tradition, since most researchers prefer to stress the breaks in the cultural development (Starnini 2001, 401–402. – Bánffy 2004, 21–25). Yet, here again, the poor state of research on the Mesolithic settlements in comparison to those of the Neolithic must be taken into account.

2.8. Eastern Carpathian Basin

The Great Hungarian Plain or Alföld forms a natural unit with the inner-Carpathian areas of neighbouring countries, such as eastern Slovakia, Carpatho-Ukraine, and north-western Romania. As a result of the excavation of Miklós Gábori at the site of Sződliged next to Vác and the intense survey of Róbert Kertész in the Jászság area, the Mesolithic in the Alföld can be regarded as comparably well researched as well. At Sződliged, close to the Danube Bend, two sites only 200 m away from each other were reported, excavated by Gábori in the years 1954 and 1967. A re-investigation of the finds by William Eichmann, Róbert Kertész, and Tibor Marton concluded that parts of the site date to the late Early or Late Mesolithic (Eichmann, Kertész, Marton 2010, 219–221). The raw material is dominated by low quality hydroquartzites and limnoquartzites from local river cobbles. The inventory consists of lithic debris, many wedges (*pièces esquillées* or bipolar cores), regular blades, many utilised flakes, abruptly backed pieces, segments, a possible microburin, and trapezes (Fig. 36). Some of the structures were interpreted as hearth platforms comparable to the oval hearths at the Late Mesolithic sites in the region of the Danube Gorges, in particular from Vlasac II and III (Eichmann, Kertész, Marton 2010, 221). A small rectangular structure with rounded corners, measuring 2.4 m by 2.2 m, outlined by means of stones was interpreted as a dwelling (Kertész 1996, 22). Accordingly, there must have been a permanently inhabited settlement at Sződliged, at least briefly. The researchers also highlight other structural similarities between Sződliged and the sites in the region of the Danube Gorges such as the position of the site in the valley of the Danube, and specific aspects of the lithic technology such as blade production by pressure technique and the predominance of bipolar cores (Eichmann, Kertész, Marton 2010, 221).

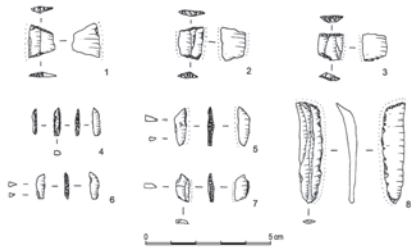


Fig. 36: Sződliged. Microlithic stone tools and a blade with traces of use (after Eichmann, Kertész, Marton 2010, fig. 2).

The Jászság Basin, a vast floodplain between the upper Tisza River and the bend of the Danube in the northern Alföld, was extensively surveyed by Kertész and his colleagues (Kertész 1996). Upper Palaeolithic and Epi-Palaeolithic sites could be recorded on a Pleistocene alluvial fan on a Würmian formation which slightly rises above its surroundings. Two Mesolithic sites, Jászberény I and Jásztelek I, were found in the lower zone of the Holocene alluvial plain (Kertész 1996, 13). Both sites consist of 10–15-cm-thick cultural layers in a scatter from 12 to 17 m in diameter. One feature, dug into the ground at a depth of up to 50 cm at Jásztelek I, was interpreted as a tent or hut-like dwelling (Figs. 37–38). The round structure has a diameter of 5 m and displays postholes along the edge and a hearth platform in the very centre. A comparable dwelling structure attributed to the Late Palaeolithic Świdry culture was uncovered in Mucharz, in the district of Wadowice, southern Poland (Valde-Nowak 2010, fig. 5). The reconstruction in Mucharz is slightly different as this structure is reconstructed with a central post in the middle instead of a fireplace.

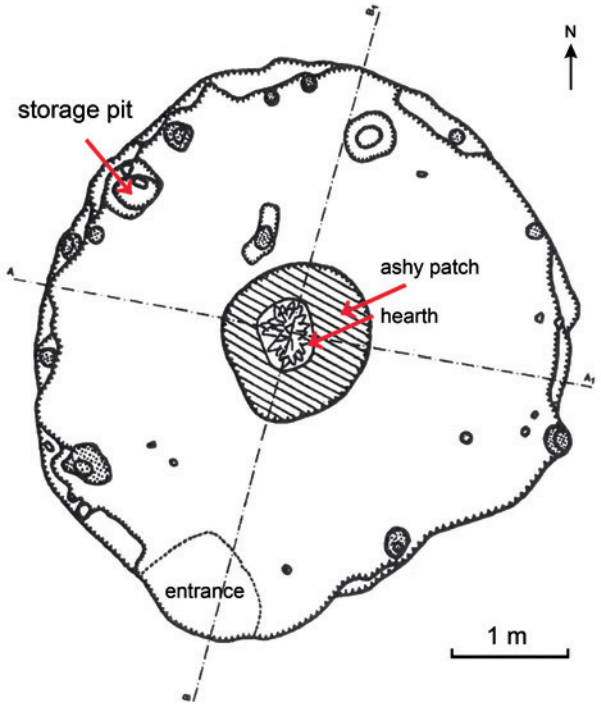


Fig. 37: Jásztelek I. Feature of a Mesolithic dwelling (after Kertész 1996, fig. 12).

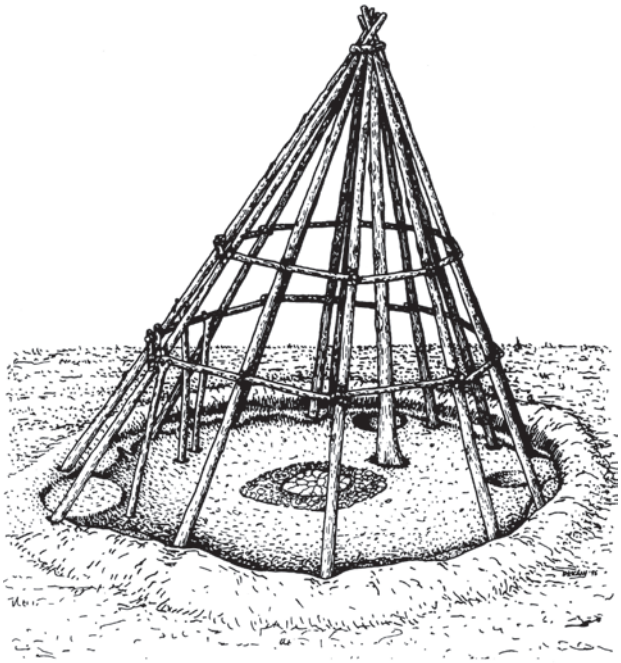


Fig. 38: Jásztelek I. Reconstruction of a Mesolithic hut according to the feature in Fig. 37 (after Kertész 1996, fig. 13).



Fig. 39: Jásztelek I. Mesolithic stone scrapers and a point (after Kertész 1996, pl. 4).



Fig. 40: Jásztelek I. Microlithic triangles, lunets and backed fragments (after Kertész 1996, pls. 5–6).

The raw material of the lithic inventory of the Jászság sites is dominated by hydroquartzites and limnoquartzites from the nearby Mátra Mountains, while siliceous rocks such as obsidian from more distant areas played a subordinate role (Kertész 1996, 19). Kertész has emphasised the unique typological character of the Mesolithic industry from these sites, which comes mainly from Jásztelek I (Figs. 39–41) and Jászberény IV (Fig. 42). The inventory consists mainly of microlithic points, triangles, trapezes, and thumbnail scrapers. The maintenance conditions generally seem to be quite good because some bone implements have also been preserved.



Fig. 41: Jásztelek I. Microlithic blades, blade fragments, microburins and bone implements (after Kertész 1996, pls. 6–8).



Fig. 42: Jászberény IV. Microlithic stone tools (after Kertész 1996, pls. 4–8).



Fig. 43: Ciumești. Microlithic stone tools (after Păunescu 1964, fig. 4).

The bones from the slaughter remains demonstrate a predominance of aurochs and wild horse among the hunted animals with red deer, roe deer, and wild pig, and rarely pond tortoise and birds also present (Kertész 1996, 23). A pollen sample taken from the Meggyes-erdő allows the reconstruction of the landscape around the Mesolithic campsite. Extensive gallery forests along the river channels were dominated by oak, elm, willow, lime, and hazel bushes. The higher-lying areas display characteristic steppe and forest-steppe vegetation (Kertész 1996, 15).

Besides these two major sites, five more Mesolithic findspots from the Alföld have been mentioned in the literature: Kundacs-Köztemető and Kunpeszér-Felsőpeszéri út-Homokbánya on the sandy dunes of the left-hand floodplain of the Danube; Hugyaj/Érpatak, also in a sandy area in the northern Tisza region; Pásztó-Mária tanya on the southern fringes of the northern Carpathian belt; and Tószeg-Áldozó-halom on the middle reaches of the Tisza, close to Szolnok (Kertész 1996, 16–18).

To this should be added Ciumești II in Sathmar county in north-western Romania. The site is also situated on a dune and yielded a small collection (Fig. 43) consisting of a core, one burin, a few regular blades and scrapers, and also several microlithic trapezes and triangles (Păunescu 1964). Quartzite and unspecified types of silex, as well as obsidian, were used as raw materials.

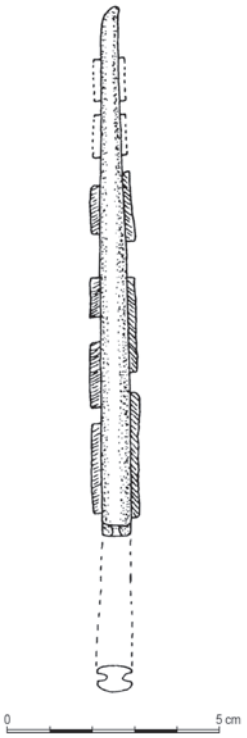


Fig. 44: Medvedia Cave. Mesolithic bone point with inserted microlithic stone blades (after Bárta 1989, fig. 5).



Fig. 45: Barca I. Microlithic stone tools (after Bárta 1972, fig. 10).

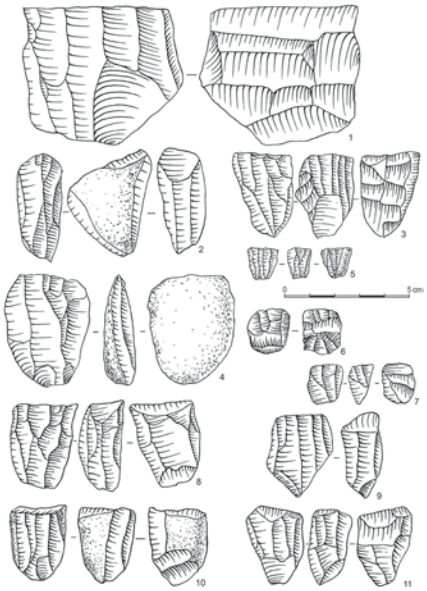


Fig. 46: Kam´janyzia I. Mesolithic blade cores (after Matskevyj 2001, fig. 6).

A special find was made in 1980 at Medvedia Cave near Ružin in eastern Slovakia. An obsidian flake and a long bone point with two opposed grooves were found among the bones of two brown bears (*Ursus arctos*) (Bárta 1989, 458). In the grooves, seven small inserted blades of limnoquartzite were still preserved (Fig. 44). The find context indicates that the composite weapon was used to kill at least one of the bears.

In terms of raw material, the site of Barca I in the Slovakian portion of the upper Tisza Valley is remarkable because of its exclusive use of obsidian. Particularly noteworthy among the material are backed blades and microlithic triangles (Fig. 45).

From the Carpatho-Ukraine, Leonid Matskevyj has mentioned several Mesolithic sites (Matskevyj 2001).



Fig. 47: Kam´janyzia I. Mesolithic stone tools (after Matskevyj 2001, fig. 7).



Fig. 48: Kam´janyzia I. Mesolithic blade cores (after Matskevyj 2001, fig. 8).

Of the numerous stone artefacts presented, the collection from Kam´janyzia I only seems to demonstrate characteristic elements of the Late Mesolithic (Figs. 46–48). The inventory consists of exhausted single- and multi-platform cores, side- and end-scrapers, regular blades, burins, points with retouched edges, and a few microliths, predominantly trapezes. The site is situated in the foothills of the Carpathians, in the valley of the Uzh River.

2.9. The South-eastern European Mesolithic in Relation to its Neighbouring Areas

The so-called *Spätmesolithikum* in southern Germany, a facies of the Mesolithic, which extends into the north-westerly neighbouring areas of the Carpathian Basin such as Bohemia, Moravia, and Lower Austria is comparatively well investigated. Its beginnings remain controversial, but may be placed in the period of the incipient Atlantic period, between 7000 and 6500 calBC. Characteristic finds are particularly trapezes and regular blades with faceted platform remnants (Gronenborn 1997, 129). The continuation of Mesolithic stone chipping techniques into the 6th millennium BCE was considered by some researchers as an indication of an autochthonous development of the Earliest LBK in Central Europe (Tillmann 1993. – Kind 1998). However, this hypothesis was later contested (e.g. Gronenborn 1994. – Zimmermann 2010).

To the south-west of the Balkans, the Castelnovian variant of the Mesolithic was initially described as a south-eastern variant of the French Tardenoisian (de Fonton 1967). The Mesolithic inventories are characterised by trapezes, notched blades, subconical cores, and microburins. A series of radiocarbon dates indicates a beginning also parallel with the Atlantic period (Biagi 2001, 71), and recently the chronological framework for the Castelnovian was presented as being 6600–5600 calBC (Perrin, Binder 2014, 274). Its distribution extends from northern Italy eastwards at least as far as the Slovenian Karst (Perrin, Binder 2014, fig. 1). In terms of the transmission of stone chipping techniques from the Castelnovian into the subsequent Neolithic, the breaks have been emphasised over the continuities (Biagi 2001, 77–81), even if, at least in Italy, the lithic assemblages of the Early Neolithic Impressed Ware show only a few differences to those assigned to the Castelnovian (Perrin, Binder 2014, 277).

The Mesolithic period is still poorly investigated to the east of the Carpathians. Matskevyj has defined several cultures for the Ukrainian territory (Matskevyj 2001), but they remain doubtful, in view of their stratigraphic uncertainty and the heterogeneous character of the material (Dolukhanov 2008, 290). Stefan Kozłowski classifies the Late Mesolithic material from Transcarpathian Ukraine as belonging to the Janisławice culture (Kozłowski S. 2001, 267). For the adjacent North Pontic steppe zone, two cultural areas could be distinguished. In the southern area, there is the Grebeniki variant which is surrounded by the Kukrek culture. Both expressions of the Mesolithic in the steppe demonstrate significant territorial overlaps. The chronological framework of the Mesolithic features east of the Carpathians is not very well defined (Dolukhanov 2008, 289–290), but the appearance of the Bug-Dniester culture as the oldest manifestation of Neolithic in the region renders at the very least a terminus ante quem of around 6000 calBC. North of the Carpathian Basin, the Janisławice culture must be mentioned. Its chronological frame is given roughly from the 7th to the 4th millennium BCE (Kozłowski, Kozłowski 1979, 105). The stone industry is characterised by a high number of side- and end-scrapers, microliths and rarely burins, truncations and the typical Janisławice points (Kozłowski S. 1975, 74–75). A rich deposit of silex with a characteristic chocolate colour in the upper Vistula Basin seems to have been of major importance as a source of raw material for the Janisławice culture (Bednarz 2001).

An analysis of accelerator mass spectrometry (AMS) data from the Shan-Koba rock shelter excavated in Soviet times shows that the Late Palaeolithic/Mesolithic sequence on the Crimean Peninsula is not 'continuous' as suggested in the older literature. The gap observed in the Mesolithic chronology was recently able to be filled with radiometric results obtained from other sites in the North Pontic area such as Laspi 7 and Mirnoe (Biagi 2016). With regard to the question of the continuity of Mesolithic technologies into the Neolithic, Dima Kiosak sees a clear separation between the Neolithic groups of South-eastern (Criș) and Central European (LBK) origin on the one hand and the riverine communities of the Bug-Dniester culture on the other. The first two came from outside to the territory of western Ukraine, while the Bug-Dniester culture is clearly rooted in the Recent Mesolithic of the region, namely the Grebeniki and Kukrek variant of lithic industries (Kiosak 2016).

In summary, the Mesolithic in the Balkans (although comparatively poorly studied) is a time with great innovation potential due to the high mobility of the population. Compared to the Neolithic, however, the population density is probably very low.[6] Due to the low level of research, it is still largely unclear how long Mesolithic communities in South-eastern Europe could survive parallel to the Neolithic ones. In the following chapters, we will see how the networks that existed from the Mesolithic period were at least selectively used for the expansion of the Neolithic.

6. A model calculation made for the Mesolithic in southern Germany assumes an average population density of 0.0023 people per square kilometre (Richter 2007). For comparison, there are 0.026 inhabitants per square kilometre in Greenland today. The population density in Central Europe in the 7th millennium BCE was probably ten times lower than in the circum-Arctic areas today.

3. Neolithisation Processes in the Northern Aegean

The study of the neolithisation of South-eastern Europe would have proven impossible without an appreciation of the developments within the northern Aegean and, above all, western Anatolia. After 6100 calBC, a complete Neolithic package consisting of the most important grain cultures and pulses, domesticated animals, an advanced settlement form, and an already well-developed grindstone and ceramic technology was spread into the southern Carpathian Basin by way of the Balkans. Many theoretical posits as to the autochthonous development of this complex package on the basis of the local Mesolithic (cf. Srejović 1973, 176–180) have been disproven by more recent research. The region of the northern Fertile Crescent is the only region in which not only the most important grain cultivars such as einkorn, emmer, and barley occur in their wild forms, but also the ancestors of domestic sheep and goats (Watkins 2007). Even the theoretical possibility that cattle and pig (at the very least) might have been locally domesticated from wild European variants seems unlikely at best in the wake of the results of recent palaeogenetic studies (Scheu 2012. – Geörg 2013). The development of the earliest pottery of the South-eastern European Neolithic is also only comprehensible in light of the history of the earliest ceramic development in western Anatolia and the northern Aegean. For this reason, I will first briefly describe the development in the northern Aegean region, which is of direct importance for the neolithisation of South-eastern Europe. I am limiting the overview to the south of our study area to central western Anatolia and Thessaly because important stimuli for the introduction of pottery to South-eastern Europe emanate therefrom. Northern Greece, the Marmara, and the Porsuk-Sakarya region are also briefly considered because they are located adjacent to the Balkans (Fig. 49).

The period of the neolithisation of the regions north of the Aegean and the Marmara Sea falls within the transition of the Late Neolithic to the Early Chalcolithic in the terminology employed for Anatolia. While few metallic finds are preserved from the 6th millennium within western Anatolia, the criterion of 'vessel painting' was originally decisive for the distinction of the Chalcolithic from the preceding Neolithic in the south-western Anatolian Lakes region (Pisidia). Painted ceramics are characteristic of the Chalcolithic, while overwhelmingly monochrome-slipped vessels are extant from the Neolithic (Schoop 2005, 14–17). Ultimately, this division rests solely upon the ceramic trajectory at Hacılar (cf. Mellaart 1970). Both there and at most other known sites in western Anatolia, a continuous development in ceramics without any remarkable interruptions may be observed. This terminology is thus the mere product of the history of prior research.

3.1. The Region of Izmir

Research in recent years has uncovered an entirely new landscape of finds within the region of central western Anatolia, from which the impetus for the dissemination of the Neolithic into the Balkan region clearly began. A characteristic of the landscape there is its openness to the west by means of the great rivers discharging into the Aegean from the Anatolian plateau. It is therefore hardly unsurprising that current suggestions indicate a neolithisation of western Anatolia occurring not along routes from inland (cf. Özdoğan 2011, 25–30) but rather via seaways. Indeed, Çiler Çilingiroğlu has highlighted the distribution of impresso pottery as evidence for maritime routes stretching from the Levant up to the Aegean (Çilingiroğlu 2010). The work

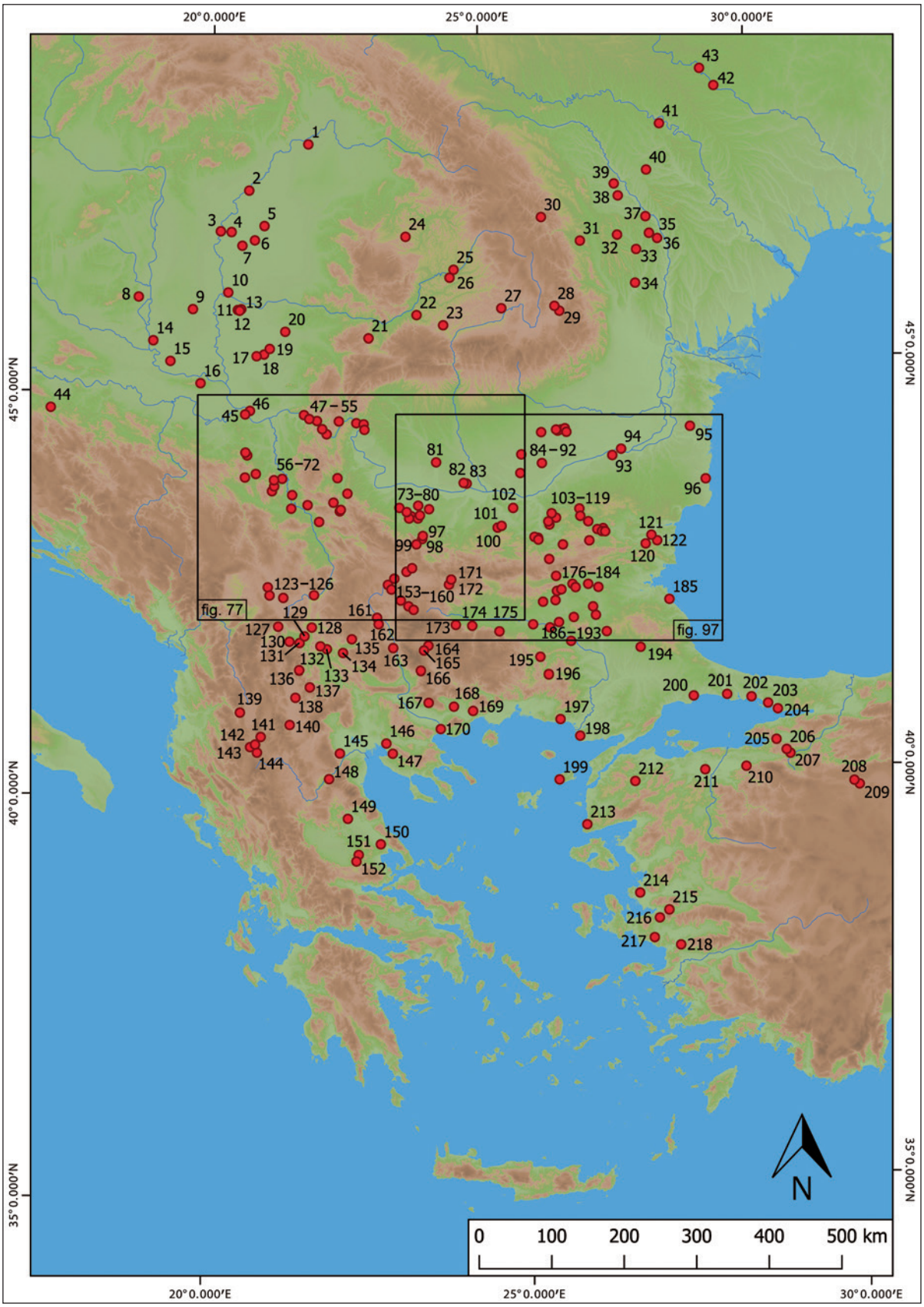


Fig. 49: Map of Neolithic sites in South-eastern Europe and sites of the Turkish Neolithic and Chalcolithic mentioned in the text. See detailed description next page.

Fig. 49: Map of Neolithic sites in South-eastern Europe and sites of the Turkish Neolithic and Chalcolithic mentioned in the text. – 1. Ibrány-Nagyerdő. – 2. Tiszaszőlős-Domaháza. – 3. Nagykörű. – 4. Szolnok-Szanda. – 5. Ecsegfalva 23. – 6. Endrőd. – 7. Szarvas-Egyházföld. – 8. Alsónyék-Bátaszék. – 9. Nosa-Biserna Obala. – 10. Maroslele-Pana. – 11. Movila lui Deciov. – 12. Kalcsov I. – 13. Bucova Pusta IV. – 14. Magareći Mlin. – 15. Donja Branjevina. – 16. Golokut. – 17. Foeni Gaz and Foeni Sălaș. – 18. Giulvăz. – 19. Parța. – 20. Timișoara-Fratelia. – 21. Cauce Cave. – 22. Șeușa-La Cărarea Morii. – 23. Ocna Sibiului. – 24. Gura Baciului. – 25. Moreşti. – 26. Cipău. – 27. Rupea. – 28. Turia-La Silozuri. – 29. Leț. – 30. Dîrțu-Ceahlău. – 31. Traian. – 32. Suceava-Parcul Cetății and Suceava-Câmpul Șanțurilor. – 33. Probota. – 34. Perieni. – 35. Balș. – 36. Trestiana. – 37. Valea Lupului. – 38. Larga Jijia. – 39. Glăvănești Vechi. – 40. Sacarovca. – 41. Soroki I, II and III. – 42. Baz'kov Ostrov. – 43. Sokol'cy I and VI. – 44. Ludaš-Budžak. – 45. Vinča. – 46. Starčevo. – 47. Pojejena-Nucet. – 48. Moldova Veche-Rât. – 49. Gornea. – 50. Padina. – 51. Lepenski Vir. – 52. Cuina Turcului. – 53. Ostrovul Golu. – 54. Schela Cladovei. – 55. Ajmana-Mala Vrbica. – 56. Svinjarička Čuka. – 57. Banya Aranđelovac. – 58. Grivac. – 59. Divostin. – 60. Belica. – 61. Svetozarevo (Jagodina)-Bunar. – 62. Tečić. – 63. Blagotin. – 64. Drenovac. – 65. Ornice-Makrešani. – 66. Crnokalačka Bara. – 67. Bubanj. – 68. Dubrava. – 69. Kučajna. – 70. Jelašnica. – 71. Knjaževac. – 72. Kadijski Krst. – 73. Gradeshnitsa-Malo Pole and Gradeshnitsa-Lukanovo Darvo. – 74. Devene. – 75. Ohoden. – 76. Banitsa. – 77. Tlachene. – 78. Komarevo. – 79. Altimir. – 80. Byala Slatina. – 81. Cîrcea-La Hanuri and Cîrcea-Viaduct. – 82. Vădastra. – 83. Grădinile-La Islaz. – 84. Măgura Buduiasca. – 85. Dulceana. – 86. Drăghiceanu. – 87. Bolintineanu. – 88. Giulești. – 89. Dudești. – 90. Malu Roșu. – 91. Fundeni. – 92. Cernica. – 93. Malak Preslavets. – 94. Boian. – 95. Medgidia-Cocoașă. – 96. Durankulak-Nivata. – 97. Zakonitsa. – 98. Beshovitsa. – 99. Rebarkovo. – 100. Devetaki Cave. – 101. Krushuna. – 102. Balgarsko Slivovo. – 103. Hotnitsa Cave, Hotnitsa Waterfall and Hotnitsa Bear's Hole. – 104. Samovodene. – 105. Small and large caves at Preobrazhenski Monastery. – 106. Golyamata Lisitsa, Plochite and small and big cave at Veliko Tarnovo. – 107. Dzhulyunitsa. – 108. Strelets-Eren Bunar. – 109. Orlovets. – 110. Chakmaktepe. – 111. Koprivets. – 112. Pomoshtitsa. – 113. Drinovo. – 114. Podgoritsa. – 115. Polyanitsa-Platoto. – 116. Ovcharovo-Platoto. – 117. Ovcharovo-Gorata. – 118. Ovcharovo-Zemnika. – 119. Zelena Morava. – 120. Usoe. – 121. Dalgopol-Balkuzu. – 122. Golyamo Delchevo. – 123. Karagač-Žitkovac. – 124. Rudnik. – 125. Gladnice. – 126. Pavlovac-Gumnište and Pavlovac-Čukar. – 127. Tumba Stenče. – 128. Na Breg. – 129. Tumba Mađari. – 130. Govrlevo. – 131. Zelenikovo. – 132. Rug Bair. – 133. Anzabegovo. – 134. Vršnik. – 135. Grnčarica. – 136. Kutline. – 137. Radin Dol. – 138. Čuka. – 139. Rayc. – 140. Veluška Tumba and Porodin. – 141. Podgorie. – 142. Dunavec. – 143. Vashtëmi. – 144. Barç. – 145. Nea Nikomedeia. – 146. Thessaloniki. – 147. Thermi. – 148. Servia. – 149. Achilleion. – 150. Sesklo. – 151. Otzaki. – 152. Argissa. – 153. Kremikovtsi. – 154. Slatina. – 155. Pernik. – 156. Priboy. – 157. Negovantsi. – 158. Galabnik. – 159. Kraynitsi. – 160. Sapareva Banya. – 161. Nevestino. – 162. Vaksevo. – 163. Balgarchevo. – 164. Eleshnitsa. – 165. Dobrinishte. – 166. Kovachevo. – 167. Toumba Serron. – 168. Sitagroi. – 169. Dikili Tash. – 170. Kryoneri. – 171. Chelopech. – 172. Chavdar. – 173. Rakitovo. – 174. Kapitan Dimitrievo. – 175. Muldava. – 176. Kaloyanovets. – 177. Sarnevo. – 178. Azmak. – 179. Stara Zagora-County Hospital. – 180. Kazanlak. – 181. Karanovo. – 182. Ezero. – 183. Glufishevo. – 184. Veselinovo-Maleva Mogila. – 185. Primorsko. – 186. Yabalkovo. – 187. Nova Nadezhda. – 188. Simeonovgrad-Chavdarova Cheshma. – 189. Lyubimets. – 190. Mednikarovo. – 191. Drama-Gerena, Drama-Kayryaka and Drama-Merdzhumekya. – 192. Knyazhevo-Rovnishte. – 193. Lesovo-Spring and Lesovo-Dyadopaneva Vodenitsa. – 194. Aşağı Pınar. – 195. Kardzhali. – 196. Krumovgrad. – 197. Makri. – 198. Hoca Çeşme. – 199. Uğurlu. – 200. Toptepe. – 201. Yarımburgaz. – 202. Istanbul- Yenikapı. – 203. Fikirtepe. – 204. Pendik. – 205. Ilıpınar. – 206. Menteşe. – 207. Barcın Höyük. – 208. Demircihüyük. – 209. Orman Fidanlığı. – 210. Aktopraklık. – 211. Musluçeşme. – 212. Çalca. – 213. Coşkuntepe. – 214. Ege Gübre. – 215. Ulucak. – 216. Yeşilova. – 217. Dedecik-Heybelitepe. – 218. Çukuriçi Höyük (for detailed maps see Figs. 77, 97) (R. Krauß, B. Dutilleux).

group around Barbara Horejs was able to illustrate how the exchange of obsidian connected western Anatolia with the world of the Cycladic islands (Bergner, Horejs, Pernicka 2009. – Milić, Horejs 2017). To this might be added evidence of fishing on the high seas as demonstrated by the skeletal material of various types of fish at Çukuriçi Höyük (Galik, Horejs 2011, 90). Various tapering projectile points fashioned from silex blades are reminiscent of the characteristic Byblos points of the northern Fertile Crescent, and may well serve as an additional indication of direct contact between the northern Levant and western Anatolia.[7]

Certainly, a maritime-led neolithisation of western Anatolia hardly excludes contact between those Neolithic sites known from the Konya Plain and from Pisidia. Rather, it is very plausible that this contact occurred by means of the maritime route and not directly over the Anatolian plateau. Admittedly, any evidence of Neolithic coastal settlements along the southern Anatolian coastline is currently lacking (see, however, Duru 2012, fn. 25), although this may well be due to the underdeveloped state of research in the region. Maxime Brami and Volker Heyd suppose two different routes of neolithisation within Anatolia: on the one hand, a landlocked extension of the Neolithic into the Marmara Region to the north-west and, on the other hand, a maritime-based neolithisation spreading westwards into the Aegean and into central western Anatolia. The former axis of dissemination is indicated by the black polished ceramic ware, the latter by the red-slipped pottery (Brami,

7. I was able to view such projectile tips from Çukuriçi Höyük in October 2013 in the Austrian excavation house at Ephesus; I thank Barbara Horejs for this opportunity.



Fig. 50: Ulucak VI. House floors (after Çilingiroğlu, Çevik, Çilingiroğlu 2012, fig. 37).

Heyd 2011, 178–184). The appearance of impresso pottery would thus describe a third wave of neolithisation also reaching the Aegean and western Anatolia by means of the seaways (Brami, Heyd 2011, 184–186).

The Neolithic-Chalcolithic cultural sequence of the Izmir region is primarily to be observed at the mound of Ulucak some 20 km east of the harbour city which evidences a long sequence of settlement from the earliest Neolithic all the way into the Early Bronze Age.[8] The excavations conducted since 1995 were able to unearth an unbroken sequence of levels spanning from the Early Neolithic until the Early Chalcolithic which were grouped into Settlement Horizons VI to IV on the strength of the construction types of the houses (Çilingiroğlu et al. 2004. – Çilingiroğlu, Abay 2005. – Çilingiroğlu, Çilingiroğlu 2007. – Çilingiroğlu, Çevik, Çilingiroğlu 2012). Following a considerable interruption in settlement, the mound was occupied once more in the Middle Chalcolithic (Ulucak III) and, following further hiatuses, in the Early Bronze Age (II) and in the Roman-Byzantine era (I).

The earliest horizon, Ulucak VI, has been excavated since 2008 and could only be exposed within a small area of some 90 m² (Çilingiroğlu, Çevik, Çilingiroğlu 2012, 148). A peculiarity of these early settlement phases is one house floor which is composed of a thick layer of cast lime mortar painted red on the surface (Çilingiroğlu 2011, fig. 1) (Fig. 50). The notion presents itself that this particular manner of floor construction might be connected with the so-called 'terrazzo' floors of particularly prominent buildings within settlements of the Pre-Pottery Neolithic B

8. I am very grateful to Çiler Çilingiroğlu, who successfully submitted a dissertation on the mound of Ulucak at the Eberhard Karls University of Tübingen, for her insights in approaching the topic of Neolithic-Chalcolithic cultural development within the Izmir region.

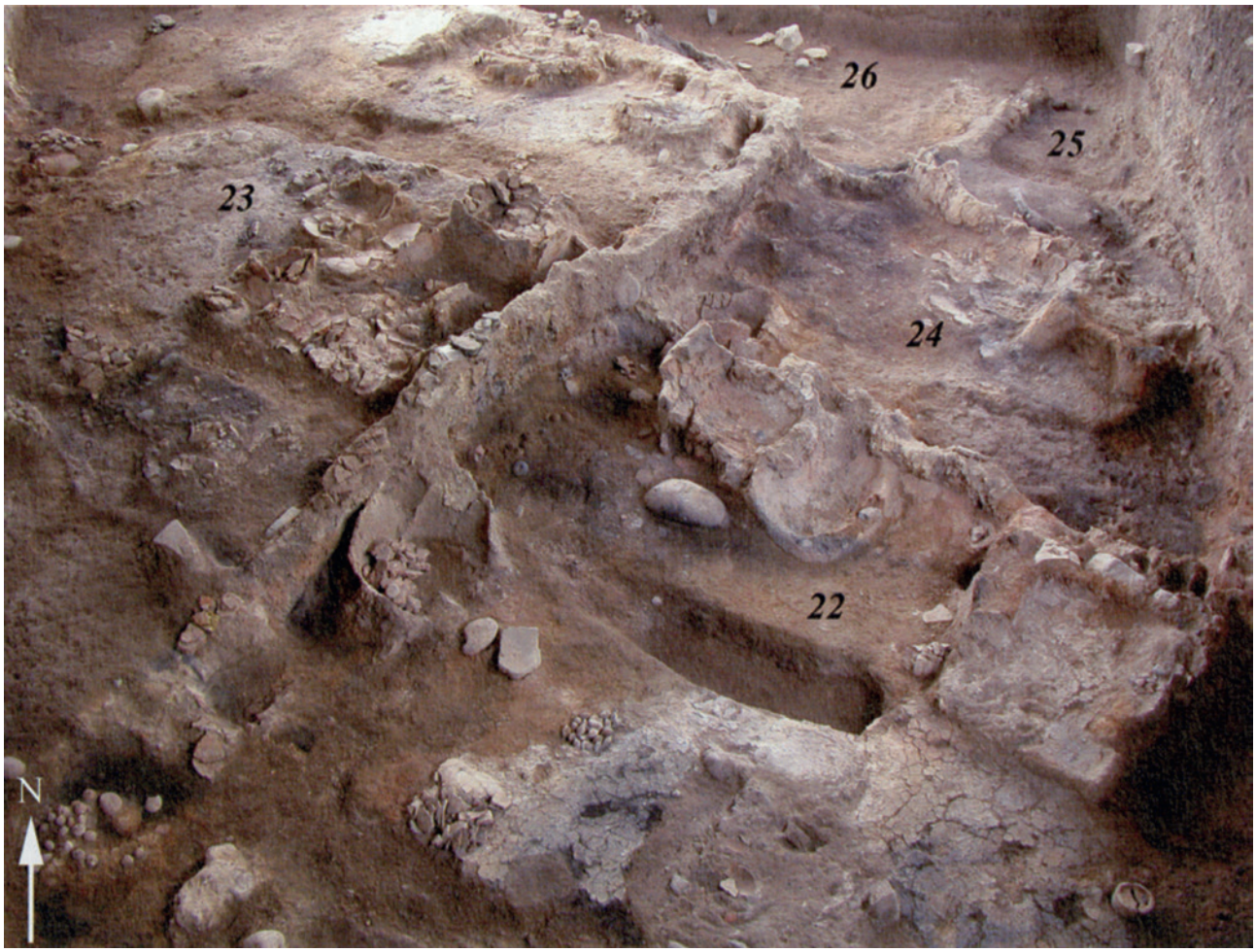


Fig. 51: Ulucak Va. Building features (after Çilingiroğlu, Çevik, Çilingiroğlu 2012, fig. 17).

(PPNB) in the Levant, northern Mesopotamia, and eastern Anatolia. Any direct influence from that period, nevertheless, has proven, as yet, to be contradicted by chronology as even the earliest dates from Ulucak derive from a period some 500 years after the end of the PPNB in eastern Anatolia (Çilingiroğlu 2012, 153). Nevertheless, both phenomena may well be structurally related, if a further aspect be brought into consideration: as yet, not a single find of pottery could be evidenced within the earliest levels of Ulucak, although the remaining finds reflect those from the conventional Neolithic spectrum. Should future research at Ulucak prove that the PPNB could have spread to the westernmost reaches of Anatolia, then this discovery would be of considerable cultural-historical consequence. Up to the present, Mehmet Özdoğan has generally proceeded from a model of cultural zones, according to which the Neolithic lifestyle first travelled from a core area in south-eastern Anatolia to south-western and western Anatolia in a second stage (Özdoğan 2010, 887–888. – Özdoğan 2011, 24–30). This secondary zone of neolithisation would be characterised by the appearance of an already fully developed Neolithic package at some point in the mid-7th millennium (Özdoğan 2007, 143–144). Should the PPNB already have spread to Anatolia's extreme west, then the question must be discussed anew as to whether the ceramic Neolithic of western Anatolia might not, indeed, have autochthonously emerged on this basis (cf. Brami, Heyd 2011, 186–193). The chronological gradient of the earliest appearance of the Neolithic appears secondary in significance within this question as a Neolithic in the tradition of the PPN may well have long survived the end of this phenomenon within the region of the Fertile Crescent, for example in the case of Cyprus (cf. Guilaine, Le Brun 2003. – McCartney 2010). In addition to the absence of pottery vessels, the tradition of circular buildings plays a role in this discussion (Peltenburg 2001). While the narrow insights into the earliest settlement phase of Ulucak presently available offer nothing in the manner of indications for circular buildings, stone foundations of



Fig. 52: Ulucak IV. House foundations (after Çilingiroğlu 2011, fig. 8).



Fig. 53: Ulucak Vb, building 30. Red-slipped vessels with tubular lugs (after Çilingiroğlu 2011, fig. 3).

such structures are preserved from Ege Gübre not far away, which might, in turn, be associated with those discovered on Cyprus (Sağlamtimur 2011). Moreover, these connections emphasise once again the maritime networks at play in the expansion of the Neolithic into western Anatolia (Brami, Heyd 2011, 186).

The structures of the horizon Ulucak V consist of wattle-and-post constructions built against one another so that they each share a wall (Çilingiroğlu, Çevik, Çilingiroğlu 2012, 145) (Fig. 51). The ceramic find material of the levels Ulucak Ve–a is characterised by rounded, softly profiled forms, among these S-profiled bowls and tall, thin pots with conical or slightly tulip-shaped walls and a (presently) singular so-called Red Cross Bowl. Typical are feet that are only slightly, if still distinctively removed from the vessel base. Furthermore, very long tubular lugs and simple pierced knobs are found on handles (Çilingiroğlu, Çilingiroğlu 2007, figs. 24–25). Also noteworthy is the complete lack of wares adorned with impressions, these first appearing from Ulucak Va onwards. Did the maritime influence first become tangible within this phase (cf. Çilingiroğlu 2010) or is a secondary expansion of the maritime networks present here? Further attested within Ulucak Va are long and also short tubular lugs and small pierced knobs. In addition to this might be included painted pottery with red paint on a beige background and with beige paint on a red background, which nevertheless assumes only a small portion of the spectrum.[9] In the uppermost level of Horizon V, transformations are already noticeable which would lead to a fundamentally altered settlement structure during Phase IV.

Crucial for the delineation of Ulucak IV's horizon is a novel building tradition. Now, large, single-layer stone foundations serving as the bases for walls constructed by means of mudbricks start to appear within the archaeological record (Çilingiroğlu, Çevik, Çilingiroğlu 2012, 142). These buildings are no longer built against one another but instead leave space between one other for a system of paths (Fig. 52). Not only the floors of houses but also open spaces are now frequently plastered with trampled clay. The walls are also plastered, with wall paintings even infrequently attested (Çilingiroğlu, Çevik, Çilingiroğlu 2012, 142–143). The spectrum of ceramic forms from Ulucak IVd–c is very similar to that in the levels lying below, although some more softly-profiled forms are also evidenced. Large vessels with a funnel neck clearly offset from the shoulder are new (Çilingiroğlu, Çilingiroğlu 2007, fig. 9, second vessel from top right). Red-on-beige painting remains common. Nevertheless, painting plays only a secondary role within the Izmir region, with only an ever-narrowing proportion of vessel pottery being painted throughout the layers. During Ulucak IVb–a, vessels with constricted necks or with cylindrical necks, clearly offset from the shoulder, develop from the vessels with offset funnel necks (Fig. 53). The parallels to the horizon of the developed Early Neolithic in the eastern Balkan sphere (Ovcharovo-Gorata/Karanovo II) are here most evident, as not only individual forms such as bulbous vessels with slightly outcurved rims and wide, large bowls but also the manner of the impressed adornment are similar. Some of the vessels do not possess knobs just beneath the belly. Vessels with an oval form now appear with greater intensity. In Ulucak IVb–a, oval feet are also attested.

An essential difference to the pottery in the eastern Balkan region is nevertheless presented by the absence of pronounced raised feet or proper stands (as appear copiously at Ovcharovo-Gorata and Karanovo II). By means of contrast, the feet in Ulucak IVb–a are either simply flattened or only slightly elevated by means of a flat pot stand (cf. Çilingiroğlu, Çilingiroğlu 2007, figs. 6, 9).

Remarkable at Ulucak is the technique of decorating vessels with a red slip, already attested with the appearance of the first pottery. The red-slipped wares become, in turn, ever more numerous in the course of the Neolithic-Chalcolithic trajectory. In terms of the cultural sequence in the southern Marmara region, the earliest bundle of layers of Ulucak Ve–a is to be associated with the lower deposits from Menteşe 3 or Archaic Fikirtepe. A series of ^{14}C dates place this development in the period between 6300 and 6200 calBC, and thus chronologically on the eve of the neolithisation of the eastern Balkan region. The Early Chalcolithic deposits of Ulucak IVk–e relate to the period immediately prior to 6000 calBC. These may be connected with Ilıpınar X and must reflect the Proto-Starčevo horizon in the central Balkans area. In northern Bulgaria, these may be compared with the finds from Polyanitsa-Platoto, the earlier material from Koprivets, and the finds from Dzhulyunitsa I. Further binding Dzhulyunitsa I and Ulucak IVk–e together are wares with a cream-coloured coating occurring at both sites (Krauss 2011b, fig. 2/3–4). It is accordingly also clear that it is only with Ulucak IVd–c that a synchronism might roughly be established with Karanovo I. This parallelisation is primarily supported by the connection between Ulucak IVb–a and parts of the material from Ovcharovo-Gorata which correspond to the Karanovo II horizon in Thrace.

9. According to Çiler Çilingiroğlu, this comprises of less than 1% (pers. comm.).

An intermediate stage on the way to the north is presented nevertheless by Ilıpınar VII–VI, which may be associated with Ulucak IVb–a. Indicators for this parallelisation are formed by the vertical handles below the rim, as they appear at both sites within this horizon (cf. Thissen 2001, fig. 61/1–2). It thereby becomes clear that a connection of the horizon Ovcharovo-Gorata/Karanovo II in the eastern Balkan region with Ulucak is hardly possible, as the pertinent chronological stretch of Ilıpınar Va and, most prominently, Ilıpınar Vb is not attested at Ulucak.

Some 40 km north of Izmir directly on the Aegean coast lies the site of Ege Gübre, already mentioned with respect to the circular buildings discovered there. The excavator Haluk Sağlamtimur supposes that the earliest settlement phase was Phase IV with only circular buildings (Sağlamtimur 2012, 197–198). In the later Neolithic Phase IIIa, the first buildings with corners developed, in parallel with a continuing tradition of circular houses. In these phases, the settlement was fortified with a surrounding wall further extended in the last Neolithic phase of IIIb (Sağlamtimur 2012, 197–198). As no traces of mudbrick were preserved above the stone foundations, Sağlamtimur assumes that the walls originally built upon them were constructed by means of posts, wattle, and clay. The structural finds of Ege Gübre appear to be entirely unique to the region.

The ceramic finds from Ege Gübre may be associated with the Late Neolithic-Early Chalcolithic material from Ulucak (Sağlamtimur 2007). These comprised of forms with long tubular lugs and with heavily stylised caprid or bovid heads applied to the surface (Sağlamtimur 2007, figs. 6b, 7). A large proportion of impression-adorned ware (Sağlamtimur 2007, figs. 8–9) and the red slip present upon many sherds are striking. If the appearance of impression-adorned ware and thickened rims together with the many fragments with red slips be chosen as criteria, then a parallelism may be drawn with Ulucak IVk–e until at the very least IVd–c.[10] Among the vessel feet from Ege Gübre, some very raised examples may be found (Sağlamtimur 2012, fig. 14) which appear throughout the entire eastern Balkan region with the Karanovo I horizon.

The cultural sequence of the site of Yeşilova on the western outskirts of Izmir would have begun somewhat earlier. The lowest bundle of levels, III, is to be dated to the Neolithic and Early Chalcolithic; this was composed, in turn, of a total of eight individual levels (Derin 2007). Stone foundations are attested, upon which rectangular, freestanding clay structures had been erected (Derin 2012, 179–180).

Within the earliest deposits of Yeşilova III8–6, dark and red burnished wares are present. By means of contrast, wares adorned with impressions do not yet occur. From Yeşilova III5–3 onwards, red burnished wares dominate the inventory (Derin 2007). It is only in the latest levels of Yeşilova III2–1 that impression-adorned wares appear, these permitting a parallelisation with the levels of Ulucak IVk–e onwards. The material of the levels Yeşilova III8–3 must accordingly be assigned an earlier relative date that must be considered parallel for at least a certain period of time with Ulucak V.

The material from Dedecik-Heybelitepe, a hill some 35 km south of Izmir on the western edge of the plains of Torbalı, is rather more to be associated with one of the Chalcolithic levels of Ulucak (Lichter, Meriç 2007. – Herling et al. 2008. – Lichter, Meriç 2012). The small-scale excavations did not reveal any evidence about the type of buildings at this site (Lichter, Meriç 2012, 134). The Early Chalcolithic is a relatively thin settlement level directly resting upon rock, and covered by a layer from the Late Chalcolithic and Early Bronze Age graves.

Published forms include bulbous pots with conical rims, vessels with funnelled edges, and certainly also bowls, together with S-profiled vessels (Herling et al. 2008, 21 and figs. 4–5). Diagnostic is the appearance of impression adornments and long perforated lugs (or false lugs), and also various vessel feet suggesting a parallelisation with the upper levels of Ulucak IV. Contact via the Aegean may be demonstrated by means of obsidian used for tools originating from the deposits of Adamas and Demenegaki on Melos (Lichter, Meriç 2012, 134).

That it was not only the seaway by means of the islands adjacent to Melos that was travelled in pursuit of obsidian is demonstrated by the comprehensive study of the obsidian tools of Çukuriçi Höyük near ancient Ephesus: while the vast majority of the artefacts can be ascribed to the two deposits on Melos, a few pieces may be associated with obsidian deposits within central Anatolia (Bergner, Horejs, Pernicka 2009). It has also recently become known that Çukuriçi Höyük is included among those sites within western Anatolia already providing evidence of a solid architecture of freestanding mudbrick structures built upon stone foundations during the Late Neolithic (Horejs 2008a. – Horejs 2008b. – Horejs 2012. – Horejs 2017). By means of the architecture, a parallelism between Çukuriçi Höyük VIII and Ulucak IV is presented.

10. The ^{14}C dates for Ege Gübre reflect a chronological placement between 6200–6000 calBC (Sağlamtimur 2007).

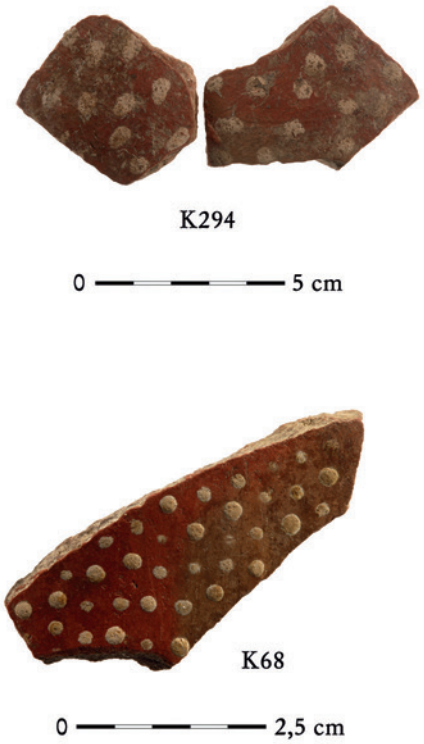


Fig. 54: Çukuriçi Höyük VIII. White-on-red painted ceramic fragments (B. Horejs).

The ceramic find material from Çukuriçi Höyük VIII includes red-slipped, globular pots with straight sided or S-profiled walls (Horejs 2008b, fig. 5). Long tubular lugs and impressed decorated sherds are also known. Horejs compares a globular pot with a vertical, narrowing mouth and four vertical lugs on the upper part with, among others, two small, globular pots from the upper levels of Ulucak IV which display a slightly offset rim (Horejs 2008a, fig. 14). Despite this, an Anatolian Late Neolithic-Early Chalcolithic date can be considered secure. Comparable forms from this chronological horizon within northern Bulgaria are generally known, for example from Koprivets (Krauss 2006, pl. 5/3), Polyanitsa-Platoto (Todorova, Vaysov 1993, fig. 53/6), and Dzhulyunitsa I (Elenski 2006, fig. 7/3). However, the low-set realisation of the lugs (consistently below the broadest extension of the vessel's midriff) is conspicuous on the vessels from northern Bulgaria, while the pots of the Izmir region have their lug handles on the upper part of the vessel body. This may well reflect local idiosyncrasies. The long-lived and widely disseminated nature of these forms is evidenced by very similar examples from Starčevo (Benac 1979, pl. XVII/2–3.4), Golyamo Delchevo I (Todorova et al. 1975, pl. 4/5), Drinovo (Todorova, Vaysov 1993, fig. 117/10), Samovodene A (Stanev 2002a, fig. 138 left), and Yabalkovo (Leshtakov et al. 2007, fig. 10/9); moreover, this form also remains present in the material from Ovcharovo-Gorata.

It is a fortunate situation at Çukuriçi Höyük VIII that two red-slipped ceramic fragments with white speckled painting (Fig. 54) were found together with material generally comparable to the earliest Neolithic in the Balkan region. This specific form of vessel adornment may be evidenced throughout the entire Balkan region up to Transylvania. White-on-red speckled painting may, for example, be found in the lowest levels of Aşağı Pınar,[11] at Kardzhali (Nikolov 2002a, pl. 134/2), Dzhulyunitsa II (Elenski 2006, fig. 9/6), Grivac II (Bogdanović 2008, pls. 5.31–5.35), Donja Branjevina II (Benac 1979, pl. XXXVIII/1–3) and in the earliest material of the Gura Baciului (Lazarovici, Maxim 1995, colour pl. I. – Ciută 2005, pl. XVI). What is striking is the strong concentration of sites with white-on-red painted pottery in the regions stretching to the Danube, and the scanty distribution in the areas north of the Danube (Fig. 55). The earliest find sequence documented at Çukuriçi Höyük probably attests therefore to the chronological horizon at the beginning of the white painting in the Balkans, being at the turn of the 7th to 6th millennium. Extensive white painting prior to the speckled painting is only evidenced within North Macedonia and Southwest Bulgaria. According to Milutin Garašanin, speckled paint there is only characteristic for the level of Anzabegovo-Vršnik Ic (Garašanin 1998, fig. 5/a, e) which, in turn, may easily be parallelised with the aforementioned sites in the eastern and northern Balkans.

3.2. Maritime Networks of the Aegean

Generally, the comparison of the Balkan Neolithic with western Anatolia presents a clear cultural gradient. While, in western Anatolia, solid mudbrick structures with stone foundations may be found, the edifices of the Balkan Neolithic are far more simply built. In comparison to the material culture of western Anatolia, that of the Balkan region also appears to be far more reduced in form. In addition, vessel ceramics are of markedly better quality and variety in western Anatolia. An understanding of the development of vessel ceramics in western Anatolia nevertheless permits the clear identification of the moment in which the drive for neolithisation spread northwards. This occurred in the period

11. Finds from the earlier Levels 7–8 in the collection of the University of Istanbul. I am grateful to Mehmet Özdoğan for his enduring hospitality and the numerous opportunities to work within the institute's collection connected to this.

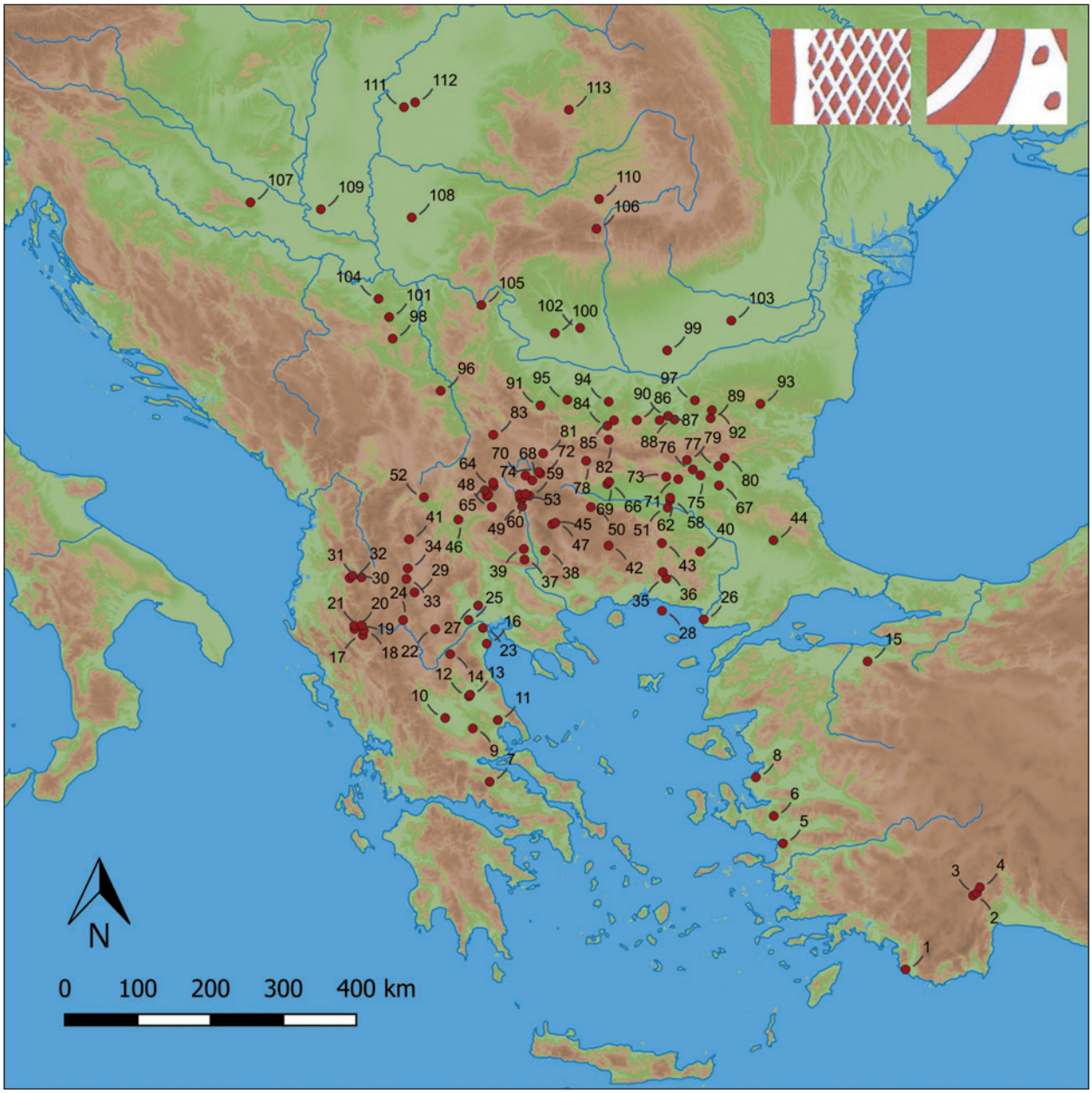


Fig. 55: Distribution of white-on-red painted Early Neolithic pottery in the Balkan-Carpathian region and Anatolian Chalcolithic. Based on a map for the western Bulgarian sites by Petru Ciocani (Ciocani 2012, fig. 2) and a database from Canay Alpagut. – 1. Girmeler Cave. – 2. Bademağacı. – 3. Höyücek. – 4. Hacılar. – 5. Çukuriçi Höyük. – 6. Ulucak. – 7. Elateia. – 8. Ege Gübre. – 9. Achilleion. – 10. Prodromos. – 11. Sesklo. – 12. Argissa. – 13. Otzaki. – 14. Servia. – 15. Aktopraklık. – 16. Revenia Korinos. – 17. Barç. – 18. Tren. – 19. Vashtëmi. – 20. Sovjan. – 21. Podgorie. – 22. Mavropigi-Filotsairi. – 23. Paliambela-Kolindros. – 24. Velushina. – 25. Nea Nikomedeia. – 26. Hoca Çeşme. – 27. Giannitsa B. – 28. Uğurlu. – 29. Veluška Tumba. – 30. Rashtan. – 31. Zla Strana. – 32. Rajcë. – 33. Mogila. – 34. Vrbjanska Čuka. – 35. Chernichevo. – 36. Krumovgrad. – 37. Ilindentsi. – 38. Kovachevo. – 39. Brezhani. – 40. Tsiganova Mogila. – 41. Cerje. – 42. Rakitovo. – 43. Kardzhali. – 44. Aşağı Pınar. – 45. Dobrinishte. – 46. Anzabegovo. – 47. Eleshnitsa. – 48. Drenkovo. – 49. Balgarchevo. – 50. Kapitan Dimitrievo. – 51. Yabalkovo. – 52. Rug Bair. – 53. Mursalevo. – 54. Kamenik. – 55. Bersin. – 56. Dupnitsa. – 57. Nevestino. – 58. Kovach. – 59. Sapareva Banya. – 60. Dolistovo. – 61. Kraynitsi. – 62. Simeonovgrad. – 63. Shishkovtsi. – 64. Negovantsi. – 65. Priboy. – 66. Dabene. – 67. Glufishevo. – 68. Pernik. – 69. Karlovo. – 70. Galabnik. – 71. Starozagorski bani. – 72. Buhovo. – 73. Azmak. – 74. Kremikovtsi. – 75. Stara Zagora. – 76. Karanovo. – 77. Knyazhevo. – 78. Chavdar. – 79. Kazanlak. – 80. Kliselika. – 81. Slatina-Sofia. – 82. Muldava. – 83. Vaksevo. – 84. Tabashkata Cave. – 85. Devetaki Cave. – 86. Dzhulyunitsa. – 87. Samovodene. – 88. Hotnitsa. – 89. Svetlen. – 90. Orlovets. – 91. Gradeshnitsa. – 92. Pomoshtitsa. – 93. Kliment. – 94. Milkovitsa. – 95. Ohoden. – 96. Porodin. – 97. Koprivets. – 98. Grivac. – 99. Măgura Buduiasca. – 100. Oltenia. – 101. Banya. – 102. Cîrcea. – 103. Malak Preslavets. – 104. Starčevo. – 105. Dubova-Cuina Turcului. – 106. Valea Rii. – 107. Körös. – 108. Foeni Sălaş. – 109. Donja Branjevina. – 110. Ocna Sibiului. – 111. Szarvas-Egyházföld. – 112. Endrőd. – 113. Gura Baciului (R. Krauß).

of Ulucak Va and Çukuriçi Höyük VIII, during which three elements serving as innovations within the ceramic trajectory are perceptible and which are also characteristic of the earliest pottery within the Balkan region: firstly, impresso decoration; secondly, depictions of artiodactyls applied in relief on the vessel surface; and thirdly and finally, white-on-red painted pottery. The painting of white is certainly somewhat earlier in date within western Anatolia, but first appears frequently at this time. The tradition of red slipping pottery (a further element appearing with the neolithisation in the Balkan region) is also older.

An essential difference may be seen in the western Anatolian Neolithic's clear connection with the sea, while the spread into the Balkan-Carpathian region must have occurred overland. While the rivers there must certainly have played a vital role as routes of communication, this connection to a river valley is hardly comparable with marine contacts over the open sea, even when boat travel must have played a vital role in the navigation of stretches of rivers. The association of agriculture and husbandry with sea voyage would seem initially paradoxical, inasmuch as the Neolithic economic mode is predicated upon a sedentary lifestyle while boat travel, in contrast, brings with it the mobility of human societies. Whether, in fact, this comprised groups with differing economic forms who merely cooperated with one another on grounds of commerce cannot be determined on the strength of the present state of research. The very specific natural environment of western Anatolia with the Aegean Islands spread out before it certainly presents the preconditions for a complex maritime-based system of exchange much in the manner of that described, for example, by Bronisław Malinowski in respect of the inhabitants of the archipelagic world of Melanesian New Guinea (Malinowski 1979). With the chosen title of his work *Argonauts of the Western Pacific*, Malinowski consciously harks back to ancient mythology, itself embedded in the Aegean-Pontic coastal region. Among the material goods archaeologically tangible today, obsidian and the shells of the spondylus mussel may well have functioned within the Neolithic Aegean as wares within an exchange system much akin to that at the beginning of the 20th century in Melanesian New Guinea. In addition to the trade in goods, there would have been immaterial and archaeologically intangible social, economic, and religious aspects, these possessing significance within the aforementioned ethnologically observable system of exchange (Malinowski 1979, 115–141). Such complex relationships should also be presupposed for the prehistoric societies within the Aegean region. The comparable style of ceramic adornment within the South-eastern European-Anatolian Neolithic could be evaluated as rendering a hint as to these relations (cf. Brami, Heyd 2011, 183–184). The Troad, the islands of the Sporades, and the coastal region of Turkish and Greek Thrace would certainly also have participated in the maritime exchange network of the north-western Anatolian and Aegean Neolithic.

3.3. The Troad and its Adjacent Islands

Neolithic find collections are known from Coşkuntepe in the Troad (Seeher 1990. – Takaoğlu 2005). Firstly, the many blades of Melian obsidian also found here indicate that this region was also involved in the maritime networks (Takaoğlu, Özdemir 2013, fig. 8). The ceramic finds have been connected by Jürgen Seeher to Levels IX–VI at Hacılar (Seeher 1990, 11–14). These consist of various pots with a red slip, with conical or slightly S-shaped protruding lips, partially with thickened rims and long tubular lugs (Seeher 1990, fig. 1). The pottery is solely tempered by minerals. While Seeher detects here a marked affinity with forms from south-western Anatolia and strictly delineates these against the Fikirtepe group in the north, similarities in form may be noted with the pots from Menteşe 3 (cf. Roodenberg et al. 2003, figs. 12/1–4; 13–14), which by no means contradict a parallelisation with the cultural sequence in the Anatolian maritime region, but rather confirm this as such. A connection to Fikirtepe is also indicated by a very small fragment of a box-like vessel from Coşkuntepe (Seeher 1990, fig. 1/22). These accordingly indicate the ties with the inland which might be expected and, more specifically, with the southern Marmara coast. With recourse to the Izmir region, a parallelism may be posited between the surface finds from Coşkuntepe and Ulucak V by means of the red-slipped ceramics and some long, drawn-out tubular lugs (Takaoğlu, Özdemir 2013, figs. 3–4).

Similar material was discovered from the excavations at the village of Uğurlu in the western portion of the island of Gökçeada/Imbros (Erdoğu 2003, 16–17. – Erdoğu 2013). These fragments are also coated with a red and, indeed, also black clay slip. Short and extremely long tubular lugs and a few rims with projecting lips are highly reminiscent of the Early Chalcolithic finds from the Izmir region (Erdoğu 2003, fig. 4), although no black burnished wares are preserved from the aforementioned area.[12] This specific treatment of the surface may more reasonably be associated with the earlier levels of Hoca Çeşme. Nevertheless, a link with central western Anatolia is evident through architecture,

12. The present author is grateful to Çiler Çilingiroğlu for this information.

with stone foundations of free-standing buildings having also been uncovered in Uğurlu (Erdoğu 2013, 3–5 and figs. 4–5). Obsidian tools (Erdoğu 2013, fig. 46), spondylus jewellery (Erdoğu 2013, fig. 24), impresso pottery (Erdoğu 2013, fig. 37), and individual sherds of red-slipped pottery with characteristic pierced lugs and plastic moulding in the manner of animal horns (Erdoğu 2013, fig. 34) can also be understood to be elements of the maritime network which roughly connects Uğurlu V with Ulucak V. Moreover, this site displays a very clear connection with the cultural sphere north of the Aegean during Phase III. Elements of the developed Early Neolithic of the Balkans are round vessel lids with offset brim (Erdoğu 2013, fig. 40 below left; fig. 41/4) and vessels with handles and mushroom-shaped attachments (Erdoğu 2013, fig. 41/5–6) which find their best parallels in material from Karanovo II and III (Hiller, Nikolov 1997, pl. 59/10. – Nikolov 1998, pl. 7/22–26). The relationships in the north may possibly have begun earlier, if two fragments of painted pottery from Uğurlu IV are considered (Erdoğu 2013, fig. 39) which might serve as a bridge between Çukuriçi VIII and the earliest ceramic horizon in South-eastern Europe. These white-on-red painted sherds may effortlessly be associated with similarly decorated vessels from Karanovo I (Hiller, Nikolov 1997, pl. 66) and some fragments from Koprivets (Krauss 2006, pl. 2/13–14, 20). A number of long blades made from so-called 'Balkan' flint (see Chapter 8.10 with the distribution map Fig. 191) may also be evidenced in the north (Erdoğu 2013, figs. 44–45). A clear shift in cultural connections may thus be witnessed over the course of the Neolithic upon the outlying northern island of Imbros. While indications of maritime networks with the Aegean archipelago and with central western Anatolia are still evident within the material of phases Uğurlu V and IV, the later material of Phase III overwhelmingly demonstrates clear contacts with the developed Balkan Early Neolithic. The absence of black burnished pottery distinguishes the sites in the Troad from those of the Early Neolithic within the Marmara region. In this respect, a connection to the maritime network of the Aegean of this region in contrast to an overland communication with the Marmara region is once again proven (cf. Brami, Heyd 2011, 178–179).

3.4. The Maritsa River Estuary

As a result of the positioning of the site of Hoca Çeşme at the estuary of the Maritsa (Evros/Meriç) with the Aegean, the Balkan connections of the find material are invariably emphasised by various commentators. The Maritsa springs from the Rila Mountains in western Bulgaria and flows through the entire Thracian Plain. Among the four levels of settlement deposits, Herrmann Parzinger identified parallels mostly between Level II there and Karanovo I on the basis of the red-slipped pottery sherds (cf. Özdoğan 1999, figs. 39–40). Following on from this analysis, the lower levels of Hoca Çeşme III and IV must therefore be earlier in date.[13] As finds of this manner are as yet completely lacking within the north of Thrace, these can only be compared with material from those Karanovo I period sites within northern Bulgaria, the Struma Valley, and the central Balkans. S-profiled or softly rounded biconic forms on simply flattened feet with tubular lugs prevail (Özdoğan 1998, figs. 4–8). In terms of adornment, plastic applications and, more seldom, fine incisions and impressions are evidenced, while conversely, there are no examples of vessel painting. A general similarity to the pottery from Koprivets might be detected, but the carinated forms are absent. Currently unpublished but demonstrably present are a few sherds of impression-adorned ceramics from Hoca Çeşme II, which are also typical among the material from Koprivets (Karul, Bertram 2005, 125). The characteristic low-set biconic profile from Hoca Çeşme may first be observed in the material from the lower levels of Kovachevo (Pernitcheva 1990, pl. VIII/9. – Lichardus-Itten et al. 2002b, pls. 15/6; 18/1–3) and possibly also at Kraynitsi (Tchohadjiev, Bakamska 1990, pls. 10/4; 12/1). The material ascribed to Hoca Çeşme I comes from various pits which were additionally heavily damaged by modern surface interventions. A portion of the finds may be associated with Karanovo III to IV and, in turn, Toptepe (Özdoğan 1998, 448–449. – Karul, Bertram 2005, 125–126. – Parzinger 2005, 45–46). Fragments of pattern burnished ware (Özdoğan 2013, figs. 85–86) may be ascribed to the Anatolian-Aegean Late Chalcolithic (Beşik-Sivritepe/Kumtepe A) (cf. Gabriel 2006).

At the beginning of its development, this site also demonstrates evident connections to the maritime networks of the Aegean and western Anatolia. Clear indications of this are provided by the solid architecture within Hoca Çeşme IV (Özdoğan 2013, figs. 62–66); as yet, this appears to be the northernmost site with Neolithic stone architecture. Over the course of the development at the site, this mode of construction is not only increasingly marginalised, but also the connections with the Balkan sphere are strengthened. In addition to the parallels in the ceramic trajectories,

13. At this juncture, the present author must also thank Mehmet Özdoğan for the opportunity to examine a portion of the finds at the University of Istanbul.

the so-called 'Balkan' flint becomes significant (Özdoğan 2013, fig. 97) which might be assumed to indicate communication with the north.

To conclude the discussion of the region of the north-eastern Aegean, the material from the site of Makri must be considered. The Neolithic settlement lies west of the Maritsa estuary, within the Greek portion of southern Thrace. The excavator Nikolaos Evstratiou dates the lowest level of Makri I to the general period prior to the horizon of Sitagroi I (Evstratiou 1996). Jan Lichardus more specifically associates Makri I with Karanovo II (Lichardus, Iliev, Christov 2002, 346), an ascription which would be difficult to assess due to the presently schematic publication of the vessel types (cf. Evstratiou 1996, 578, fig. 1). Makri II should date to the Late Neolithic, which appears relatively consequent in light of the many carinated bowls (Evstratiou 1996, 579, fig. 2). These forms may be generally associated already with Karanovo IV.

Should the drive behind the neolithisation of the Balkan region have arrived overland, then the area of the Marmara Sea would have assumed particular significance within this transmission over the Dardanelles or the Bosporus. The comparatively isolated development of the Neolithic within this sphere presently contradicts somewhat such an intensive interaction. While parallels to the cultural trajectory of Pisidia and, in part, with that within central western Anatolia might often be noted, these developments hardly seem to have travelled northwards; rather, the Neolithic of the Marmara region serves as something of a barrier between the ceramic tradition of the Late Neolithic-Early Chalcolithic in western Anatolia and the earliest pottery within the Balkan sphere.

3.5. The Istanbul Region

The sites of Fikirtepe and Pendik on the western shore of the Marmara Sea number among the longest known Neolithic settlements in Turkey (Janse 1925. – Bittel 1969. – Özdoğan 1983. – Özdoğan 1999, 207). Both sites lie today within the Asian part of the metropolis of Istanbul. By means of the finds of both sites, Özdoğan defined a Fikirtepe culture encompassing large portions of the cultural development of the southern Marmara region (Özdoğan 1983. – Özdoğan 1999, 213–214); according to this, the so-called Archaic Fikirtepe reflects the earliest ceramic culture in the region. Özdoğan and Ivan Gatsov claim to be able to evidence an even earlier Aceramic Neolithic at Çalca and Musluçeşme (Özdoğan, Gatsov 1998). Brami and Heyd have nevertheless quite rightly highlighted the heterogeneous character of the stone artefacts from both sites (Brami, Heyd 2011, 190). Characteristic forms of the Neolithic in its earliest expression at Archaic Fikirtepe are spherical bowls with straight or lightly bent mouth and globular pots with internal interstice at the rim (Özdoğan 1999, fig. 5, above). Following this is the so-called Classical Fikirtepe, of which S-profiled forms and box-shaped vessels with right-angled corners are characteristic (Özdoğan 1999, fig. 5, below). The pottery is exclusively monochrome-slipped, and some vessels display scratched linear patterns of hatched triangles, rhomboids, or rectangles. The late phase of the cultural group, the so-called Developed Fikirtepe is ultimately not attested at either Fikirtepe or, indeed, Pendik. In their stead, Özdoğan names finds from Ilıpınar VIII, Yarımburgaz 4, and also some Chalcolithic material from Demircihüyük (Özdoğan 1999, 213). The material from Fikirtepe and Pendik long stood isolated as it can only be very generally typologically associated with the Balkan Early Neolithic; as a whole, it is potentially even older than the earliest Neolithic settlement in South-eastern Europe.

Spectacular new finds have emerged from the civic district of Yenikapı in the centre of Istanbul, where portions of a Neolithic settlement and an adjoining graveyard were unearthed adjacent to a construction site for a new underground train line under the Bosporus (Kiziltan, Polat 2013). Here, stone foundations could also be evidenced for the Marmara region for the first time, these serving to elevate somewhat the bases upon which the post and daub buildings were then constructed above the damp shoreline of the Bosporus. This light shoring up of the building foundations can nevertheless hardly be compared to the well-set stone fundaments of the settlements in the region of Izmir. The damp soil conditions at Yenikapı contributed to an exemplary preservation of the wattle-and-post construction of the walls (Kiziltan, Polat 2013, 16).

The ceramic find material from Yenikapı throughout its duration may primarily be associated with Archaic and Classical Fikirtepe and thereafter with Yarımburgaz 5 to 2 (Kiziltan, Polat 2013, figs. 23–30). Also striking here is the great number of finds fashioned from organic material otherwise lacking within the Neolithic find spectrum of the region.

The burial ground harboured a further surprise; in addition to the usual crouched burials already known from the Marmara region, for which, here portions of the wooden coffins are also preserved (Kiziltan, Polat 2013, figs. 38–44), individual cremation burials in vessels also occurred. The cremation of the bodies evidently took place on site, as the archaeological exposure of an extended area with traces of burning and widely strewn cremation remains demonstrated (Kiziltan, Polat 2013, figs. 49–52).

3.6. The Northern Edge of the Marmara Sea

Of super-regional significance is the find material from the Yarımburgaz Cave, 22 km west of Istanbul (Özdoğan 2013, 176–178). The site is important as a source for settlement archaeology, despite not representing any regular settlement location. Sunken into the uppermost levels of the cave site of Yarımburgaz (Kansu 1972. – Özdoğan, Koyunlu 1986) were unstratified pits (Yarımburgaz 0), within which typical Toptepe material was found together with a vessel with tap-like handles which existed in Karanovo III (Özdoğan, Miyake, Özbaşaran Dede 1991, fig. 13). It is thus probable that Toptepe must be considered as being at least temporarily parallel to Karanovo III. Until recently, specific Toptepe pottery remained astonishingly unknown within Bulgaria. Now two Toptepe jugs are published from the Varna Museum which probably originate from the vicinity of Primorsko some kilometres south of Burgas (Slavchev 2008, fig. 5). Larger quantities of Toptepe material originate from the settlement at Lyubimets presently being excavated by Vassil Nikolov.[14] The present author was able to examine a further Toptepe vessel in the Museum of Sozopol hailing from the excavations at Budzaka near Sozopol led by Petar Leshtakov. A scattering of Toptepe ceramics along the western bank of the Black Sea may hence be tendentially sketched, further contours of which will certainly be gained by means of future research within the Bulgarian Strandzha region and in the hinterland of Burgas (Fig. 56). Although the state of research in this region is more than scanty, Toptepe pottery does not seem to have been dispersed far inland. Certainly, no comparable forms have been brought to light during the intensive research within the lower Tundzha conducted by colleagues from Saarbrücken (Project Drama) (Lichardus et al. 2000b).

If Toptepe were now to be parallelised with Karanovo III, then the earlier levels from Yarımburgaz Cave would be of importance to comparisons with Ovcharovo-Gorata or Karanovo II. The deposits span from the Palaeolithic until the Byzantine period, and are very disturbed from interventions within the cave sediment during the later periods of occupation (Özdoğan, Miyake, Özbaşaran Dede 1991, 67–68). The lowest settlement deposits of Level 5 only produced completely shattered material. Red- (34%) and dark- (38%) slipped wares with sand and fine pebble temper predominate. Clearly recognisable forms cannot be discerned due to the heavy fragmentation. A sherd with incised and engraved decoration and a fragment with lug handles are preserved (Özdoğan, Miyake, Özbaşaran Dede 1991, figs. 4/2–4). Regardless, the scanty material basis hardly permits any secure parallelisation with other sites. That this might pertain to Pre-Karanovo-I-period material (Parzinger 2005, 43) can only be supported by it being stratigraphically overlaid by levels, whose finds can merely be indirectly associated with Karanovo I. The pertinent pottery from Yarımburgaz 4 displays softly profiled forms. Semi-spherical bowls and tall vessels with a globular lower body and a conical narrowing neck (Özdoğan, Miyake, Özbaşaran Dede 1991, figs. 5–6). Not only are there no good comparanda for these forms in the northern regions, but also the highly characteristic incised decoration of serrated and stepped bands, hooked meanders and deep, parallel incised lines (Özdoğan 2013, figs. 46–48) are entirely unique from a South-eastern European perspective. This specific type of ceramic adornment is most reminiscent of the decorated patterns of LBK *Notenkopf* ('note head' as in musical notes) decorations, a comparison made time and again by Özdoğan himself (most recently Özdoğan 2013, 178). This horizon is not chronologically fixed but is, nevertheless, certainly older than the *Notenkopf* pottery within the Danubian region and it remains unclear whether this pottery is slightly older or younger than that found at Karanovo I. Certain fragments of triangular miniature tables with checkerboard impresso decoration can be connected with Karanovo I or also with Karanovo II. Some deep-set, slightly biconic bowls from Yarımburgaz 3 with circumferential incised triangular patterns on the shoulder may potentially be associated with forms from Kovachevo (Lichardus, Iliev, Christov 2002, pl. 18/1–4, 6, 10). Interestingly, however, the bowls from Kovachevo are not adorned with circumferential triangular motifs by means of an incision technique, but are instead painted. It is only with Yarımburgaz 3 that a weak indication is provided that the earlier levels must, in fact, be dated prior to the period of Karanovo I. The actual date of the levels of Yarımburgaz 5–4 is difficult to state with a view northwards, as this evidently pertains to material considerably older than the earliest pottery presently known from the Balkans. Should the connection between Yarımburgaz 3 and Kovachevo Ia be accepted, then the discovery of vessel fragments recalling *Notenkopf* pottery and early Toptepe forms in the same level would be quite astonishing (Özdoğan, Miyake, Özbaşaran Dede 1991, fig. 8). The alleged resemblance with the classical *Notenkopf* pottery as postulated by Özdoğan (Özdoğan 2013, 178) seems purely coincidental on grounds of the vast distance, especially considering that the entire space between the northern shore of the Sea of Marmara and Romanian Moldavia has not produced any ceramics bearing even passing resemblances. Even assuming

14. The current excavations have as yet only been reported in the annual transactions of the Archaeological Institute at Sofia (Nikolov, Nehrizov, Tsvetkova 2008).

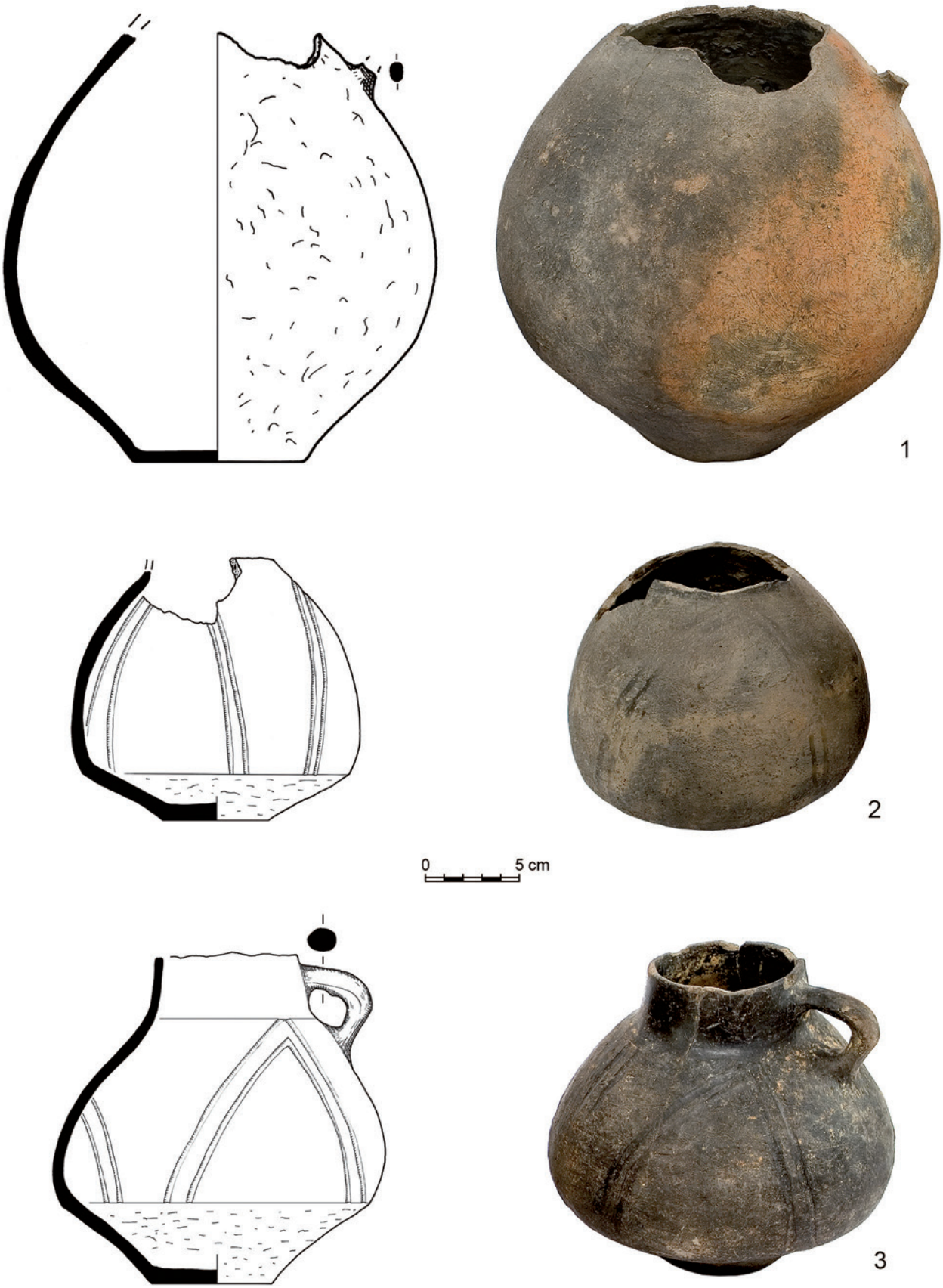


Fig. 56: Primorsko. Ceramic of the Toptepe style (after Dimitrov, Draganov, Prahov 2020, fig. 36).

a coastline for the Black Sea radically different from that of the present day hardly explains the overwhelming lack of finds. From Romanian Moldavia, in particular, some indications suggest a chronological ascription of the *Notenkopf* pottery only to after Criș III, and thereby to the horizon of Ovcharovo-Gorata, as will be later outlined. As concerns the low-set, jug-like vessels with falling shoulders (Özdoğan, Miyake, Özbaşaran Dede 1991, fig. 8/3–4), these could well have developed from the globular forms with vertical necks from Yarımburgaz 4 (Özdoğan, Miyake, Özbaşaran Dede 1991, fig. 6/2–5), and, in turn, might be seen as prototypes of the later Toptepe jugs. As to how the material from Yarımburgaz 2 should be evaluated remains largely unclear. Some of the softly profiled forms, partially with slightly out-turned lips, are generally reminiscent of the Balkan Early Neolithic (Özdoğan, Miyake, Özbaşaran Dede 1991, fig. 10). Some fragments with incised decoration and fingernail impressions also fit well with it (Özdoğan, Miyake, Özbaşaran Dede 1991, fig. 9/6–9, 16–17). Only a completely intact cup with a gentle S-profile and parallel incisions on its lower portion does not fit in. With its untypically placed handle on the side of the body, the form is reminiscent of characteristic cups from the Coțofeni-Cernavodă III Complex (and thereby markedly later finds).[15]

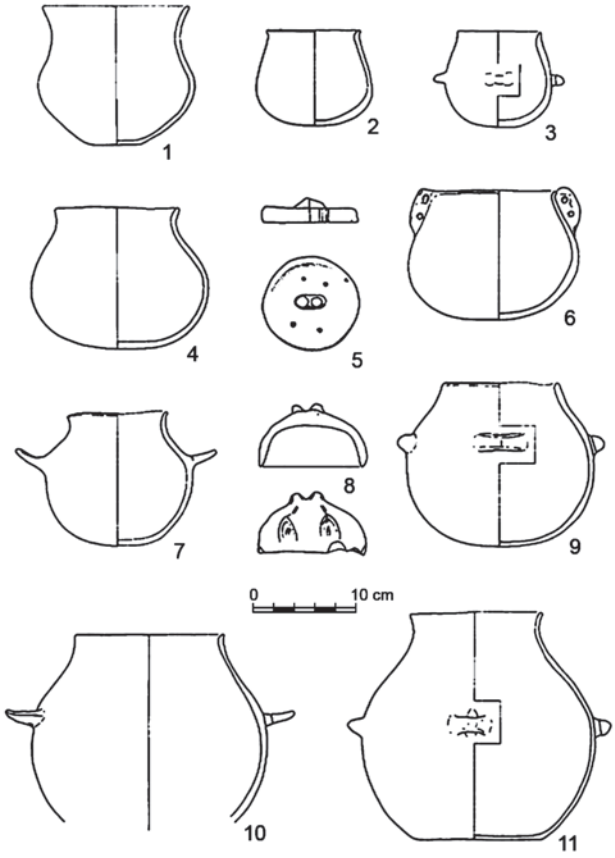


Fig. 57: Ilıpınar IX. Vessel shapes (after Thissen 1995, fig. 2).

3.7. The Southern Edge of the Marmara Sea

Three Neolithic burials unearthed in 2006 at Barcın Höyük south of Lake İznik might be ascribed to Classical Fikirtepe (Roodenberg, van As, Alpaslan Roodenberg 2008). These comprise of the grave of a young adult, an older woman, and a further woman who was evidently interred secondarily. There are many fragments of box-like vessels and also pots and bowls with S-profiled or straight walls which might be associated with the finds from Fikirtepe and Pendik (cf. Roodenberg, van As, Alpaslan Roodenberg 2008, figs. 6–7). Two ^{14}C dates from the graves point towards the second half of the 7th millennium (Roodenberg, van As, Alpaslan Roodenberg 2008, 62), the period either immediately on the cusp of the neolithisation of the Balkan region, or right at its beginning.

The architecture of the settlement already stands in contrast to the Aegean coastal region from its very outset. Preserved from Barcın Höyük are only post and clay buildings without discernible stone foundations (Gerritsen, Özbal, Thissen 2013, 6–7, 9). Two essential elements might already be recognised there that do not occur in the Aegean sphere: inhumations in a purposefully constructed burial ground, and post and clay architecture.

Nevertheless, it was only with the excavations on the mound of Ilıpınar on the western bank of Lake İznik that the key to understanding the cultural trajectory in the Marmara region was provided; its long stratigraphic sequence permits the subdivision into a relative chronology of the region's many extremely short-lived settlements (Roodenberg 1995. – Roodenberg, Thissen 2001. – Roodenberg, Alpaslan Roodenberg 2008). The sequence of forms at Ilıpınar is relevant even to the regions north of the Marmara Sea as it also somewhat corrects the articulation of levels at Yarımburgaz Cave.[16] The levels of Ilıpınar were labelled with Roman numerals, of which Strata X–V pertain to the

15. Cf. Morintz, Roman 1968, figs. 37, 39/14–16. – Dzhambazov, Katincharov 1974, figs. 12–14a. – Roman 1977, pls. 46/3; 47/1. The nearest site with such pottery is Drama-Merdzhumekya in the Strandzha region (Lichardus, Ilijev 2001, pls. 8/8; 12).

16. The present author must extend his thanks once more to Mehmet Özdoğan for the opportunity to study a representative selection of the finds at the University of Istanbul.

Neolithic and Chalcolithic deposits. The lowest stratum of Ilıpınar (X) provides evidence of globular forms with bending lips (Thissen 1995, 109–110. – Van As, Wijnen 1995, 94–95. –Thissen 2001, figs. 4–12). The surface of the vessels is of a similar smoothness inside and out. Essentially, a grey-brown and a light brown ware may be discerned respectively. The fabric of the sherds is heavily organically tempered, although fired remarkably hard. Pointed pierced knobs are found on the handles, frequently upturned. Appearing as variants of these are flat, discoid protrusions with a perforation in their centre. These are also upturned (Thissen 1995, fig. 1. – Thissen 2001, figs. 4–5). Generally, Ilıpınar X may be associated with the material of Fikirtepe and Pendik, by means of which it becomes clear that this pertains to a level still preceding the earliest Balkan Neolithic. A continuation of the aforementioned forms may be sketched for Ilıpınar IX (Thissen 1995, 110–111. – Van As, Wijnen 1995, 95. – Thissen 2001, figs. 21–22). Moreover, vessels with a neck structure markedly offset from the shoulder with matching lids are now attested (Fig. 57). Most significant are a few fragments of previously unknown impression-adorned ceramics. These comprise crude incisions (clearly performed with a fingernail) covering the entire vessel body with the exception of the lips. From Ilıpınar IX onwards, there is no further evidence of organically tempered sherds. The ceramic spectrum then consists exclusively of minerally tempered fabrics. A marked increase in impression-adorned pottery may be noted in Ilıpınar VIII (Thissen 2008, figs. 26–27). As before, the globular forms with bended rims and vessels with cylindrical necks predominate (Thissen 1995, 111, fig. 3. – Van As, Wijnen 1995, 95). It is first in the material from Ilıpınar VIII that all of the elements characteristic of the earliest ceramic complexes in the Balkan region might be encountered. The older material from Koprivets and the forms from Polyanitsa-Platoto might be generally comparable within northern Bulgaria. Also appearing in this phase is characteristic incised Yarımburgaz pottery, as yet largely unknown within northern Bulgaria (Thissen 2001, figs. 30/4; 45–46). Altogether, the spectrum of the sites in the Marmara region is much richer in types and variants, so that there is a sense that only a few types of this comprehensive inventory made their way north. An adornment specific to Yarımburgaz may only be found on the small three- and four-footed miniature tables (so called altars), while this decoration remains an exception on vessel pottery. For Ilıpınar VII, knobs just beneath the vessel rim are not characteristic among narrow-mouthed forms (Thissen 2001, fig. 61/3–5). As before, pointed pierced lugs are attested, although hardly any of these are upturned. Vertical pierced lugs and handles are also attested, among these pointed, elbow-like exemplars. Typical for

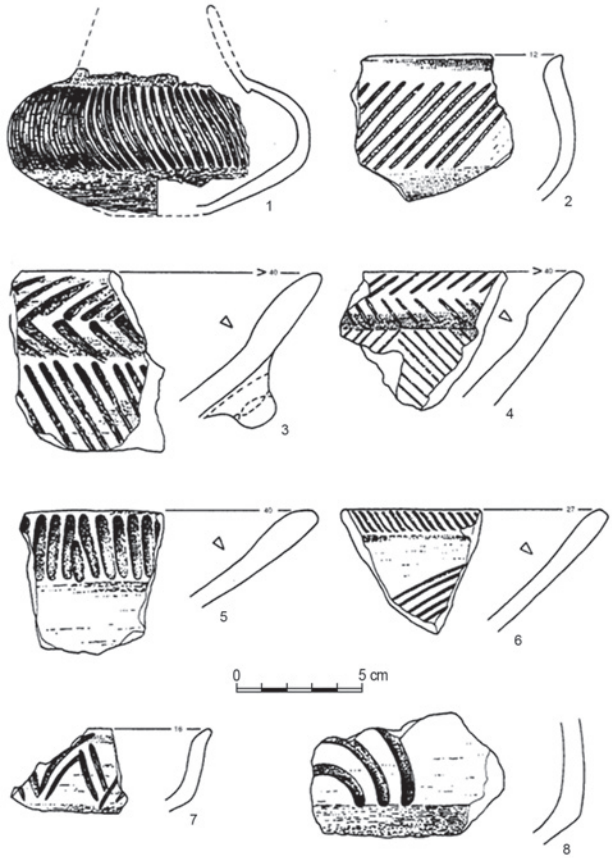


Fig. 58: Ilıpınar Va. Black burnished and channelled sherds (after Özdoğan, Başgelen 1999, fig. 8).

this horizon are pointed sharp-sided impressions in the highly compacted surface (Thissen 2001, fig. 65/6). In Ilıpınar VI, a red slip characteristic of the Balkan Early Neolithic occurs. Additionally, a broad incision decoration is typical for Ilıpınar VI, the lines of which are themselves burnished (Thissen 2001, fig. 64/2–5). Concentric bows set above the break on the vessel's body predominate as motifs (e.g. Thissen 2001, fig. 62/15). Small knobs may now be found directly on the vessel rim (Van As, Jacobs, Wijnen 2001, fig. 7/6–9). The forms from Ilıpınar Va largely correspond to those of Layer VI. Nevertheless, globular bowls with narrow mouths or cylindrical necks now possess strap handles applied either to the body or to the shoulder (Thissen 2001, figs. 72/4; 73/5; 74/1, 5). The burnished incisions with occasional bow motifs still remain among the fine ceramics (Thissen 2001, figs. 70/2; 71/2–3; 76/3; 77/5). With Ilıpınar Vb, a stage reflecting the Bulgarian-developed Neolithic is finally reached.[17] The

17. According to the absolute dates available, this roughly corresponds to the mid-6th millennium calBC (Thissen 2008, fig. 10).



Fig. 59: Ilıpınar IX and VIII. Settlement plan (after Roodenberg 1995, fig. 19).

most vital indicator of this is the appearance of characteristic, very fine channelled decorations, which denote the horizon of Karanovo II and Ovcharovo-Gorata in the north (Thissen 2008, figs. 5/1, 3–5, 7; 8/6–7; 9 [P.26, P.29]) (Fig. 58). Nevertheless, the pertinent forms at Ilıpınar are rather wide, embouched forms, while this horizon is characterised by narrow beaker forms within the eastern Balkans. More comparable with one another are the large, bulbous vessels already appearing in Ilıpınar Va with vertically constricted necks and handles attached to their sides (cf. Thissen 2001, figs. 73–74. – Van As, Jacobs, Wijnen 2001, fig. 1/3–4. – Thissen 2008, fig. 3). Further similarities between Ilıpınar Va and Ovcharovo-Gorata may be demonstrated in the bowls, particularly among examples with a wide incised or impressed adornment (cf. Thissen 2001, figs. 75/9–10; 76/1). Finally, also striking is the conformity of the channelled bowls from Ilıpınar Vb with those from Ovcharovo-Gorata (Thissen 2008, fig. 8/6–7). In terms of form, connections may accordingly be made between Ovcharovo-Gorata and Ilıpınar Va, but most prominently Ilıpınar Vb.[18] It should thereby have become clear that connections within the Balkan region might first be established by means of pottery during the period of the Balkan-developed Early Neolithic, a chronological horizon which can no longer be associated with the neolithisation occurring within the regions north of the Aegean.

Further telling is the trajectory of domestic architecture at Ilıpınar. The settlement begins with freestanding

18. This parallelisation is also supported by ^{14}C dates from both sites (cf. Chapter 10; Roodenberg, Schier 2001).

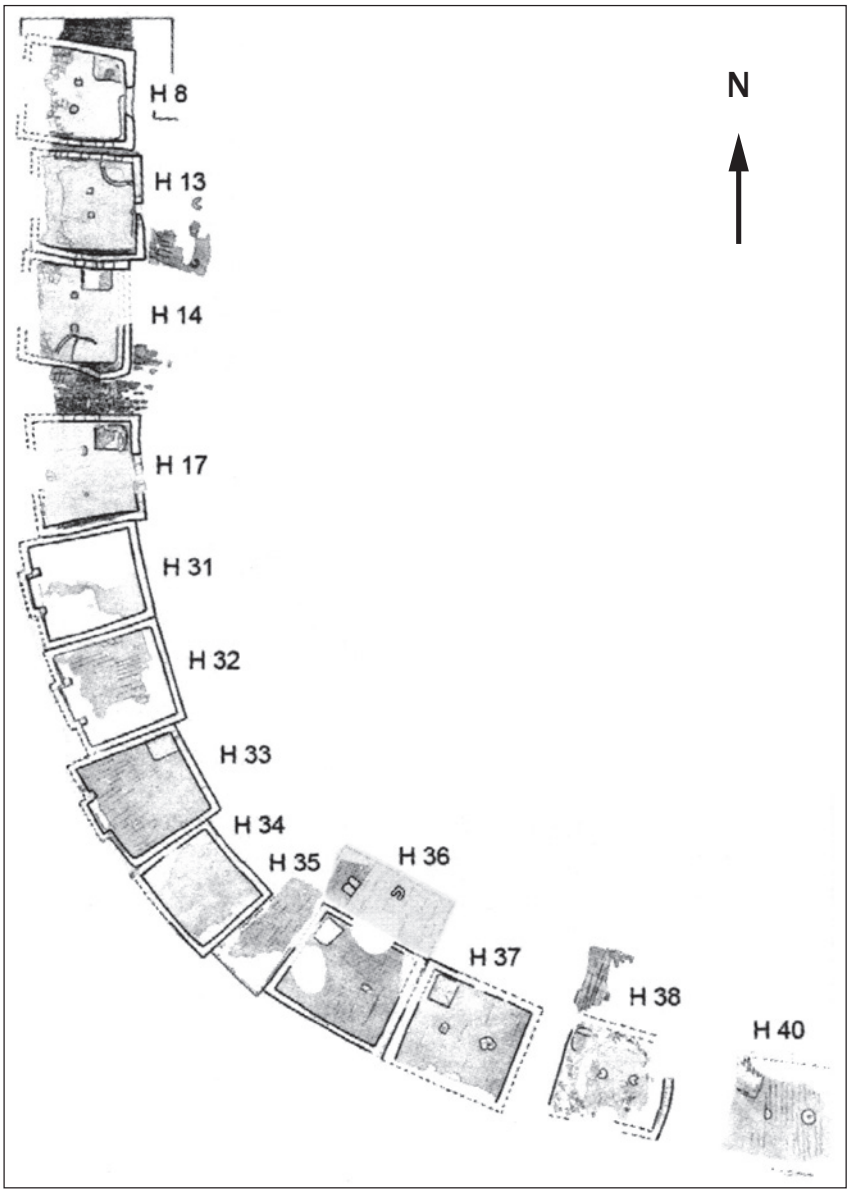


Fig. 60: Ilıpınar VI. The so-called 'boundary' buildings (after Roodenberg, Alpaslan Roodenberg 2013, fig. 4).

wattle-and-post buildings (Roodenberg, Alpaslan Roodenberg 2013, fig. 3. – Roodenberg 2012, 224–226) (Fig. 59). From Ilıpınar VI onwards, these develop into characteristic airdried mudbrick terraced houses built against one another in a distinctive crescent plan (Roodenberg 2012, 226–228. – Roodenberg, Alpaslan Roodenberg 2013, figs. 4–7) (Fig. 60). Here a completely independent tradition of architectural form reveals what might only be deduced from the Aegean coastal zone's tradition of freestanding structures on stone foundations with difficulty. Jacob Roodenberg recognises a transformation in economic model as underlying the new settlement plan at Ilıpınar. The increased production of grain, for example, demanded a new type of house where stores might be kept (Roodenberg 2012). It is quite possible that this building tradition might have exerted some influence further north at a later date as some of the settlements exposed on a larger scale within the eastern Balkans display generally comparable settlement structures, as will be later demonstrated. Nevertheless, this might also reflect a phenomenon of sheer unrelated convergence, as no direct relationship can presently be evidenced. Moreover, the tradition of construction, particularly with airdried mudbricks, does not seem to have penetrated the Balkans during the Early Neolithic.

The trajectory already described for Fikirtepe and Pendik, which might precede the tell of Ilıpınar, can be further

assumed for Menteşe lying south of Lake İznik (Roodenberg 1999. – Roodenberg et al. 2003). The third and earliest settlement layer was subdivided by the excavator into lower, middle, and upper occupation levels (Roodenberg et al. 2003, 19–20), corresponding in total to the development from Archaic to Classical Fikirtepe (cf. Schoop 2005, 206). Should the advent of the earliest ceramic complexes in South-eastern Europe be assumed to have first occurred somewhat parallel to Ilıpınar VIII, then the entire trajectory of the phase Menteşe 3 must have taken place prior to this. Ulf Schoop associates the upper settlement layer of Menteşe 3 with Ilıpınar X. Tellingly, a few sherds with painting already appear within the otherwise monochrome ceramic milieu of Menteşe 3 (Roodenberg et al. 2003, fig. 17/7), which might be interpreted as a further indication that the earliest pottery in the Balkans, to be dated later and also termed "monochrome ceramic", should be viewed critically. After a caesura of considerable duration in settlement termed Menteşe 2, the site is inhabited once more during the developed Chalcolithic. Finds such as biconic bowls with characteristic wide incised motifs in the form of concentric bows or triangular brackets set on top of one another permit a parallelisation of Menteşe 1 with Ilıpınar Va (Roodenberg 1999, figs. 12/7–14; 13/7).

The domestic architecture of Menteşe reflects that found within the earlier layers at Ilıpınar, consisting of free-standing wattle-and-post structures (Roodenberg, Alpaslan Roodenberg 2013, fig. 9). The discovery of an entire graveyard of inhumations with crouched burials (Roodenberg, Alpaslan Roodenberg 2013, figs. 11–16) confirms that the burials at Barcın Höyük hardly serve as an isolated example, but rather as the rule within the Marmara region. In contrast to the Aegean sphere, but also to the entire Balkans, the dead were buried near the settlement in an additionally installed graveyard.

Since 2004, the University of Istanbul has conducted excavations together with the Archaeological Museum of Bursa at the complex, multi-layered site of Aktopraklık by the village of Akçalar, some 25 km west of Bursa, on the eastern bank of Lake Ulubat (Karul, Avcı 2013).[19] This comprises a level Chalcolithic settlement (A), a Chalcolithic tell of at least four layers (B) and a further, multi-level Neolithic settlement overlaid by a Chalcolithic graveyard (C) (Karul 2006. – Karul 2007. – Karul 2008). According to the excavator Necmi Karul, the site presently displays the following stratigraphy: the finds of the single level of Aktopraklık A may be parallelised with those of Ilıpınar Va. The site of Aktopraklık B neighbouring to the north is connected to this settlement layer but is overlaid by levels with Ilıpınar Vb material and, above these, a heavily perturbed horizon. Finds from material at the foot of the mound to be associated with Ilıpınar VIII may suggest an even earlier settlement which has not yet been able to be adequately researched. A few vessels also originating from this level might be compared to those of Yarımburgaz due to their characteristic incised decorations (Karul 2006, 126, above. – Karul 2007, fig. 6). Somewhat apart from the tell lies the grave field appertaining to the Chalcolithic settlement, beneath which a Neolithic settlement of at least two strata might be found (Aktopraklık C), which Karul associates with Ilıpınar IX–X or Archaic Fikirtepe. Large numbers of the finds from the later levels of Aktopraklık B display similarities to material from Ovcharovo-Gorata and Dzhulyunitsa IV, which holds, in fact, more weight than the finds from Ilıpınar Vb, as hardly any impression decorated pottery is known from the latter. Albeit the amount of impression adorned pottery has already reduced in comparison to the Balkan Early Neolithic, it is attested in greater numbers in the material from Ovcharovo-Gorata. Taking this into account, the absence of impression adorned sherds in the material from Ilıpınar Vb poses a problem for the parallelisation of the both sites. Within the material from Aktopraklık B, an adornment with wide incised bands filled with small, angular incisions can be added (Karul 2007, fig. 5, below left), a mode of decoration also reminiscent of the incisions organised into bands from Ovcharovo-Gorata.

One peculiarity is a red-slipped vessel inlaid with small, white limestone beads (Fig. 61). There are signs of such beads being produced at Aktopraklık (Karul, Avcı 2013). The find is remarkable because it shows us a durable type of white-on-red decoration. Unfortunately, the piece is unique until now, and so it remains uncertain whether it is the archetype for the technique of white-on-red painting of ceramics.

The large-scale excavation of Aktopraklık B demonstrates a form of mudbrick buildings constructed tightly against one another in a crescent as already known from Ilıpınar. Within their interiors, the individual domestic units display pilasters supporting the roof (Karul, Avcı 2013, figs. 12–15, 17). Further structures, sometimes free-standing, may be found both inside the settlement and outside the half-circle. A very wide ditch plastered with lime mortar runs between the settlement areas (Karul, Avcı 2013, 49–50, fig. 14), the function of which remains enigmatic. The

19. In 2006, the present author had the opportunity to visit the excavations while they were underway. He thanks the excavation director Necmi Karul for information about current work and results and, additionally, for the opportunity to study portions of the find material in the excavation house in Akçalar and in Istanbul.



Fig. 61: Aktopraklık B. Red slipped vessel with limestone bead inlays from a burial (after Karul, Avcı 2013, fig. 20).

settlement of Aktopraklık B thereby presents the prototype of a settlement of the Late Neolithic-Early Chalcolithic within the area of the Marmara which, while attestable at many sites within the region, cannot be derived from either the Aegean or the Neolithic of southern Anatolia. Individual finds of sherds with impresso adornments or a coating of red paint (Karul, Avcı 2013, fig. 19) and obsidian tools (Karul, Avcı 2013, fig. 21), do certainly indicate connections with the maritime network of the Aegean zone. Nevertheless, these are not so numerous that it might be concluded that Aktopraklık was itself directly involved in this network of exchange. On account of the black burnished ware, Brami and Heyd envision a direct connection of the Early Neolithic in the Marmara region with the south-western Anatolian littoral (Brami, Heyd 2011, 178–179).

Hence, a multifaceted Neolithic might be encountered in the Marmara zone, this possessing its own architectural tradition of wattle-and-post buildings built tightly against one another in a crescent and a specific form of burial in discrete graveyards which nevertheless are only periodically related to the neighbouring region to the south. As to whether the impetus for the neolithisation of the Marmara region must have originated from outside can at the very least be questioned on the strength of the finds from Çalca and Musluçeşme. Close connections are displayed there with the region east of them (next to be discussed), although this area is little studied in comparison. The region of the Marmara evidently no longer partook in the maritime networks of the north-eastern Aegean, despite recurrent finds demonstrably from this region. The ties to the Balkan sphere (very much of interest here) are first evident and numerous during the phase of the developed Early Neolithic in the Balkans, so that this region cannot have played an important role in the Balkans' neolithisation in spite of its close proximity.

3.8. The Porsuk-Sakarya Region

On account of its propinquity to the Marmara region and its location on the south-western shore of the Black Sea, the role of the Porsuk-Sakarya region should also be studied as a potential impetus for the neolithisation of the Balkans. Due to the upper course of the Sakarya and the Porsuk (its most important tributary), the region lies geographically closer to the south-western Anatolian maritime region and possesses a good communication route to the eastern Balkans through the estuary of the Sakarya into the Black Sea. A methodological problem is posed by the fact that little to no architectural forms are preserved from this region, so that only a comparison of ceramic forms might currently be made.

Only a few ceramic finds are known from the site of Keçiçayırı, which the excavators generally place in the period prior to Classical Fikirtepe (Efe, Gatsov, Nedelcheva 2012, 228–229 and figs. 9–10). Stratigraphic observations suggest that a further level might be found beneath this, although producing only stone tools and lacking ceramic finds (Efe, Gatsov, Nedelcheva 2012, 229–230). Taking these artefacts as a point of departure, discussion has also emerged in respect of an autochthonous development of the regional Neolithic. Brami and Heyd also consider this material as heterogeneous in contrast to finds from Çalca and Musluçeşme, and believe it emphasises most prominently the breaks in the cultural trajectory leading to the Neolithic (Brami, Heyd 2011, 186–192).

A broader spectrum of vessel pottery forms has been published from the settlement of Orman Fidanlığı (Efe 2001). From markedly apparent connections to Hacılar in the south-western Anatolian Lakes region and (most prominently) the parallelisation with Levels VI–Vb at Ilıpınar, the lowest strata of Orman Fidanlığı I–V may be chronologically ascribed to the second quarter of the 6th millennium BCE (Efe 2001, 57–61. – Schoop 2005, 297–298); this, in turn, reflects the absolute dating of Ovcharovo-Gorata and Dzhulyunitsa IV in northern Bulgaria. Beyond the general similarities, for example among the various bowl forms (Efe 2001, figs. 1, 2/12–23) and globular bowls with narrow mouths (Efe 2001, figs. 3/33–35/43), only a very few parallels may be evidenced within the find material. Globular, slightly carinated pots with constricted necks, as are typical in Orman Fidanlığı I–V (Efe 2001, figs. 3/41–51; 4/52–57; 6/115; 7; 10/168–171; 14/242–246), are entirely missing in the material from Ovcharovo-Gorata. On the other hand, the channelled beakers characteristic of the eastern Balkan region are not

attested anywhere within Anatolia. The striking similarity of individual vessels from both sites such as in the case of a few globular bowls (cf. Efe 2001, fig. 6/109), the motif of a circumferential row of incisions at the break of a carinated bowl (cf. Efe 2001, fig. 1/12), or the circumferential fir branch or fish scale incised pattern appearing at both sites (cf. Efe 2001, fig. 11/187–189) permit the recognition of a shared zeitgeist, in spite of all other disparities. Interestingly, the side strap handles found almost exclusively on beakers at Ovcharovo-Gorata find excellent counterparts in Orman Fidanlığı I–V, although on highly varied vessel forms (cf. Efe 2001, figs. 1/13; 3/33; 8/125; 11/180; 14/239–241; 15/252). Remarkable also is the appearance of red and dark painting on some vessels of the earlier levels of Orman Fidanlığı I–III (most noticeably), as almost exclusively monochrome ceramics are known from the Marmara region neighbouring to the west. It is therefore exciting to recognise a further parallel, inasmuch as only linear motifs appear at Orman Fidanlığı, just as is the case at Ovcharovo-Gorata.

A large quantity of Neolithic-Chalcolithic finds was unearthed within the Early Bronze Age site of Demircihüyük (Seeher 1987). This may be explained by the removal of an earlier settlement mound by the Bronze Age population in order to use its sediment in the construction of walls and houses. For want of stratified observations, Seeher divided the material into various groups of wares ranging from A to E, these dating from the Neolithic to the Middle Chalcolithic. By means of comparison with other, stratified sites, the ceramics could successfully be ordered within a relative chronology. For the so-called *Schieferware* A, Seeher recognises parallels with the lowest levels of Çatalhöyük-East (Seeher 1987, 46–48). He dates the so-called *Glimmerware* B to somewhat later, locating it chronologically somewhere between the upper levels of Çatalhöyük and the Late Neolithic levels of Hacılar (Seeher 1987, 48–49). On the other hand, he also recognised certain parallels of Ware Group B with the Fikirtepe Phase (Seeher 1987, 49–50). The forms of Wares A and B partially display grooved rims and the characteristic fine incised decoration so that at least part of the material must be understood as contemporary with Fikirtepe. Also ascribed precisely to Fikirtepe is Seeher's Ware C which presents a comprehensive type spectrum with box-shaped vessels and S-profiled bowls (among other examples). By means of contrast, Schoop considers a unified dating of Wares A–D to a phase with Archaic Fikirtepe as likely, thereby excluding an earlier dating for only Wares A and B from Demircihüyük (Schoop 2005, 295). The red painted Ware D and the so-called *Steingrus Ware* is also associated by Seeher with Hacılar without attempting any closer precision of this dating within the trajectory (Seeher 1987, 50–51). The appearance of so many painted sherds in a region otherwise displaying an overwhelmingly monochrome Neolithic-Chalcolithic production is remarkable regardless. It might be speculated as to whether the red painted Ware D belongs within a later context, such as among the Late Chalcolithic Wares F and G, as it seems quite foreign to Fikirtepe's cultural milieu. Presumably, this should instead be associated with the red painted vessels from Orman Fidanlığı I–III, although this would also result in a markedly later date. In respect to the ceramic sequence of Ilıpınar, a large number of the forms of the *Steingrus Ware* E may also easily be associated with Phase VIII there, if one considers, for example, the numerous impression-decorated sherds, which are not yet attested at Fikirtepe (Seeher 1987, pl. 21/1–10. – This was already noticed by Schoop 2005, 296). The characteristic false lugs and the very typical stepped incised motif of the Yarımburgaz facies are to be added here (Seeher 1987, pls. 20/24–25; 21/17–19). Two S-profiled pots adorned with curved incised motifs could be even later, if they were to be compared with similar forms from Ilıpınar VII–Va (cf. Thissen 2001, figs. 62/14–15; 63/5–8; 70/2–5; 71). Accordingly, the trajectory stretching from Classical Fikirtepe to Ilıpınar VIII seems at the very least present at Demircihüyük.

3.9. The Marmara and Porsuk-Sakarya Regions as a Barrier between the Neolithic Cultural Trajectory in Western Anatolia and the Balkans

The documented archaeological record within the Porsuk-Sakarya region is thus somewhat sparse in contrast to the region of the Marmara. Nevertheless, the essential connections may still be ascertained from the scarce information available from the ceramic finds. In a sense, the region stands between the Neolithic of the south-western Anatolian Lakes region and the area of the Marmara, which might, after all, be expected in light of its geographically intermediate location. Here, the site of Keçiçayırı also provides a basis for a discussion as to the for and against of an autochthonous development of the local Neolithic. Despite the natural access to the Black Sea, the connections most pertinent to the Balkan region are sparse and only concern the developed Early Neolithic of the Balkans, much as in the case of the Marmara region. Hence, no direct impetus for the neolithisation of South-eastern Europe would seem to have emerged from either the region of the Marmara or that of the southern coast of the Black Sea to the east. Rather, the earliest Neolithic material from the Balkans seems tied to the cultural sequence of central western Anatolia and north-western Anatolia. The Neolithic on the north-western edge of the Anatolian landmass would thus seem to serve as something of a barrier

between the cultural development in western Anatolia and the Balkan region. All demonstrable connections strangely avoid the natural land bridge between the two continents. Should the area of the Marmara and the southern shore of Black Sea be eliminated as an intermediary for cultural contact between western Anatolia and the Balkans, then a transmission via the Aegean must be supposed, which, in turn, could only have occurred by seaways. Favouring this would have been if the Neolithic groups of central western Anatolia and the Aegean had naturally come into contact with the northern coastal zone of the Aegean while the groups of the Marmara and Porsuk-Sakarya regions were evidently unable to establish any sizeable sphere of interaction by means of their strictly overland communication system.

3.10. Thessaly

The transition from Mesolithic to Neolithic, similar to the neolithisation process more generally, has been comprehensively studied in previous years (Alram-Stern 1996. – Perlès 2001. – Reingruber 2008 and the further literature cited in their bibliographies). Hence, only a brief summary of the most important discoveries need be outlined here. A reassessment of the settlement sequence of the Thessalian tell settlements has contributed to a fundamentally new understanding of the process of neolithisation in the western Aegean. On nationalistic grounds, an autochthonous emergence of the Neolithic in Greece had long been presumed (cf., e.g. Theocharis 1973). As an argument for the great antiquity of the Neolithic, the existence of a Pre-Pottery Neolithic was postulated not only for Crete or similar, but also for the mainland and (more precisely) for Thessaly (Milojčić 1960). A review of the excavation documentation of the so-called 'Kreuzgraben' at Argissa-Magula by Agathe Reingruber has revealed that the lowest 'aceramic' levels at this site are indeed a fully realised Neolithic with pottery (Reingruber 2008, 134–147). The Neolithic trajectory in Thessaly accordingly begins at 6400 calBC with monochrome pottery, partially red-slipped, which appears just prior to this in western Anatolia. This detail alone demonstrates a clear dependency of the neolithisation process on the Greek mainland upon developments in the east. At Argissa-Magula, this corresponds to the lowest settlement levels of 31–28b, designated as Early Neolithic I (Reingruber 2008, 155–156). Following this, within Layers 28a–25 is the so-called Early Neolithic II with blacktopped ceramics and earlier painted pottery with simple triangular patterns and (in addition) both red and white coatings of paint. Following 6000 calBC, impresso ceramics appear in Thessaly for the first time with the Early Neolithic III and with Settlement Layer 24 at Argissa-Magula (Reingruber 2008, 213–219). Also valuable is the statistical assessment of the decorative techniques and painted motifs from Achilleion which demonstrate that pinkish-, grey-, and tan-slipped pottery occurs at the outset of the ceramic trajectory, this being successively replaced by dark red brown-, red buff-, and ultimately red- and orange-slipped ceramics (Gimbutas, Winn, Shimabuku 1989, fig. 5/1–5).

A transformation may also be charted in domestic architecture. While the earlier Early Neolithic levels are characterised by buildings constructed from posts, wattle, and daub, mudbrick architecture is established after 6000 calBC. Developments are similar at Achilleion, although the mudbrick structures there were erected upon stone foundations (Gimbutas, Winn, Shimabuku 1989, fig. 4/5). Otzaki has been revealed to have had much larger brick structures with columns along the interior walls serving to support the roof (Sinos 1971, pl. 17, fig. 43. – Perlès 2001, fig. 9/3). This detail also hints at influence from regions east of the Aegean.

3.11. Greek Macedonia

It is only recently that certain sites have been identified in which Neolithic settlement begins as early as in Thessaly, that is, already in the mid-7th millennium BCE. The sequence of radiocarbon dates from the site of Mavropigi-Filotsairi already begins at 6400 calBC (Karamitrou-Mentessidi et al. 2015). Two earlier dates must be treated with caution on account of their isolated position. The material from Paliambela-Kolindros and Revenia Korinos should be of similar age (Urem-Kotsou et al. 2014). This comprises of monochrome, partially red-slipped vessels with plain forms, among these spherical pots and bowls with simple feet or only slightly pronounced ring bases. Interestingly, impresso-adorned wares already appear with the earliest ceramics (Karamitrou-Mentessidi et al. 2015, figs. 31–34. – Urem-Kotsou et al. 2014, fig. 2). Should this mode of adornment have established itself earlier in Greek Macedonia than in Thessaly on account of maritime contact? At Nea Nikomedeia, a site studied for a longer period, a three-phase development may be evidenced, wherein the pottery largely corresponds to that from Thessaly (Reingruber 2008, 392–399).

Nevertheless, in contrast to Thessaly, no alteration in the architectural form of houses may be discerned for the entire Early Neolithic trajectory. This development begins with wattle-and-daub structures (Karamitrou-Mentessidi et al. 2015, figs. 4–15) and continues thereafter as such (Perlès 2001, fig. 9/1). Quite evidently, sufficient wood continued to be available for the construction of houses here.

3.12. The Sub-Mediterranean-Aegean Biogeographic Region

Should the location of the Early Neolithic sites in South-eastern Europe be considered, then the earliest of these can be found to have been distributed almost entirely within a specific biogeographic area. This is a zone described by Pavle Cikovac (Cikovac 2002, 22–25) as the Sub-Mediterranean-Aegean Biogeographic (SMAB) region. This encompasses the whole northern and north-western edge of the Aegean, namely Thessaly, Greek Macedonia, and Greek Thrace, only penetrating the interior of the Balkans along the river courses of the Axios/Vardar, Struma, and Mesta respectively (Fig. 62). Within the Republic of North Macedonia, only the zone of the Vardar proper and northern Pelagonia are included in this. In Bulgaria, this is restricted to the narrow banks of the rivers Struma and Mesta, a canyon-like landscape opening southwards to the Aegean. The barrier of the mountain ranges of the southern Balkan zone consisting of the Rhodopes, Pirin, Rila, Belasitsa, Osogovska Planina, Sredorek, Suva Gora, and many other small Macedonian mountains (all over 2000 m, Musala in the Rila reaching 2925 m) prevent a dissemination of the influence of the Mediterranean climate further inland (cf. Cikovac 2002, 25, although therein in respect to the Adriatic-Mediterranean zone). Accordingly, subtropical flora is only distributed within the Thessalian basin, in the broad coastal zone of Greek Macedonia, and in the three aforementioned river valleys. Notable are most prominently thermophile species such as the semi-evergreen Macedonian oak (*Quercus trojana*), the European hop-hornbeam (*Ostrya carpinifolia*), the Oriental hornbeam (*Carpinus orientalis*), and the manna ash (*Fraxinus ornus*) (Cikovac 2002, 25). Nevertheless, the maps plotted by Cikovac (primarily for the Dinarides) do not reproduce this. It might be presumed that the SMAB zone extends somewhat further north until approximately the edge of the Istranca/Stranzdha range, as some of the tree species mentioned are spread as far afield as Edirne. Nevertheless, it is less likely that the sub-Mediterranean zone exceeds the present-day border with Bulgaria in scope.

The SMAB zone is conceived of as somewhat broader than the region of the natural distribution of the European olive tree (*Olea europaea*) (Zohary, Hopf, Weiss 2012, map 15), which strikingly comprises those areas which participated in the previously described networks of the circum-Aegean Neolithic. While the olive tree was first cultivated significantly later, what is pertinent here is initially the area with optimal conditions for farming, as the theory might be proposed at this juncture that this roughly accords with the area of distribution of typical Mediterranean crops. The distribution of the wild olive tree now covers the narrow coastal zone of western Anatolia, from Greek Macedonia merely to the peninsula of Chalcidice, the eastern part of Thessaly and, moreover, the Greek mainland south of the Pindos and, naturally, the Aegean Islands.

The wild fig tree (*Ficus carica*) extends only a little further north (Zohary, Hopf, Weiss 2012, map 17). This area encompasses the southern edge of Turkish Thrace, the broad shore of the northern Aegean up to the Rhodopes, and mainly the entire Greek mainland, with the exception of Pindos. The original region of distribution of the olive and fig trees seems thereby to denote the regions that were ideal for the agrarian lifestyle of the Early Neolithic. Those parts of the Greek mainland lying within the limits of the distribution of the olive and fig trees were accordingly already neolithised during the 64th century BCE, most likely from the direction of western Anatolia (Reingruber 2008, 613–616). Discussion about a further area of origin for the Neolithic lifestyle in Greece, tied to the debate over a Pre-Pottery Neolithic find horizon in Thessaly with specific recourse to the earliest levels of occupation at Argissa-Magula, seems thus to have been presently concluded (Reingruber 2011). Newer radiocarbon dates from Franchthi are evaluated by Catherine Perlès as suggesting a possibly earlier neolithisation of the Peloponnese which should therefore have occurred contemporaneously with that of Crete (Perlès, Quiles, Valladas 2013. – See also Brami, Heyd 2011, 182). However, the focus of this discussion is thus relocated so far south that it becomes ever less pertinent to the neolithisation of the Balkan region.

The natural distribution of the wild grapevine (*Vitis vinifera*) might be assumed to be the geographically limiting factor for the northerly dissemination of the Aegean Neolithic, this being from roughly the 4th millennium onwards among the most important cultivars in the region. In the Early Neolithic, cultivation of the grapevine can hardly be assumed to have already occurred, but the theory whereby the earliest Neolithic of the Balkan region departed from those zones presenting ecological preconditions similar to the Aegean sphere can potentially be charted by means of the wild form of the grapevine. In addition to the Mediterranean in the broadest possible sense, the original region of distribution for the grapevine further encompasses the entire shoreline of the Black Sea (Zohary, Hopf, Weiss 2012, map 16). In South-eastern Europe, the axis of the northernmost distribution of the wild vine follows the coastal strip of the Black Sea, then runs westwards roughly through the middle of the Thracian Plain, following thereafter the north-eastern edge of the Dinarides up to the start of the Slovenian Alps. This region of distribution accordingly comprises the Dobrudja, eastern Thrace, the Rhodopes, North Macedonia, except for the northern

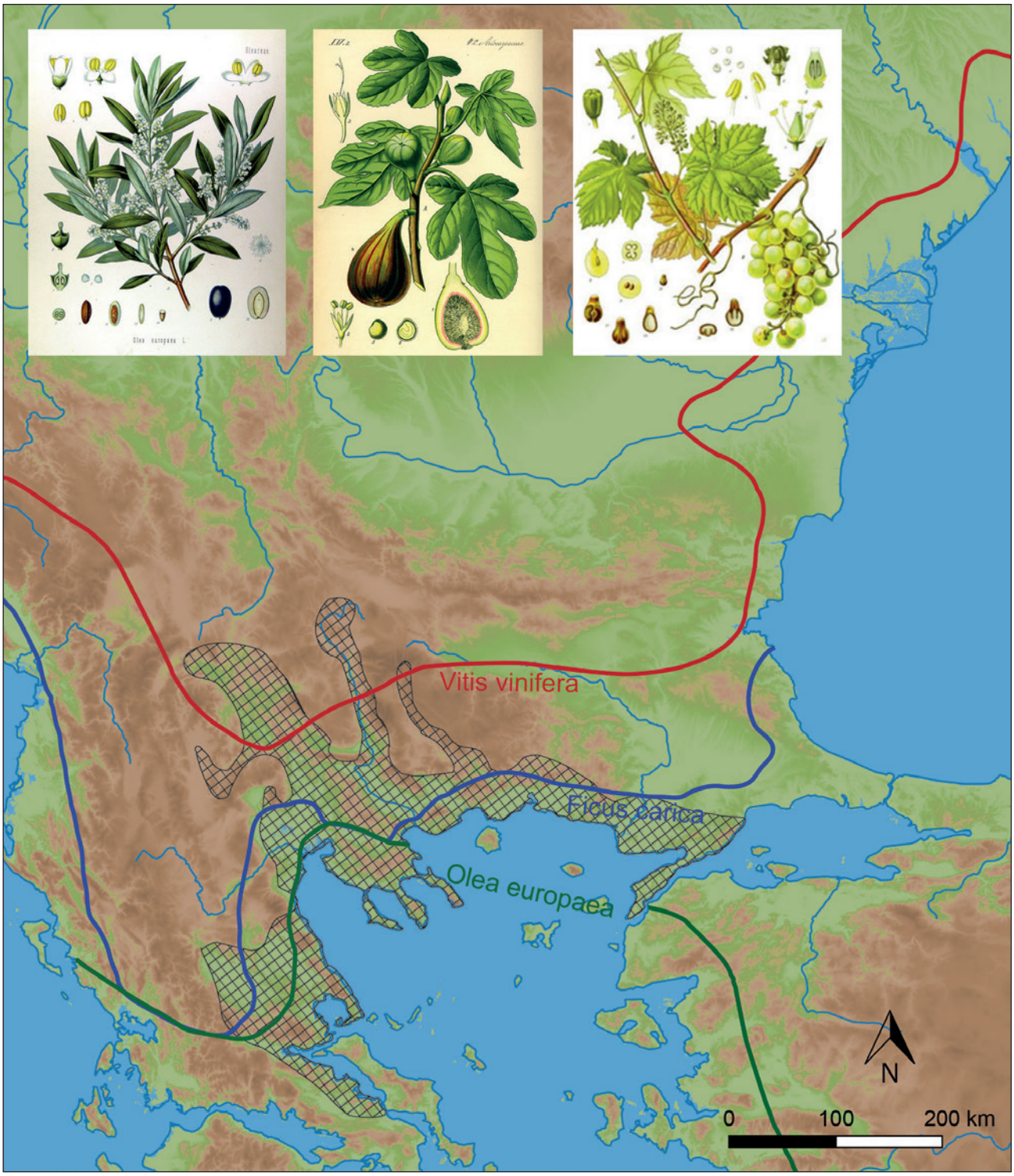


Fig. 62: Sub-Mediterranean-Aegean biogeographical region (hatched) (after Cikovac 2002, fig. 2/8) and the northern border of the distribution of wild grapevine (red), fig (blue) and olive tree (green) (after Zohary, Hopf, Weiss 2012, figs. 15–17).

Vardar zone, Albania, Montenegro, western Bosnia, Dalmatia, and Greek Macedonia. In contrast to the narrower sphere within which the olive tree was distributed, a parity in coverage with the diffusion of the Neolithic can only be occasionally ascertained, and the question arises as to why this might be.

3.13. Early Agriculture and Husbandry in the Sub-Mediterranean-Aegean Biogeographic Zone

Accordingly, allow the Neolithic economic mode and, furthermore, how it developed within the regions of the Fertile Crescent and was propagated over the course of the 7th millennium BCE up to the Aegean to be considered. This refers to an economic model that can mainly occur within differing geographical regions suited to the planting of steppe grasses and pasturage of artiodactyls. Initially chosen for settlement were open landscapes permitting the practice of agriculture without clearing woodland. A veritable challenge for the earliest agriculture would have been the protection of the sown seeds, a requirement generally compelling sedentism among early farmers (Uerpmann 1990). A climate advantageous for the Neolithic economic system should permit multiple sowings and harvestings per year with brief periods of growth and ripening. This first necessitates an appropriately warm climate in spring but also sufficient precipitation. First and foremost, winter in the regions north of the Aegean must have been a genuine threat to the agrarian subsistence. While the spread of the Neolithic in the Mediterranean region is within the same climate zone and largely a uniform vegetation zone, the spread to Central Europe by land also means a change to a different climate zone and across different vegetation zones. South-eastern Europe lies in the temperate continental climate zone, which differs from the Mediterranean climate zone in particular by colder and longer winters. The temperature pattern during the rest of the year, however, is comparable in both regions. That there is a higher amount of precipitation should even have a favourable effect on the cultivation of cereals. The harsher winters, on the other hand, remain problematic as they would be a challenge for the seeds and possibly also for the survival of the herds. Therefore, it only follows that the earliest Neolithic is to be found in those regions lying directly within the SMAB zone and, most vitally, is not subjected to bitter winters. Field weeds provide an indication of the time of sowing of the cereals. Among the potential weeds of the investigated Neolithic settlements in Bulgaria, those that have a focus on winter sowing are common. Studies from Elena Marinova on the potential field weeds indicate that at least at Kapitan Dimitrievo and Karanovo a sowing of grains in autumn was practised (Marinova 2006, 87). Tellingly, both of these sites lie within the Thracian Plain, which was only neolithised at the beginning of the 6th millennium BCE. The shift from an exclusively winter sowing to summer sowing could have taken place during the decisive centuries around the turn of the 7th to 6th millennium BCE, permitting only then the settlement of those regions with harsh winters.

While hardly a comparable existential threat, the regions with a harsh winter climate must have suffered from a less than beneficial effect upon animal husbandry. Within the yearly cycle, the alpine pastures on the high mountains of the southern Balkans would certainly have provided ideal grazing from late spring until autumn, but, nevertheless, the system would have become hazardous during winter. This is also the reason why seasonal transhumance could be encountered here well into the historical periods, within which the grazing animals could winter within the sheltered spaces of the mountain valleys or on the mild littoral of the Mediterranean (Beuermann 1967).

Proceeding from the maritime networks of the Aegean, the SMAB region still remains best suited to the Neolithic economic model. Consequently, those regions lying within the natural zone of distribution of the Mediterranean and then the sub-Mediterranean flora were first neolithised. Probing further northwards, next followed the SMAB zone along the river valleys of the Axios/Vardar, Struma, and Nestos/Mesta. In order to live solely by means of the Neolithic economic model north of the mountainous barrier of the southern Balkans, the Neolithic package would first have had to be adapted to the prerequisites of the comparatively harsh winters.

4. Neolithisation Processes in North Macedonia and the Struma Valley

The river valleys of the Struma and Mesta initially present themselves as the primary route of diffusion for the Neolithic northwards. While the source of the Mesta/Nestos lies in the Rila Mountains, and the river's passage from its mouth northwards ends as a cul-de-sac in the highlands between Rila and the western Rhodopes, the valley of the Struma presents a corridor open in a north–southerly direction. From the estuary of the Struma in the Thracian Sea to its source in the Vitosha Massif, this river valley provides a natural connection. Together with the course of the Iskar (also fed from the Vitosha but springing from further south in the Rila Mountains), these form the shortest route from the northern Aegean to the Danube. In addition to the SMAB zone which had spread particularly far northwards, the significance of the valley for cultures practising early agriculture and husbandry is thus also demonstrated by its geographical location (Fig. 63).

The Neolithic to Chalcolithic cultural trajectory of the Struma Valley, including the former Yugoslavian and Greek regions, was comprehensively studied by Stefan Čohadžiev (Čohadžiev 2007). He divides the Early Neolithic ceramic trajectory into three developmental stages; these, in turn, are split into further subphases.

4.1. The Upper Struma Valley

Čohadžiev's first phase is presently only attested at the site of Kraynitsi on the northern edge of the Rila Mountains, in the northern section of the Struma Valley (Čohadžiev, Bakamska, Ninov 2007). Characteristic forms of Kraynitsi I, the horizon in question, are conical and half-round bowls, globular pots with straight rims or slightly projecting lips, and tall pots with constricted necks (Čohadžiev 2007, fig. 5). The vessels stand on a simply flattened foot or a slightly raised pot stand (Čohadžiev 2007, fig. 6). Pierced lugs applied to handles are attested (Čohadžiev 2007, 90. – Čohadžiev, Bakamska, Ninov 2007, figs. 7/1; 11/11–12). The fine ceramics are coated with a light red slip which had been smoothed but not burnished. Solely plastic adornments such as fingernail impressions, incisions, or barbotine applications on the vessel body, relief decoration, and dimples on the edges of the lips are attested, while vessel painting, by means of contrast, is not (Tchohadjiev, Bakamska 1990, figs. 10–11. – Čohadžiev 2007, 97. – Čohadžiev, Bakamska, Ninov 2007, fig. 11/1–10). Čohadžiev primarily identifies typological parallels to Kraynitsi I in the material from Polyanitsa-Platoto and Divostin. The subsequent levels of Kraynitsi II and III both already belong to Čohadžiev's Phase II, of which white painting on a red-slipped background is characteristic (Tchohadjiev, Bakamska 1990, figs. 13, 18–21, 23–24).

Within this phase, Čohadžiev further distinguishes between three subphases on the basis of painted motifs. For his Subphase IIa, he cites Nevestino and Vaksevo I–II. At Vaksevo I, extensive white painting, primarily representing triangular and floral motifs, may, in fact, be found, this being typical for the phase of Anzabegovo-Vršnik Ia according to Garašanin (Čohadžiev 2001, figs. 26/2; 27). At Vaksevo II and Nevestino, zigzag lines, triangles filled with crosshatched lines, rows of dots, and the first spiraloid motifs appear, indicating a parallelisation with Anzabegovo-Vršnik Ib and Ic (Čohadžiev 2001, figs. 21–45. – Čohadžiev, Genadieva 1998, figs. 1–2). Following a considerable break in settlement, mound of Vaksevo was resettled during the late period of the Anzabegovo-Vršnik trajectory.

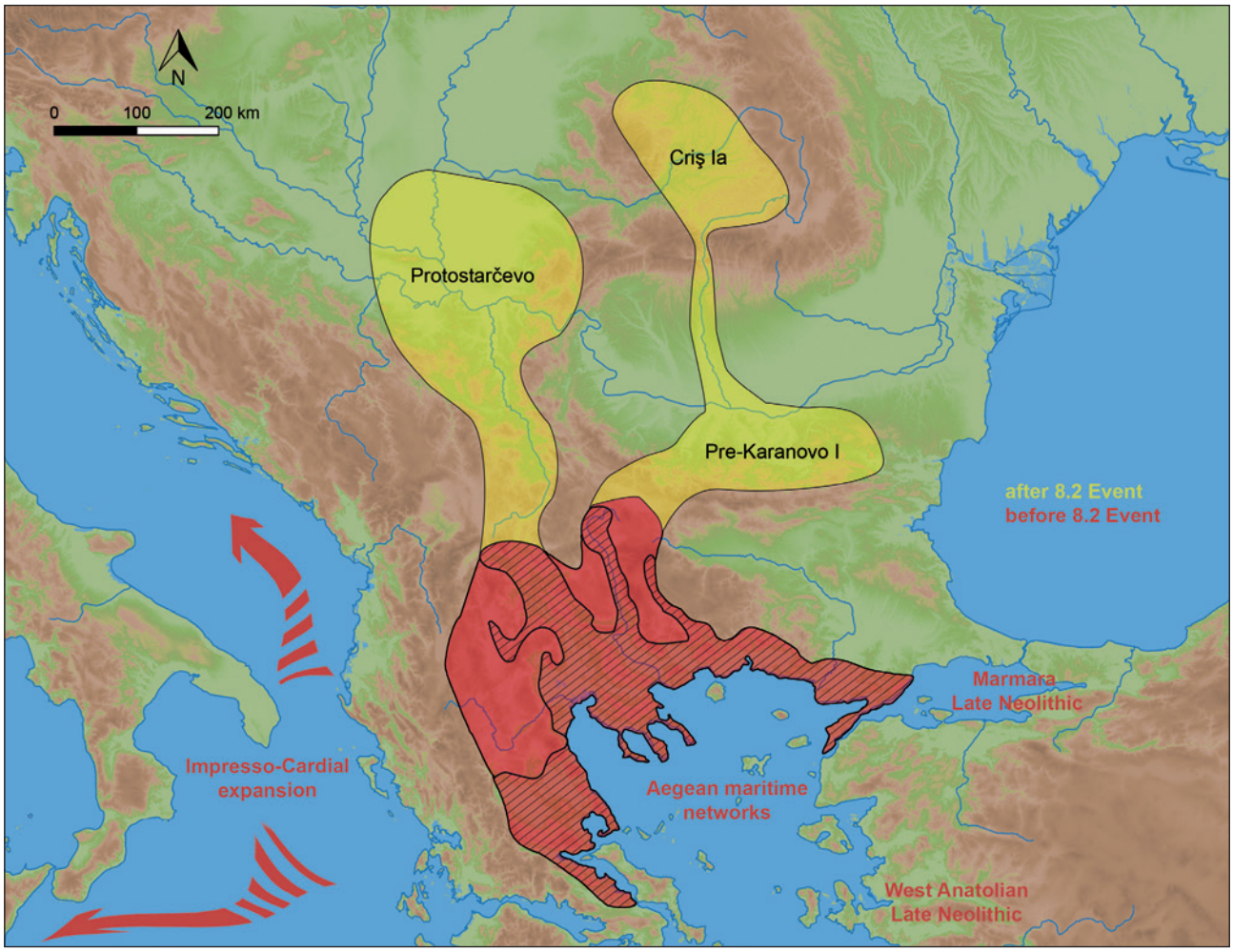


Fig. 63: Neolithisation of the Balkans via the sub-Mediterranean-Aegean vegetation zone during the 8.2 ka event (red). At the end of the first wave of Neolithisation after the 8.2 ka event (yellow), the Proto-Starčevo complex in the central Balkans and the pre-Karanovo I complex (Dzhulyunitsa/Koprivets) in northern Bulgaria and the Criş Ia complex are forming (R. Krauß).

Brown-on-red or brown-on-beige adorned vessels could be overwhelmingly found among the material of Vaksevo III (Čohadžiev 2001, figs. 51–55). Wide spiral motifs predominate, some of these ending in 'claws', a leitmotif of Anzabegovo-Vršnik IV. A clear notion of Čohadžiev's Phase IIb may be gained from the single-stratum settlement of Priboy (Čochadžiev 1986). Here, vessels comprise globular or softly profiled forms with straight-sided or slightly projecting rims. In addition to simply flattened feet, tall, internally hollow vessel feet are preserved, which can also be tripartite. The scarce fragments of painted ceramics display overwhelmingly curvilinear net patterns with white paint. Fragments with dark or polychrome pottery also occur sporadically; the excavator Michail Čochadžiev is nevertheless uncertain whether these are unequivocally to be ascribed to the settlement (Čochadžiev 1986, 44–46, fig. 9). Some forms from the published material may be quite effortlessly integrated into Anzabegovo-Vršnik II according to Garašanin.

Decisive for structuring the form trajectory of the developed Early Neolithic was the stratigraphy of the settlement mound of Galabnik (Pavúk, Čochadžiev 1984. – Pavúk, Bakamska 2021). The site lies in a wide valley split between the foothills of the Vitosha Massif and the Konyavska Planina at the transition to the plain of Radomir in the middle Struma Valley. The excavations over the years 1980–1982 revealed four building horizons, the lowest of which could only be partially excavated on account of groundwater. In a preliminary publication, these stages were summarised as ranging from I to IV (Pavúk, Čochadžiev 1984), while the final publication works with the individual settlement strata, which are also confusingly designated with Roman

numerals from I to X (Pavúk, Bakamska 2021). In the following, I refer to the summary numbering of 1984.

At Galabnik, very well-preserved substructures of houses could be documented. These were post-and-beam structures, some of which still had floors made of wooden planks (Pavúk, Bakamska 2021, 38–66).

The lowest settlement layer Galabnik I yielded white painted ceramics with curvilinear net patterns as is typical for Čohadžiev's Phase IIb (Pavúk, Čochadžiev 1984, figs. 5, 7). In Galabnik II, painting with red pigment on a red or light brown clay surface appears in addition to the continued white painting. Fragments are known which have complex spiral ornamentation, extended triangular motifs filled with stripes, and combined patterns of crosshatched bands (Pavúk, Čochadžiev 1984, fig. 10). White painting is no longer attested for Galabnik III; in its place, painting with black and brown-black to red-brown pigment appears instead (Pavúk, Čochadžiev 1984, 204). The painted motifs reflect the classical repertoire of the phase of Anzabegovo-Vršnik III with groups of parallel lines running vertically down the vessel body and large spiral ornamentations, in the arms of which hatched lines might periodically be encountered. Occurring additionally to these are the "clawed spirals" already indicating Anzabegovo-Vršnik IV (Pavúk, Čochadžiev 1984, fig. 12/1). The find horizon of Galabnik IV then shows predominantly sculptural decorations (Pavúk, Bakamska 2021, figs. 99–100) which are to be connected with Karanovo II in Thrace and Ovcharovo-Gorata in northern Bulgaria. Following Čohadžiev's periodisation, Galabnik II features within his Phase IIIa, and Galabnik III to Phase IIIb. The dark-on-light painting serves as the criterion against which Phase II might be defined (Čohadžiev 2007, 100–101). All in all, the entire development from Proto-Starčevo to the end of the Starčevo culture can be seen within the tell of Galabnik.

Once again, the transition from pure white painting to dark-on-bright painting can be clearly grasped in Pernik (Čochadžiev 1983). The settlement was partially unearthed during a rescue excavation in the winter of 1975/76 by M. Čochadžiev, in the course of which he was able to identify four building horizons. The lowest horizon, only excavated in part, of Pernik 0 produced white, red, and black-painted pottery (Čochadžiev 1983, fig. 30). The painted motifs consist of thin and thick parallel lines and hatched triangles. Almost no typological difference can be discerned within Pernik 1, except that more material could be recovered on account of the larger exposed surface. In addition to the aforementioned motifs, curvilinear nets and large eye patterns are very distinctive (Čochadžiev 1983, figs. 28–29). St. Čohadžiev parallelised this horizon with Galabnik I in his Phase IIc, although the dark painting demonstrably occurs prior to this (Čohadžiev 2007, 91, tab. 7). Essentially no alteration in the painted motifs may be noted between Pernik 2 and the earlier material (Čochadžiev 1983, figs. 25, 27). The completely reconstructable vessels evidence embouched forms with tapering necks, expansive bowls on segmented hollow feet, and carinated bowls on very high foot structures for the first time (Čochadžiev 1983, 22–23, 26). During Pernik 3, thin parallel lines forming stacked bands or extensive net patterns predominate among the painted motifs. In addition to red-on-light painting, white painting remains enduringly popular (Čochadžiev 1983, fig. 20). The completely preserved vessel forms include conical pots and pots with S-profiles, and very sharply profiled, expansive, carinated bowls with a hollow foot bearing chipped decorations (Čochadžiev 1983, fig. 19). St. Čohadžiev considers Pernik 2 and 3 to be parallel to Galabnik II and III. The form development corresponds to his own phases IIIa and IIIb (Čohadžiev 2007, 91 and tab. 7). Holger Schubert assumes a confusion of the material due to the precarious circumstances in which it was unearthed, although he proceeds from an incorrect stratigraphic sequence of the horizon (Schubert 1999, 63–67). Nevertheless, the material seems remarkably heterogeneous, although individual forms such as the footed bowls adorned with parallel vertical lines may be associated with Garašanin's phase of Anzabegovo-Vršnik II without any great difficulty. What primarily seems problematic is the presence of white painted sherds in all horizons of Pernik, while the contemporaneous occurrence of white painting with dark-on-light painting is evidenced from multiple sites within the Struma Valley.

The site of Negovantsi near Radomir can help in clarifying the individual painting techniques during the developed Early Neolithic; here, St. Čohadžiev and Aneta Bakămska have identified two strata with white painted pottery and two further levels above these with dark painted examples (Čohadžiev 2007, 33–34). To judge from the previously published material, the stratigraphy extends from the phase with white curvilinear hatched motifs to that with clawed spirals realised with dark paint and hence from Anzabegovo-Vršnik II to IV (Dimitrov 1996, figs. 5–7. – Čohadžiev 2007, pls. 18–19).

The end of the Early Neolithic trajectory in the northern Struma Valley is marked by the earliest finds from the Late Neolithic mound at Sapareva Banya in the plain of Kremenik (Vandova 2000. – Čohadžiev 2007, 40–41, 92). Among the few finds presently published may be found the best parallels from the Struma Valley with the material from Ovcharovo-Gorata. Particularly noteworthy here are a channelled beaker on a raised foot (Čohadžiev 2007,

pl. 48/2), a handled cup, also channelled (Čohadžiev 2007, pl. 48/3) and with a slight foot, and two cups with lugged handles (Čohadžiev 2007, pl. 48/5–6).

4.2. The Middle Struma Valley

The preliminarily published settlement of Kovachevo in the district of Blagoevgrad is of considerable importance to the subdivision of the Early Neolithic pottery in the middle Struma Valley (Pernitcheva 1990. – Lichardus-Itten et al. 2002b). Four building phases, Ia to Id respectively, could be evidenced for the Early Neolithic. Characteristic of the earliest horizon of Ia within the ceramic material are bowls and pots with standing walls and slightly out-turned lips, and also tall, bulbous pots with necks and vertically pierced knobs on the vessel body. The vessels are only red to red-brown-slipped on the outside. A few pieces are also painted white. The proportion of painted pottery within the entire corpus nevertheless comprises no more than 3% (Lichardus-Itten et al. 2002b, 118). It is highly possible that such a relationship is equally applicable for other sites of the white painted Neolithic pottery. The overrepresentation of painted pottery within the excavation publications is solely the product of the preferential publication of decorated ceramics over the mass of unadorned material which rarely appears in illustrations. The excavators divided the painted ceramics into various stylistic groups from A to I (Figs. 64–71), which were successively replaced and sometimes overlapped for longer periods in the course of the settlement phases (Fig. 72).

Predominant at Kovachevo Ia are simple zigzag patterns, waved bands, and linear motifs accompanied by rows of dots (Lichardus-Itten et al. 2002b, pls. 17–18). The type spectrum of the subsequent phase cannot be fundamentally distinguished from the earlier pottery. The only novelties are some more sharply-profiled bowls tending towards carinated forms. Painting in white on a red- or red-brown-slipped background also continues to be commonplace. Nevertheless, the frequent motifs now are laddered bands and lattice-filled triangular motifs (Lichardus-Itten et al. 2002b, pl. 15). Painting in dark brown or red on a lighter-slipped background of the same colour now appears here (Lichardus-Itten et al. 2002b, pl. 16). The painted motifs of this technique are initially checkerboard patterns. Waved bands and linear motifs also continue to be found. Accordingly, Čohadžiev ascribes the material of Kovachevo Ia and Ib to his Phase IIa (Čohadžiev 2001, 98–99). Curvilinear and spiraloid motifs appear among the white-on-red painted ceramics for the first time during Kovachevo Ic which is parallelised with Karanovo I (Lichardus-Itten et al. 2002b, pls. 13–14). Generally, the application of white paint is more extensive than before. The type spectrum transforms so that the majority of vessels now stand on stand-rings markedly offset from the vessel body, where formerly only flattened stands or massive feet were common. Some of the pots now also display a cylindrical neck offset from the body. This corresponds to Čohadžiev's Phase IIb, to which the finds from Kraynitsi II and III can also be assigned (Čohadžiev 2001, 91). There may be further transformations within the type spectrum in Kovachevo Id. The previously slight outwards turn of the lips now develops into a definite S-profile. Some forms now display very tall cylindrical stands supporting equally tall vessels. These are bulbous beaker forms from the phases of Karanovo I and II. Nevertheless, proper tulip beakers do not occur in the Struma Valley (in marked contrast to this period's trajectory in Thrace). Continuing to be common is the white-on-red painting with hatched patterns, spiraloids, and linear motifs, which now often extends over the entire vessel body. On account of the still very much predominant white painting, the synchronisation of Kovachevo Id with Karanovo II, as suggested by Marion Lichardus-Itten (Lichardus-Itten et al. 2002b, fig. 3), is rather uncertain. However, Kovachevo Id may still have to be paralleled with Karanovo I because of the white painting. This is Phase IIc of the Early Neolithic according to Čohadžiev. Thereafter, painting is reported only seldom for Karanovo II, albeit with dark colours. Afterwards, far more frequently, the vessels are decorated plastically, sporting extensively overlying channels, incisions, and perforations. Considering the trajectory in North Macedonia, it would seem that the entire development in painting techniques at Kovachevo occurred within the phases of Anzabegovo-Vršnik Ic and II according to Garašanin. Kovachevo Ia may be parallelised with Anzabegovo-Vršnik Ic on account of the predominance of rows of dots and zigzag bands (Lichardus-Itten et al. 2002b, pls. 17–18). The net pattern characteristic of Anzabegovo-Vršnik II appears from Kovachevo Ib onwards. Notable, in turn, is the dark-on-light painting, with the difference that the proportion of white painting throughout the entire spectrum of the painted pottery hardly decreases at all, even by Phase Id at Kovachevo (Lichardus-Itten et al. 2002b, pls. 11–16). Conversely, the stage of Anzabegovo-Vršnik III with black painting and (most prominently) spiral motifs was not reached at Kovachevo. Surprisingly, Lichardus-Itten and colleagues were able to compare very convincingly some painted vessels from Kovachevo directly with forms from Hacılar (Lichardus-Itten et al. 2006, pl. 2. – see also Brami, Heyd 2011, fig. 13). A direct connection of the south-western Anatolian maritime region with

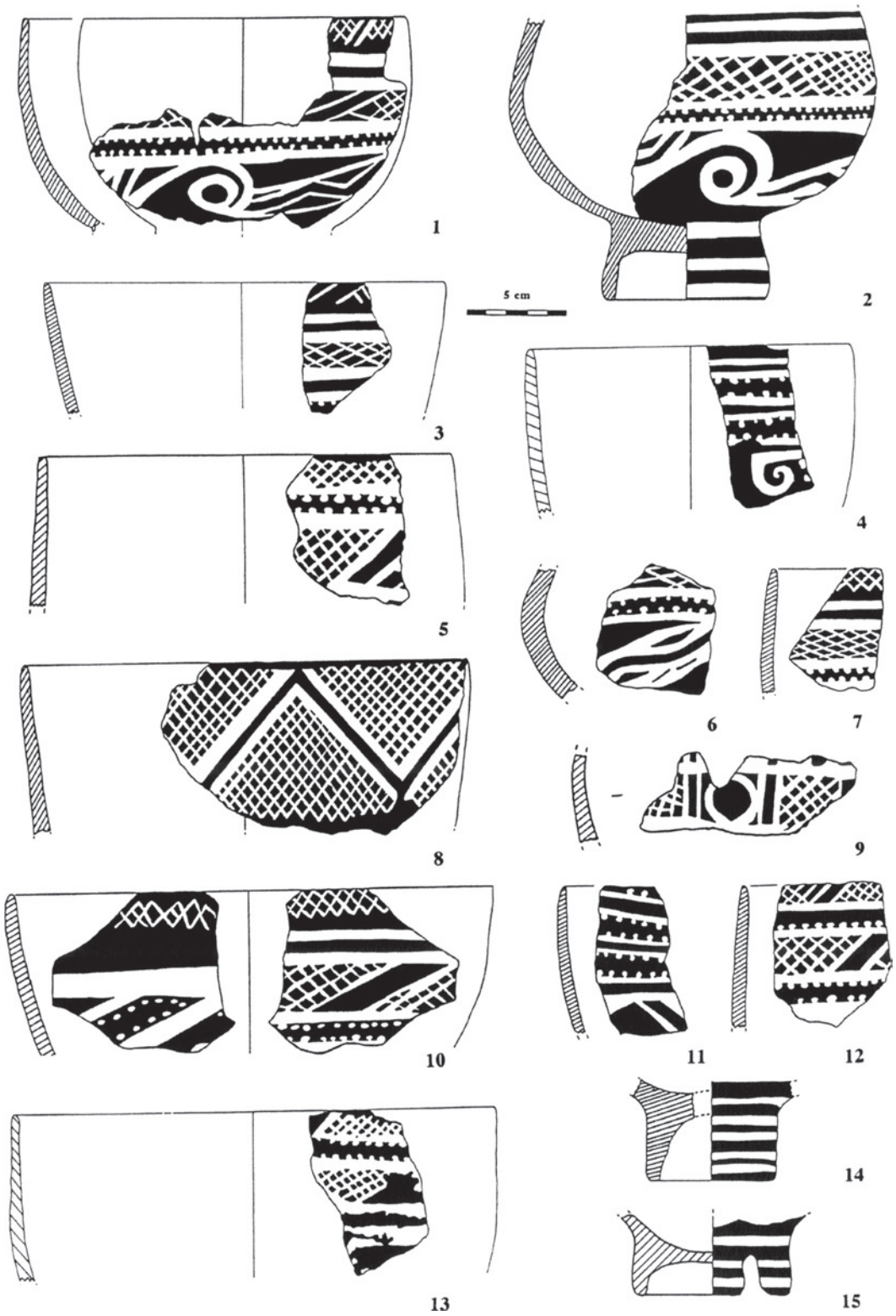


Fig. 64: Kovachevo. Stylistic group A of painted ceramics (after Lichardus-Itten et al. 2002, pl. 11).

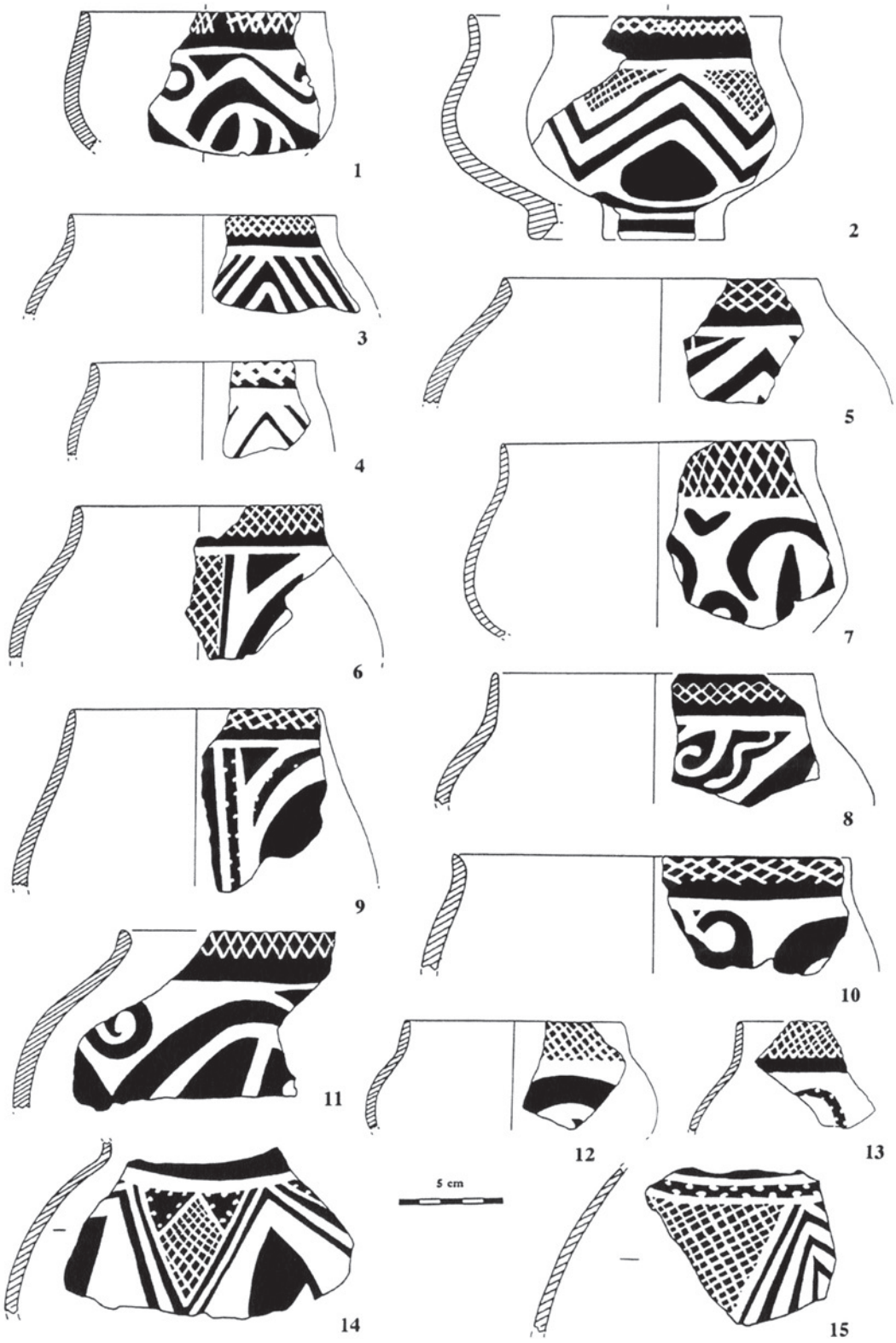


Fig. 65: Kovachevo. Stylistic group B of painted ceramics (after Lichardus-Itten et al. 2002, pl. 12).

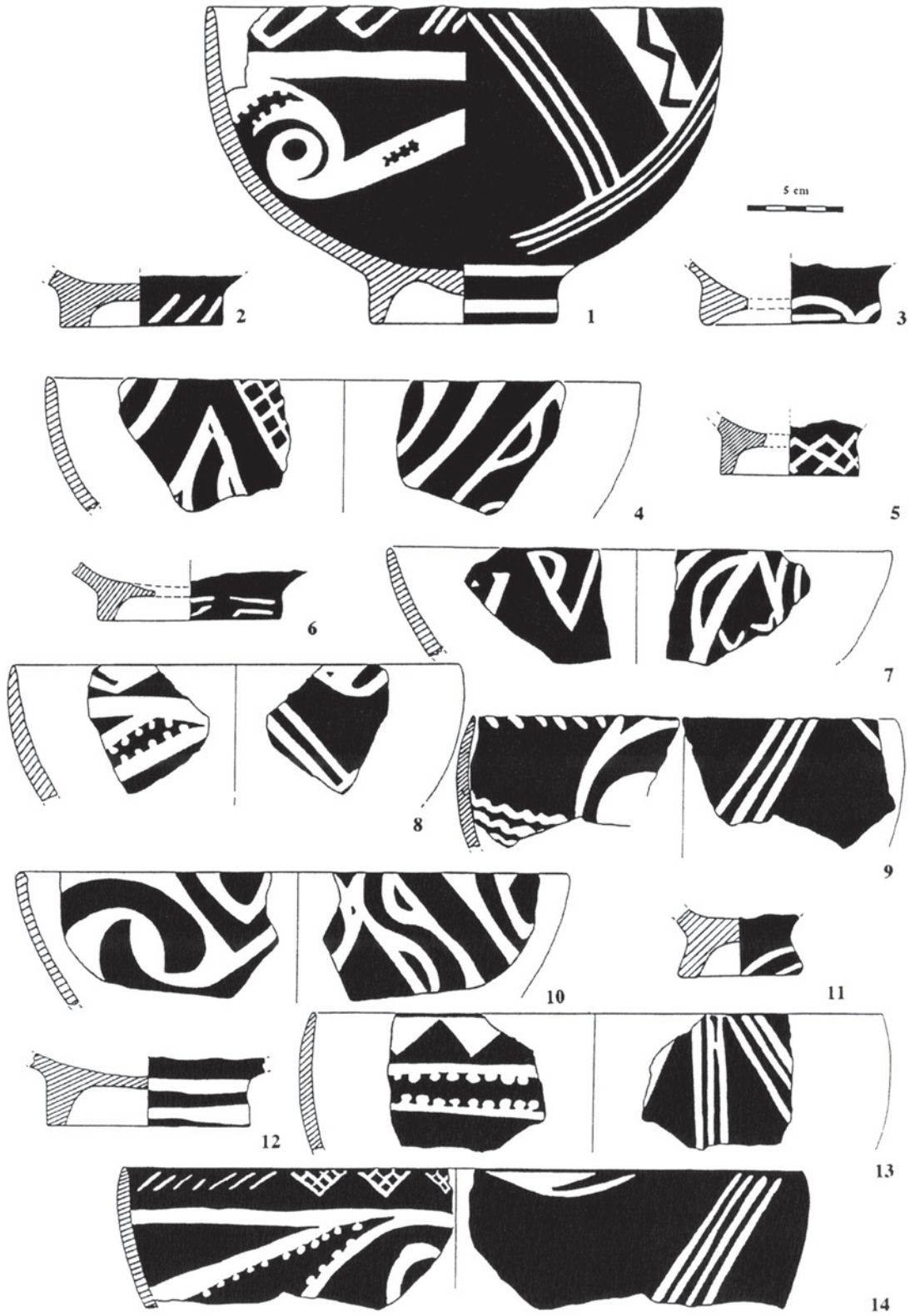


Fig. 66: Kovachevo. Stylistic group C of painted ceramics (after Lichardus-Itten et al. 2002, pl. 13).

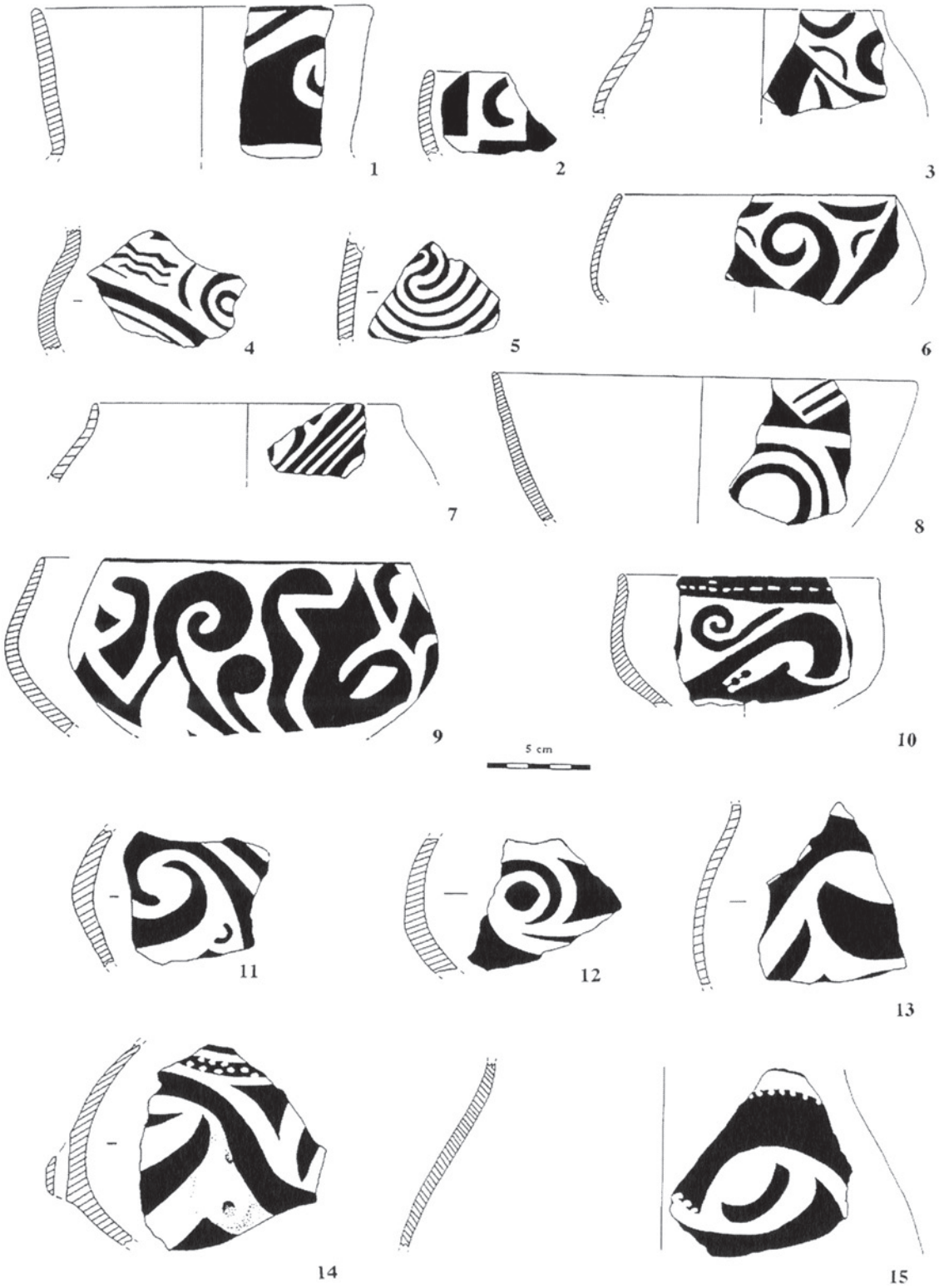


Fig. 67: Kovachevo. Stylistic group D of painted ceramics (after Lichardus-Itten et al. 2002, pl. 14).

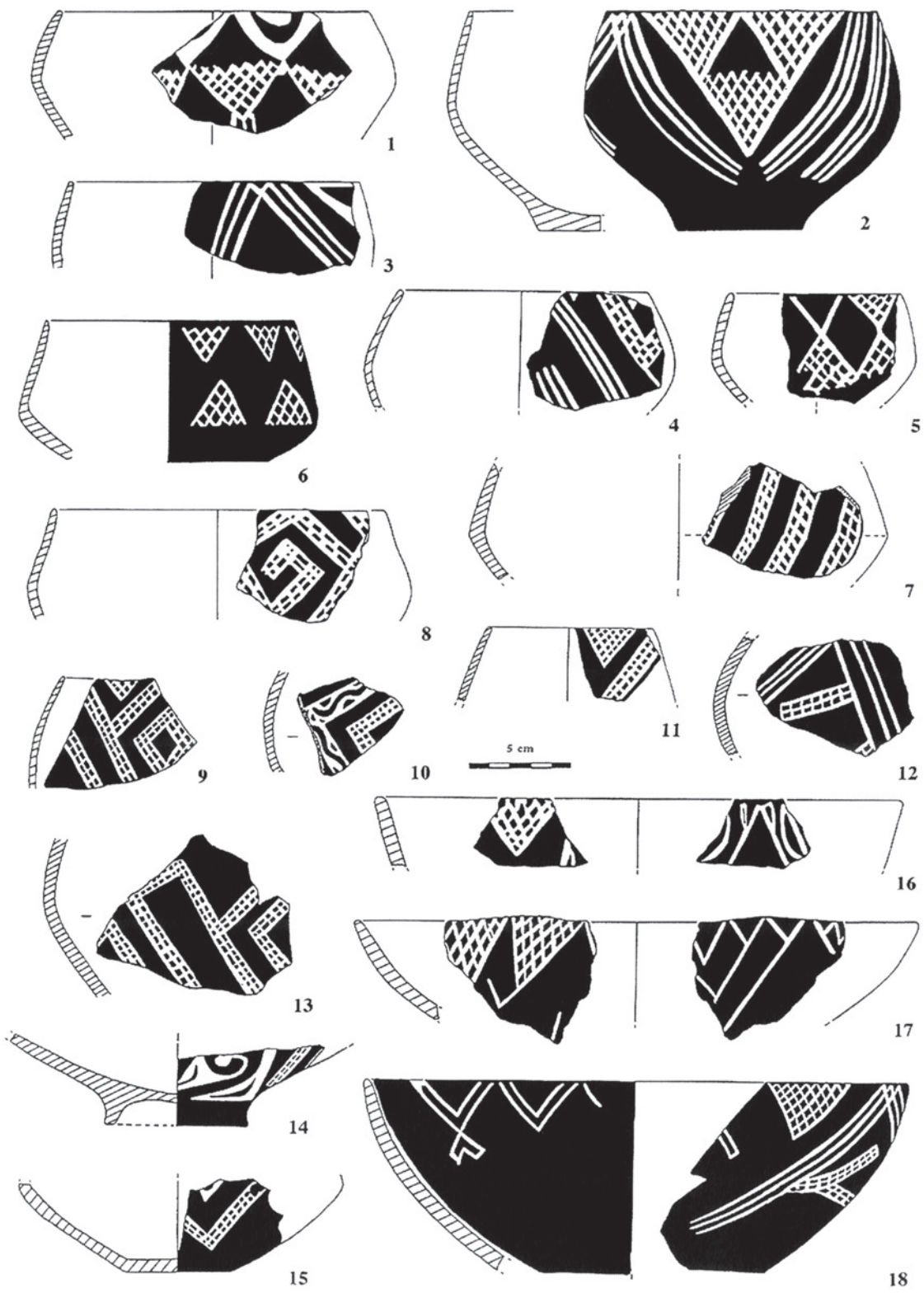


Fig. 68: Kovachevo. Stylistic groups E (16–18) and F (1–15) of painted ceramics (after Lichardus-Itten et al. 2002, pl. 15).

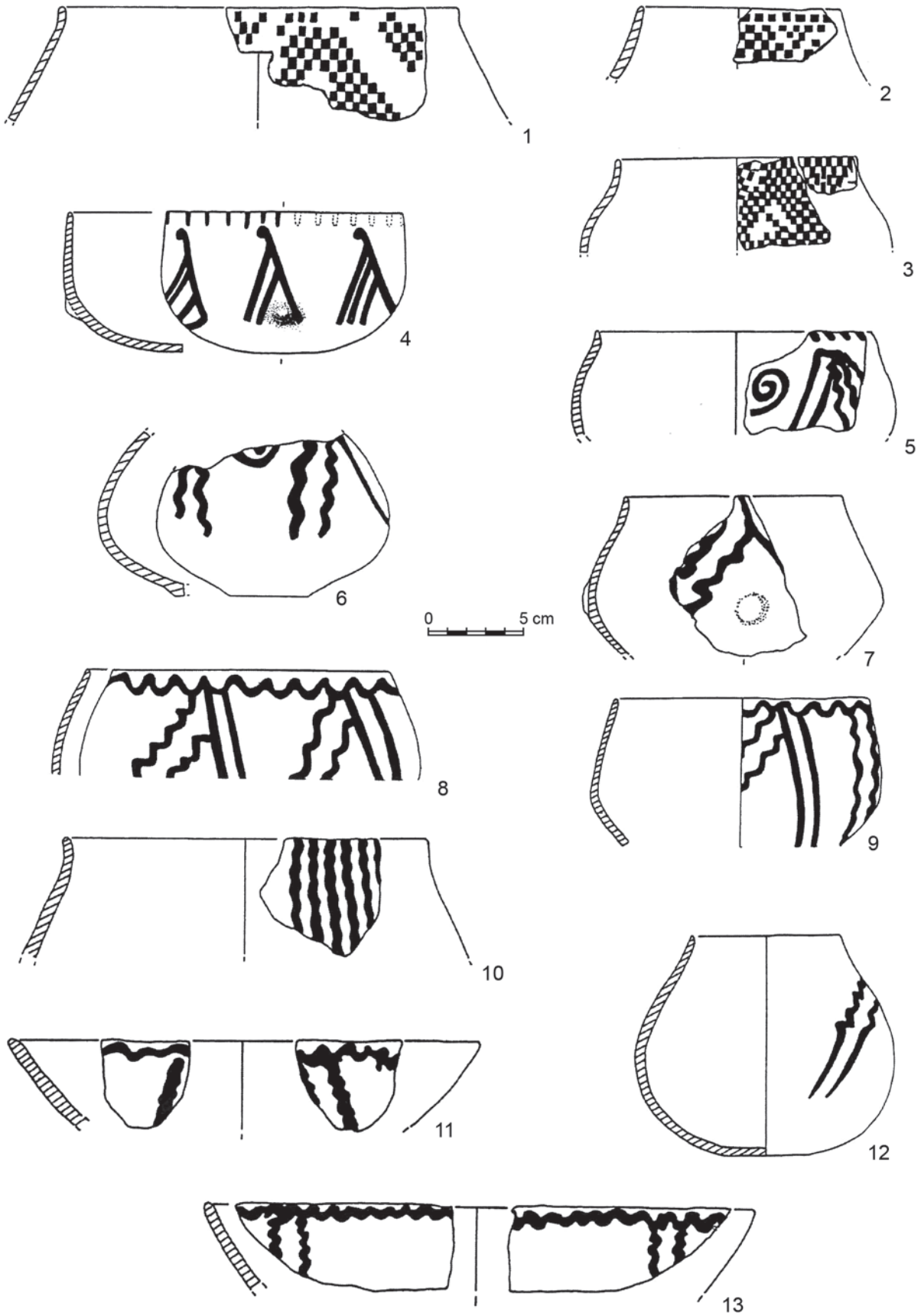


Fig. 69: Kovachevo. Stylistic group G of painted ceramics (after Lichardus-Itten et al. 2002, pl. 16).

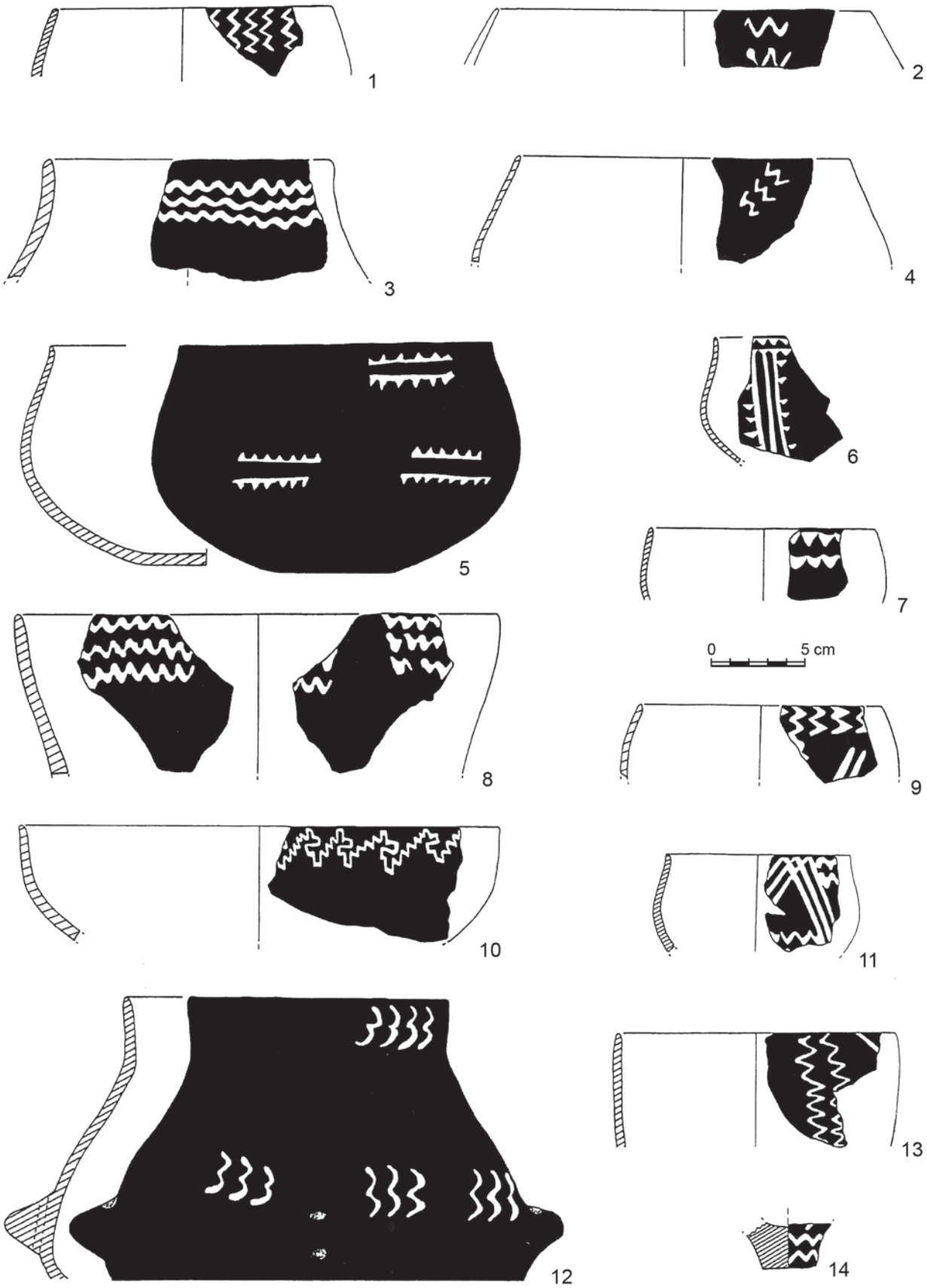


Fig. 70: Kovachevo. Stylistic group H of painted ceramics (after Lichardus-Itten et al. 2002, pl. 17).

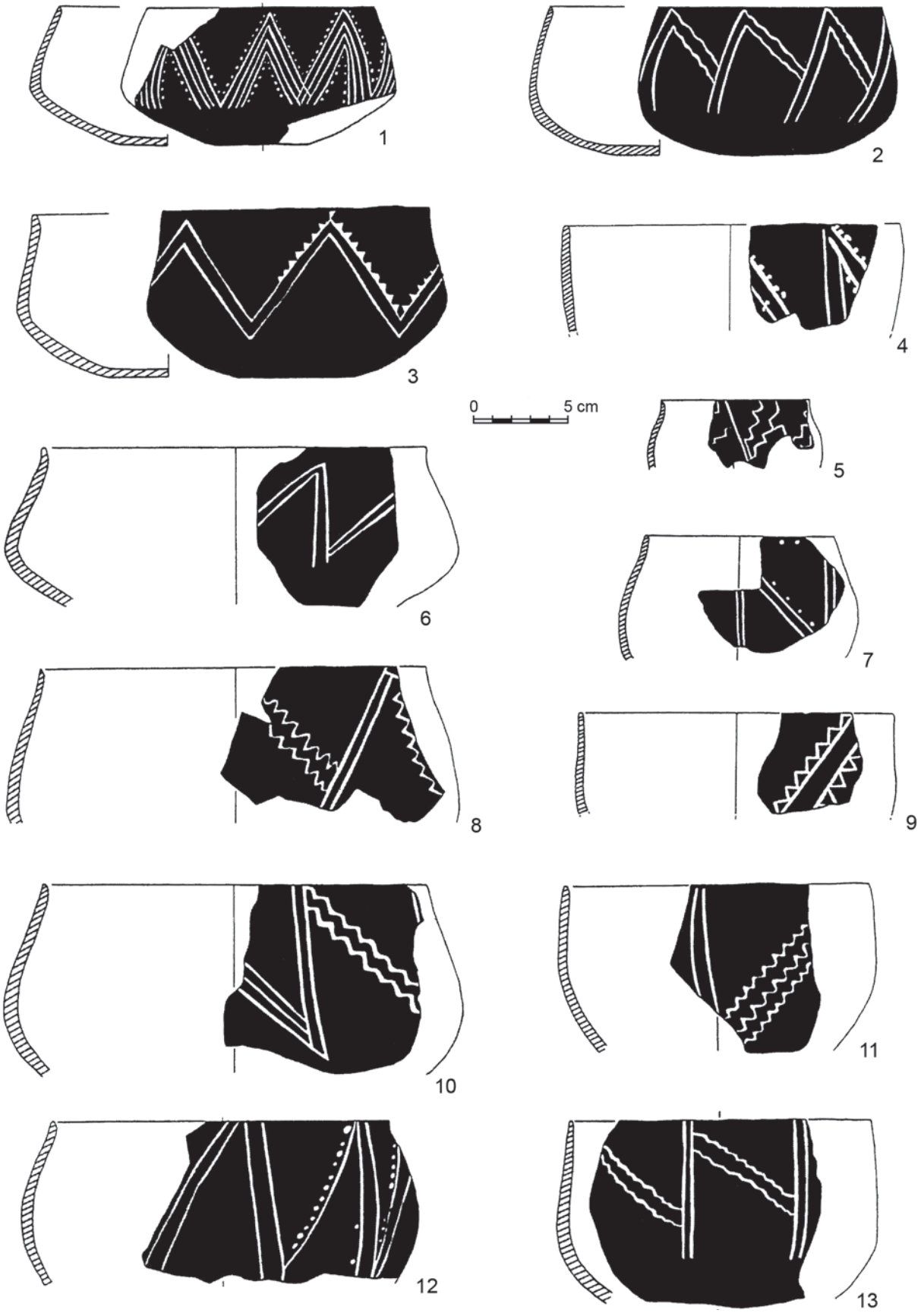


Fig. 71: Kovachevo. Stylistic group I of painted ceramics (after Lichardus-Itten et al. 2002, pl. 18).

	Stylistic groups of painting									
	I	H	G	F	E	D	C	B	A	
Kovachevo Id								●	●	Karanovo II
Kovachevo Ic						●	●	?		Karanovo I
Kovachevo Ib		?	●	●	●					
Kovachevo Ia	●	●								

Fig. 72: Kovachevo. Sequence of the stylistic groups of painted pottery within the settlement phases (after Lichardus-Itten et al. 2002, fig. 6).

the Struma Valley is thus demonstrated, this not requiring any transmission via central western Anatolia.

Relevant once more for the late development of the Early Neolithic are the lowest levels of the tells of Balgarchevo, settled well into the Early Chalcolithic (Maritsa culture). The results of the excavations have now been published (Pernicheva-Perets, Grębska-Kulow, Kulov 2011). Noticeable within the form spectrum of the level of Balgarchevo I (corresponding to the Early Neolithic) are numerous carinated bowls and bulbous vessels with narrow mouths (Perničeva 2002, pls. 1–2. – Pernicheva-Perets, Grębska-Kulow, Kulov 2011, figs. 4.8–4.9, 4.12). The presence of wide clawed spirals painted with dark colours on a light-slipped background (Perničeva 2002, pls. 3–4. – Pernicheva-Perets, Grębska-Kulow, Kulov 2011, fig. 4.40–4.42) permit a parallelisation with Anzabegovo-Vršnik IV. The excavators compare, in particular, the painted motifs of Balgarchevo I with Vaksevo III (Pernicheva-Perets, Grębska-Kulow, Kulov 2011, 208), further confirming this parallelisation. Remarkably, however, individual white painted fragments could still be found (Perničeva 2002, pl. 4/1, 4, 7); these serve as additional confirmation that white painting in the Struma Valley was markedly longer-lived than elsewhere within the Balkans. Very few plastic decorations, such as blossom motifs in relief, impressed cordons, characteristic channelled fragments, and perforated and incised motifs (Pernicheva-Perets, Grębska-Kulow, Kulov 2011, fig. 4.25, 4.37–4.38) conversely permit a parallelisation of Balgarchevo I with the developed Early Neolithic in the eastern Balkans, namely Karanovo II, Dzhulyunitsa IV, and Ovcharovo-Gorata.

The subsequent settlement phase of Balgarchevo II cannot be cleanly divided from the earlier settlement within the entire excavation surface. In some cases, the buildings of the later excavation phase are built into those of the earlier phase. For that reason, the excavators published a considerable amount of material which could belong to either of the settlement phases (Pernicheva-Perets, Grębska-Kulow, Kulov 2011, fig. 4.42–4.47). The ceramics which might be safely ascribed to the phase of Balgarchevo II demonstrate an independent character, with numerous open carinated vessels, globular bowls with strap handles applied on the side of the body, and bowls and plates, some with corners extending into points (Pernicheva-Perets, Grębska-Kulow, Kulov 2011, fig. 4.48–4.78). Many older forms also allowing a connection with Karanovo II may still be evidenced within this phase. The excavators associate Balgarchevo II with Sapareva Banya II and Vaksevo IV (Pernicheva-Perets, Grębska-Kulow, Kulov 2011, 211), with this tantamount to a connection with Karanovo II/III. A few vessel fragments with decorative bands of perforated adornments and an entire series of cylindrical lids with precisely the same perforated decorations (Pernicheva-Perets, Grębska-Kulow, Kulov 2011, fig. 4.66, 4.71) represent a superregional connection with the early Hamangia pottery in the Dobrudja. Predecessors to these specific adorned vessels may be identified in some jug-like vessels and the lid forms from Ovcharovo-Gorata. By means of contrast, the forms from Balgarchevo II are somewhat later.

The horizon of Balgarchevo I and the Early Neolithic finds from Sapareva Banya in the northern Struma Valley are equivalent to Phase IIIc in the periodisation of Čohadžiev and simultaneously mark the end of the Early Neolithic ceramic trajectory of the Struma Valley (Čohadžiev 2007, 92–93 and tab. 7). In respect to the western Black Sea region's trajectory, only a few correlations with the material from Ovcharovo-Gorata are evidenced (in addition to the aforementioned finds from Sapareva Banya). These pertain to the late phase of the Early Neolithic, should the carinated bowls and vessels with narrow necks from Balgarchevo (cf.

Perničeva 2002, pls. 1/1, 4, 13; 2/8, 10, 12) be considered against types from Ovcharovo-Gorata. A further shared feature is presented by the channelled decoration on some vessels (cf. Perničeva 2002, pl. 4/9, 12). It should also be noted, however, that the earlier phases of IIIa to IIIb are almost exclusively defined by means of painted pottery according to Čohadžiev, whereas entire vessel forms are only seldom considered.

4.3. The Lower Struma Valley with the Plains of Serres and Drama

In comparison to the adjoining regions in the north, hardly any Early Neolithic sites are known from the lower course of the River Struma/Strymon and its estuary. Merely a few fragments of white painted pottery are known from the Toumba of Serron (Grammenos 1984), generally connected by Dimitrios Grammenos and Eva Alram-Stern with Karanovo I (Grammenos 1984, 85. – Alram-Stern 1996b, 436), a dating further adopted by Čohadžiev (Čohadžiev 2007, 53–54 and tab. 7). Chaido Koukouli Chryssanthaki, by means of contrast, ultimately considers the finds to be problematic (Koukouli Chryssanthaki 1996, 112–113).

The first secured finds are from the early Late Neolithic originating from the lowest level of the mound of Kryoneri at Amphipolis (Malamidou 2007). These comprise black burnished and so-called black topped ceramics, first known within the Bulgarian portion of the Struma Valley from the period of Karanovo IV onwards (e.g. at Promachon-Topolnitsa [Vajsov 2007]). The finds from the earliest deposits from the mound of Sitagroi (Keighley 1986) and Dikili Tash (Commenge-Pellerin, Tsirtsoni 2004) are estimated to be similarly late in date. Inasmuch as the individual finds of sherds with white painting from Dikili Tash may be easily attributed to Late Neolithic wares (Treuil 2004, pl. VI/1a–b), debate over their purported Early Neolithic age may finally be considered to be concluded (cf. Alram-Stern 1996b, 436. – Commenge-Pellerin, Tsirtsoni 2004, 36–37).

4.4. The Neolithisation of the Struma Valley

On account of the absence of sites along the northern Aegean coastal area, the fact that the Struma Valley served as one of the main routes for the neolithisation of the Balkan region has only entered the scholarly sphere reasonably recently. This notion was first clearly articulated by Nikolov (Nikolov 1990). The notion of a primary dispersal of the neolithisation via the Struma Valley is nevertheless presently based solely upon the comparison of the ceramic types and their adornments. This idea is perhaps supplemented by the dispersal of Neolithic clay stamps, with this, in turn, suggesting the connection of Pisidia with central western Anatolia and Thessaly, on the one hand, and with the large central Balkan river systems of the Strymon and Axios disgorging into the northern Aegean, on the other (Lichter 2011, fig. 1). Tellingly, the distribution of Neolithic clay stamps largely omits the Marmara region, once again indicating a barrier function for this region. A form comparison between Kovachevo and Hacılar even suggests direct contacts between Pisidia and the Struma Valley by way of central western Anatolia (Lichardus-Itten et al. 2006. – Brami, Heyd 2011, 183).

Particularly interesting, in turn, is the question as to which structural similarities stand out beyond the related ceramic technologies of the Struma Valley and the southern regions. Nevertheless, the problem of the methodological barrier between Bulgaria and the countries bordering to the south carries considerable weight here. Complicating matters still further is an absence of finds within the northern Aegean coastal zone, most likely due to a shift of the coastline and the heavy sedimentation of the Neolithic strand (Lespez et al. 2013). Diagnostic architectural contexts for the period of the earliest Neolithic in the Struma Valley come solely from Kovachevo. The Early Neolithic settlement features are heavily disturbed by erosion, the consequences of an earthquake, and later incursions (Lichardus-Itten et al. 2002b, 107–108). The freestanding houses possess an approximately quadratic foundation with wall lengths of 5 and 6 m respectively and floors of trampled clay. The upright walls consist of a wattle-and-post construction coated in clay (Lichardus-Itten et al. 2002b, 108–114 and figs. 5/2; 6/1–2). This manner of house building may be derived from the structures of central western Anatolia, although the characteristic stone foundations are completely absent within the Struma Valley. This can hardly have been due to a lack of accessibility as stone suitable for building material is abundantly present in the region. A particular trampled clay technology is preserved from developed Early Neolithic Kovachevo, described by the excavators as "béton de terre crue" (BTC) (Lichardus-Itten 2010, 11–15). This comprises a mixture of clay, burnt hut clay, charcoal pieces and carbonate that produces a particularly firm building material following hardening. A post house with multiple rooms is attested from Balgarchevo II (Pernicheva-Perets, Grębska-Kulow, Kulov 2011, 71–82); this represents an independent type of Balkan-influenced house which, at the very least, cannot be derived from the south.

The discovery of some child skeletons within the settlement of Kovachevo (Lichardus-Itten et al. 2002b, 116 and pls. 9/1–2; 10/1) and the otherwise complete absence of burial grounds outside of the settlements indicate a funerary

ritual potentially similar to that of central western Anatolia. If nothing else, this might clearly be distinguished from that of the Marmara region as is known from its multiple burial fields.

The spectrum of the butchering waste from Kovachevo reflects an inventory that is typical for the Early Neolithic of the entire broader region with very high proportions of domesticates and low proportions of game. Sheep/goat constitute around 65% of the domestic animals, with domesticated pigs following at 21%. Tellingly, the animal bone specialist not only compares the inventory to that of neighbouring sites in the Balkans, but also to the inventories from the settlements of Nea Nikomedeia and Achilleion in Greek Macedonia and Thessaly respectively (Lichardus-Itten et al. 2002b, 126). A marked connection with the Aegean is displayed by finds of large marine bivalves such as *Glycimeris* and *Spondylus*, with these already appearing as a raw material in the production of jewellery within the Early Neolithic levels of Kovachevo (Lichardus-Itten et al. 2002b, 127–128).

The grist residue analyses from Kovachevo demonstrate, at the very least, the normal spectrum of Early Neolithic grain varieties such as einkorn, emmer, barley and durum wheat (Lichardus-Itten et al. 2002b, 127); this, however, provides support neither for nor against a connection with any of the southerly regions of the ancient Neolithic.

If the environment of the Struma Valley is examined, then it becomes evident that the diffusion of the Neolithic within the Balkans not only shifts from maritime communication to an overland route, but that ship navigation may generally no longer have been the preferred form of movement in the areas north of the Aegean. However, the speed of distribution must be estimated as being very swift, so that it cannot solely be captured by means of the resolution of ^{14}C data. From a purely archaeological perspective, the neolithisation of the northern coastal region of the Aegean up to the Danube appears as a sudden process occurring without any great chronological depth at some point in the course of the 62nd century BCE. A palaeogenetic investigation of the domesticated bovines by Amelie Scheu was able to prove a doubly strong genetic proximity of the cattle from Kovachevo to Neolithic bovines from Iran in comparison to those from Koprivets on the Lower Danube (Scheu 2012, 106). Not only were the local aurochs genetically uninvolved in the creation of the Neolithic domesticated bovines, but the latter were, in turn, evidently imported directly from the south-east. It stands to reason that the movement of these bovine herds into the Balkans might be connected to the immigration of specific human populations, as the speed of diffusion and quantities of cattle involved are both greater than might be supposed for a transfer of the animals through networks of human groups with differing economic modes. If a pre-Neolithic population had lived within the region, then this played no demonstrable part within the transmission of Neolithic cultural elements into the Balkans. Only groups already fully versed in the Neolithic economic model and accompanying their herd animals can plausibly be considered to have been agents in the neolithisation of the Struma Valley.

4.5. The Vardar/Axios Region

Much akin to the Struma/Strymon, the river valley of the Vardar/Axios forms a natural passage from the Thermaic Gulf and the Macedonian Plain to far within the central Balkans. The SMAB zone is particularly pronounced here and encompasses not only the entire river valley including its eastern tributaries but also a good part of northern Pelagonia. The Vardar Valley thus lends itself well to being a route for the dispersal of the neolithisation from south to north. It is hardly surprising that numerous sites settled throughout the entire Early Neolithic period may be found there. The region displays an independent trajectory spilling into neighbouring regions without being significantly influenced by other cultural groups. The Macedonian Neolithic is also of significance to the understanding of the Neolithic form trajectory in the Struma Valley neighbouring to the east, as it is only there that a more comprehensive picture of the settlement processes at the beginning of neolithisation may be obtained.

From 1969 to 1970, Milutin Garašanin and Marija Gimbutas undertook sondage excavations on the mound of Anzabegovo (Gimbutas 1976). For some time, the only information initially available on the mound's stratigraphy originated from Gimbutas which was harshly criticised following its publication in a monograph (Gimbutas 1976) and must now be fundamentally re-evaluated according to Garašanin's conflicting evidence published afterwards (Milojčić 1978. – Garašanin 1998). Nevertheless, the final publication of the Yugoslav excavation team is still pending, and this can now hardly be expected to occur considering the decease of almost all of its protagonists. Initially, a four-phase settlement stratigraphy was postulated by Gimbutas. According to her, the lowest level, Anza I, contained globular forms on simply flattened feet or only slightly raised pot stands and various key forms with an extensive red-brown or orange-brown slip. In addition, a few fine ceramic vessels are painted white. The painted motifs are realised over a broad surface; floral motifs and simple linear patterns predominate (Gimbutas 1976, figs. 23, 24, 48–49). Some coarse ware vessels

are extensively decorated with crude incisions (Gimbutas 1976, figs. 22, 47). The form spectrum of Gimbutas' phase of Anza II largely corresponds to that of the earlier material, albeit supplemented by S-profiled forms and high-set carinated bowls. In addition to the survival of examples of white painting, darker colours such as red or brown are now painted in greater quantities upon a light-slipped surface (Gimbutas 1976, figs. 57–58). Painted motifs continue to be applied over a wide surface but overwhelmingly form curvilinear patterns in contrast to the earlier material (Gimbutas 1976, fig. 59). Thereafter, the dark-on-light painting with vertical linear patterns becomes wholly characteristic of Anza III. According to Gimbutas, a final level with Vinča material follows during Anza IV (Gimbutas 1976, 119–155). Vladimir Milojčić's fundamental criticism of the stratigraphy outlined related primarily to the uppermost Vinča layer, but ultimately brought the entire form trajectory as interpreted by Gimbutas into question (Milojčić 1978. – cf. also Parzinger 1993, 69–70). While Schubert later principally confirmed the sequence presented by Gimbutas on the basis of his analysis of the painted motifs (Schubert 1999, 51–54), Garašanin all but simultaneously published more precise information on the stratigraphy and form development at Anzabegovo which largely dismantled Gimbutas' system anew (Garašanin 1998). Ultimately, the scheme of the early Starčevo trajectory (already put forward early on by Garašanin) is essentially based upon insights which he had gained from Anzabegovo (Garašanin 1979, 124–129). The underlying system resulting from various stratigraphic observations at different sites has unfortunately never been published by him in any satisfactory manner.



Fig. 73: Anzabegovo, phase Anzabegovo-Vršnik I. White-on-red painted ceramic (after Sanev 2004, pl. I; different scales: 1. h: 12 cm. – 2. h: 10.2 cm. – 3. h: 20 cm).

In 1958, Draga and Milutin Garašanin had already begun excavating at the mound of Vršnik, not far from Anza (Garašanin, Garašanin 1958/1959. – Garašanin, Garašanin 1960/1961). While only a few sherds from these finds have been published in black and white photographs, these are sufficiently well described by the excavators that generally reliable information is presented. Nevertheless, the statements are difficult to verify due to the improvised manner of publication. Overwhelmingly predominant within Vršnik I is coarse pottery partially decorated with fingernail impressions and (more rarely) with barbotines. The vessel surface is coloured reddish to brown, and is obviously slipped. Some sherds are additionally painted with white pigment. The succeeding layer of Vršnik II demonstrates similar wares, although the impressed decoration decreases in frequency. A grey, very hard, and burnished ware with polishing traces reminiscent of channelling becomes predominant (Garašanin, Garašanin 1960/1961, 27). In terms of painting, the white painting gives way to a painting with black, linear motifs on a red background. During Vršnik III, an increase in grey wares over brown wares can be noted. The painted pottery continues to display linear-black patterns upon a red background; additionally, plastic decoration of the coarse wares is introduced. From what might be surmised from the excavators, coarse wares with crude surfaces grey or light brown in colour and a heavily fired and burnished fine pottery of black, brown and, less commonly, red or light colour are characteristic of Vršnik IV (Garašanin, Garašanin 1960/1961, 17–19). Quite evidently some wares are still slipped. Fingernail impressions and, more seldomly, barbotine applications occur among the coarse wares. Incised decorations attested from one vessel (described by the authors as excised adornments) are also worthy of note (Garašanin, Garašanin 1960/1961, 19). Some fragments of the fine ceramics were

painted in a curvilinear fashion with dark paint. Carinated vessels are also mentioned among the forms.

The development of forms at Anza and Vršnik was later parallelised by M. Garašanin, with the essential difference that he transposed Gimbutas' phases of Anza III and IV so that linear dark painting on a light background came to exist prior to dark-spiraloid painting (Garašanin 1979, 87–98). Furthermore, Garašanin's phase of Anzabegovo-Vršnik IV certainly does not reflect Gimbutas' Anza IV, but instead forms an additional level with spiraloid dark painting. In turn, Dragiša Zdravkovski combines vessels from Garašanin's levels of II, III, and IV into a single Anzabegovo-Vršnik III phase. Analogously to Gimbutas, he considers Anzabegovo-Vršnik IV as characterised by Vinča material (Zdravkovski 2006). It remains unclear within this apportioning of the find material which manner of painted pottery should then be diagnostic of Anzabegovo-Vršnik II.

According to Garašanin's final subdivision, the Anzabegovo-Vršnik trajectory is constituted as follows (Garašanin 1998): he considers multi-coloured ceramic wares to be characteristic. A few of the sherds are painted with white paint on a red background (Fig. 73). Triangles and floral patterns predominate, while bands of meanders and zigzags occur less frequently. Barbotine and impressed adornments are also only seldom attested. During Phase Ib, step and 'eye' patterns appear, while floral patterns are no longer present. Starting with Phase Ic, grouped dots and zigzag bands are also to be found. A fundamental shift is to be noted from Phase II onwards, where white-on-light painting is gradually replaced by dark-on-light painted wares. Curvilinear net patterns now occur, and a broad channel can also be noted among the plastic forms of surface treatment. Moreover, extensive patterns formed of sharp-edged triangular incisions appear. Perennially common is barbotine adornment, with this now occurring more frequently than impressed decoration. In Phase III, a black ware emerges which was already attested in small numbers during Phase II. The dark-on-light painting technique preserves the curvilinear net patterns, and the first large spiral patterns are also introduced (Fig. 74). Phase IV, the conclusion of the trajectory, evidences 'clawed spirals' as a defining feature of the painted pottery. The coarse vessels might now very often be found with a finger-grooved barbotine.

While the entire trajectory is represented at Anzabegovo, the settlement of Vršnik only begins during Garašanin's Phase Ic (Garašanin 1998, 37). Early material with linear white painting has also been identified at Govrlevo in the south-western suburbs of Skopje (Zdravkovski 2006, fig. 1, above). At Rug Bair, the trajectory is initiated in Phase II with dark-on-light and (very rarely) with white-on-light



Fig. 74: Anzabegovo. Impresso and dark painted ceramic. – 1–2. Anzabegovo-Vršnik IIa. – 3. Anzabegovo-Vršnik III. – 4. Anzabegovo-Vršnik IV (after Sanev 2004, pl. III; different scales: 1. h: 12.7 cm. – 2. h: 16 cm. – 3. h: 37 cm. – 4. h: 14 cm).

painting (Sanev 1975. – Garašanin 1998, 37). The late period of Phase IV with an extensive dark painting is further attested at Zelenikovo (Galović 1964, 11–29. – Garašanin, Spasovska 1976). Originating from the Tumba Mađari in particular are complete forms of globular beakers on high stands with a dark linear painting and curvilinear net patterns (Sanev 1988, fig. 9. – Sanev 2004, pl. III. – Sanev 2006, fig. IIa–b. – Zdravkovski 2006, figs. 4–7) as characteristic of Garašanin's Phase II. The excavations, resumed since 2002 under the direction of Zdravkovski and Elena Kanzurova, unearthed a settlement of at least three layers covering the entire timespan between Anzabegovo-Vršnik II–IV (Kanzurova, Zdravkovski 2011, 140–151).

In turn, the settlement in the field of Na Breg within the locality of Mlado Nagoričane is relevant to the late phases of the Anzabegovo-Vršnik complex. The site lies some few

kilometres north-east of Kumanovo on the road to Kriva Palanka. During excavations in 1986, Zdravkovski was able to identify four settlement horizons, only the lower two of which belong to the Neolithic (Zdravkovski 1988). The earlier horizon, Na Breg I, evidences rounded forms, partially on raised hollow feet likened by the excavators to those from the Tumba Mađari (Zdravkovski 1988, 46). Some sherds are red-slipped and painted on top with brown paint. The painted motifs are simple and linear, although combined with large spirals. A single fragment further evidences painting with white pigment (Zdravkovski 1988, 59 [Nr. 99]). The coarse pottery is adorned with barbotines, impressions, incisions, plastic cordons or bosses, with these decoration types being reminiscent of the plastic ornaments known from Ovcharovo-Gorata (Zdravkovski 1988, 55–58), without overestimating the similarities due to the highly fragmented sherds from Na Breg. The phase of Anzabegovo-Vršnik II appears to be attested here on grounds of the painted technique. A grey ware already present during Phase I becomes more prominent in the find spectrum of Na Breg II. Nevertheless, the vessel forms remain essentially the same. Salient is the high quality of the painted pottery, upon which so-called 'clawed spirals' may now also be found (Zdravkovski 1988, 48), a defining feature of Anzabegovo-Vršnik IV for Garašanin.

The material of the cursorily published sites of Grnčarica, Tumba Stenče, and Kutline (Kanzurova, Zdravkovski 2011, 151–154) may be easily ascribed by means of the sequence of materials in the Tumba Mađari's stratigraphy. Four bowls from Grnčarica (Kanzurova, Zdravkovski 2011, fig. 23) number among the earliest Neolithic material from the Vardar Valley and might, accordingly, be paralleled with Anzabegovo-Vršnik I. Two bowls from Kutline on raised pedestal, one of these with a vertical channel on its body (Kanzurova, Zdravkovski 2011, fig. 26), belong to the end of the Early Neolithic in the level of Anzabegovo-Vršnik IV or to the earliest Vinča. Another three vessels, also from Kutline, can be assigned to the same period (Kanzurova, Zdravkovski 2011, fig. 27).

It is only in recent years that finds of a Balkan style have been identified at the estuary of the Axios. A settlement of the Middle Neolithic (according to the Greek terminology) was excavated during 1992 and 1993 on land belonging to the international conference centre in the neighbourhood of the Thessaloniki Archaeological Museum (Pappa 2007, 269–270). Some sherds with linear white painting on a red background may be associated with Garašanin's level of Anzabegovo-Vršnik I (Pappa 2007, fig. 29). The presence of a bowl painted with red, linear triangle patterns upon a cream-coloured background (Pappa 2007, fig. 28) hints instead at ties with the level of Anzabegovo-Vršnik II, so that a chronological ascription to the transition from Anzabegovo-Vršnik Ic to II might be supposed for the settlement in Thessaloniki.

By means of contrast, the best parallel in Pelagonia may be found in a sherd with a zigzag linear group in white paint on a red background from the settlement of Thermi (Pappa 2007, fig. 22). The site lies somewhat south-east of Thessaloniki, and was investigated during the years 2000 to 2001 (Pappa 2007, 263–268). Three settlement phases could be distinguished from the finds which dated to the end of the Early Neolithic and the early and late phases of the Late Neolithic (according to the Greek terminology). The aforementioned white painted sherds belong to the earliest find ensemble. Originating from the early and later phases of the Late Neolithic are black-burnished vessels and the fragment of a white vessel (Pappa 2007, figs. 23–25) which permit a parallelisation with Garašanin's phases of Anzabegovo-Vršnik II and III.

4.6. The Maritime Networks of the Aegean and the Neolithisation of the Vardar/Axios Region

Those few buildings of the Vardar zone which have been extensively unearthed exhibit a remarkably solid structure. The settlement plan of the Tumba Mađari displays quadrilateral constructions with surface areas of up to 80 m² (Kanzurova, Zdravkovski 2011, 140–141) (Fig. 75). In the houses' interior may be found firmly installed circular and quadratic containers (Kanzurova, Zdravkovski 2011, figs. 11, 13), which are currently unique for the Early Neolithic in the Balkans (Fig. 76). These installations most likely hail from the south, and serve as a secure attestation for close contact between the Vardar zone and the Aegean, here certainly through the immediately neighbouring area of Greek Macedonia. Nea Nikomedeia and Servia (cf. Perlès 2001, fig. 9/1. – Alram-Stern 1996b, fig. 38) may have served as prototypes. Interestingly, the structures of Tumba Mađari do not offer much in the way of comparisons to their rough contemporaries in Thessaly, as the common building style there features mudbricks and often very specific pilasters in the structures' interiors supporting the roof. Examples of this tradition in construction are presented by the settlements of Otzaki, Middle Neolithic Sesklo beyond the 'acropolis', and Achilleion (Theocharis 1973, fig. 179. – Gimbutas, Winn, Shimabuku 1989, 32–68. – Alram-Stern 1996b, fig. 29). If the plan of Anza II is considered, then a direct seaborne connection with central western Anatolia would, once again, seem to exist. A stone foundation for the wattle-and-post wall constructed on top of it is preserved in one building from the settlement (Gimbutas

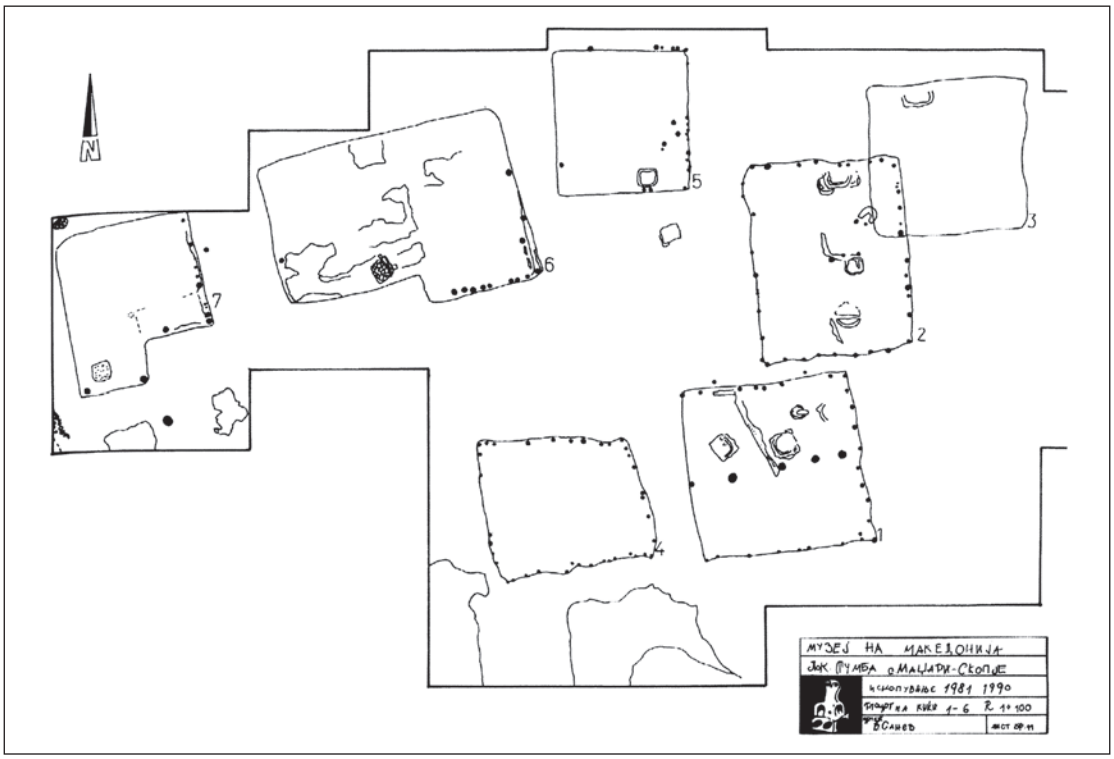


Fig. 75: Tumba Mađari. Ground plan of the settlement (after Kanzurova, Zdravkovski 2011, fig. 3).



Fig. 76: Tumba Mađari. Storage installations within an Early Neolithic house (after Kanzurova, Zdravkovski 2011, fig. 13).

1976, tab. 3); this is reminiscent of the solid structures found in central western Anatolia. Certainly, such an architectural form can hardly be derived from the region as this comprises the region's earliest building feature. Nevertheless, some elements typical of the maritime network of the Aegean are already no longer present on the upper course of the Vardar. For example, there are almost no obsidian tools evidenced there (cf. Gimbutas 1976, 257–282). The appearance of the grain and pulse species that are common to the entire Aegean-Balkan zone is hardly surprising, nor is the clear predominance of sheep/goat over cattle and swine among domesticated animals (Gimbutas 1976, 300–331). Further attesting to close contact with the maritime networks of the Aegean are, nevertheless, the numerous spondylus artefacts which might already be found in comparatively large numbers in the earliest settlement layers of Anza (Gimbutas 1976, 242–251). If the very convincing parallels in the painted ceramics of Sesklo and Hacılar already advanced by Fritz Schachermeyr are considered (Schachermeyr 1976, 47–48. – Brami, Heyd 2011, fig. 3), then it is hardly unlikely that Thessaly served as a form of bridgehead for the neolithisation of the Axios/Vardar region from Pisidia. The architectural form rather indicates direct contacts with central western Anatolia. These references pointing in different directions could be associated with the character of the maritime network which may well have exerted influences into the Vardar zone from various differing Neolithic regions in the eastern Mediterranean.

4.7. Pelagonia

The Pelagonian Plain, neighbouring to the west, opens to the south, forming an environmental unit with the plain of Edessa, the southern border of which is only finally delineated by the Aliakmon. Beyond the high mountain ranges west of Bitola and Florina, the area is connected by means of gentle passes to the Albanian banks of Lake Prespa and Lake Ohrid and the plain of Korça. The course of the Aliakmon forms a natural communication route from the Aegean into the interior of the western Balkans. It is only with the mountains of the Albanides lying further west that this coherent cultural sphere is demarcated against the broad Albanian littoral of the Adriatic Sea. With foreknowledge of the cultural stratigraphy of the Vardar Valley, the development of the neolithisation process within Pelagonia and the regions of Lake Ohrid and Lake Prespa can be understood relatively well despite the poor state of the publication of the sites there.

Significant for the cultural trajectory in Pelagonia is, most prominently, the settlement stratigraphy of the Veluška Tumba near Porodin, south of Bitola, just prior to the Greek border. The excavations from 1971 to 1972 over a relatively large surface area in the centre of the tell yielded four successive settlement horizons (Simoska, Sanev 1975). During the description of finds from the individual levels, unfortunately, the board sigils were confused so that a good understanding of the form trajectory cannot be gained solely from the publication by Dragica Simoska and Vojislav Sanev. Bulbous, softly-profiled forms with extensive white painting are attested as being most prominently characteristic of the early phases of Anzabegovo-Vršnik (Simoska, Sanev 1975, pls. IX–X. – Zdravkovski 2006, fig. 1, below; 2). By means of contrast, the more profiled pots with narrow mouth or upright lips seem strange (Simoska, Sanev 1975, pls. VII/1–3; VIII), and it would be highly desirable to learn how these forms relate to the remaining finds in terms of relative chronology; it might be inferred from the text that these already occur in the earliest level (Simoska, Sanev 1975, 59). Also striking are globular vessels with rounded bases and a tall, thin neck with a slightly conical opening (Simoska, Sanev 1975, pl. XIII). The white painting with parallel waved lines on some of these vessels here also indicates an early chronological ascription (Simoska, Sanev 1975, pl. XVII/3–4). A parallelisation is therefore more possible with the earlier phases of Anzabegovo-Vršnik I and II.

Very similar material may be found upon the mound of Porodin, which is not particularly far away. Unfortunately, these finds also cannot be allocated to clear levels. While Miodrag Grbić and colleagues ascribe the material to a single level (Grbić et al. 1960), Harald Hauptmann typologically divides the finds into earlier Starčevo material and a later level with Late Neolithic forms (Hauptmann 1967, 5). In terms of vessel types, bowls with angular breaks are present in addition to rounded forms. Nevertheless, white painting appears on both variants in the shape of small parallel W-lines; this points to Garašanin's phase of Anzabegovo-Vršnik I and, more precisely, to Subphase Ic. Also present (albeit more rarely) is pottery with dark painting which is hardly chronologically diagnostic. Akin to the Veluška Tumba, the carinated and sharply profiled forms at Porodin are remarkable, being entirely unknown during the Early Neolithic of the northern Balkans. By means of the Struma Valley (neighbouring to the east), a connection may be established stretching to the region of the Maritsa's estuary in Thrace, as pottery forms with similar breaks occur within the earliest material from Kovachevo and Hoca Çeşme alike. If it is possible to exclude a chronological difference with the earliest materials north of the Balkan Mountains, then this must pertain to a cultural distinction between north and south.

On the eastern side of the Pelagonian Plain, further Early Neolithic finds were made at the village of Topolčani in the

field of Čuka, initially by means of rescue excavations (Kitanoski 1977) and later by means of regular investigations (Kitanoski, Simoska, Todorović 1978). Three settlement phases could be distinguished. The earliest phase of Čuka I displays softly profiled forms on simple flattened bases or only slightly offset stand-rings. Typical are globular bowls and pots and vessels with constricted necks. The surfaces are slipped with coloured clay, and the coarse pottery covered with barbotines. Among the sherds pictured within the first preliminary report are two pieces with the remains of white painting on a red background (Kitanoski 1977, 36, nos. 33–34). Further fragments with white painting were later found within the regular excavations (Kitanoski, Simoska, Todorović 1978, figs. p. 14). Moreover, small studs on the vessel body, circumferential rows of pricks, and dimples on lips are all evidenced as decorative forms. From Phase II onwards, carinated forms appear while the earlier forms also continue to endure (Kitanoski, Simoska, Todorović 1978, figs. pp. 16, 18). In addition to a red-slipped conical bowl with white painting, a fragment with red-on-red painting, and another with dark paint on a red background were identified (Kitanoski, Simoska, Todorović 1978, 19). In Čuka III, S-profiled forms and vessels with cylindrical necks similar to the jars of type group K1 at Ovcharovo-Gorata were discovered. Here, painting yields entirely to the plastic decoration of vessels. As previously, barbotine applications on coarse vessels remain common. Alongside these may be found plastic applications in the form of blossoms, as previously known from Ovcharovo-Gorata (Kitanoski, Simoska, Todorović 1978, figs. pp. 20, 48). By means of the presence of white painting and the absence of dark painting at Čuka I, this phase may be ascribed to the level of Anzabegovo-Vršnik I according to Garašanin. Čuka II may be attributed to Anzabegovo-Vršnik II through the joint occurrence of white-on-red, red-on-red, and dark-on-red painting. The appearance of carinated forms can also be observed during this period, a phenomenon which cannot be stratigraphically assigned in either Veluška Tumba or Porodin. Čuka III still possibly occurs within the bounds of Anzabegovo-Vršnik II, although the absence of painted pottery renders any more precise parallelisation difficult. In superregional terms, the form spectrum and plastic decoration of the vessels could also indicate a connection with the horizon of Karanovo II and Ovcharovo-Gorata.

North of Prilep, the single-level settlement site of Radin Dol also belongs to this chronological horizon (Kitanoski, Simoska, Todorović 1987). Decisive for its parallelisation with Čuka III are S-profiled forms, and the appearance of cylindrically-necked vessels. The presence of a tall, hollow vessel foot (Kitanoski, Simoska, Todorović 1987, pl. I, above right) also indicates a connection with the late Starčevo trajectory, on the one hand, or with the horizon of Karanovo II/Ovcharovo-Gorata, on the other. The decoration of the pottery there with dimples upon the vessel lips seems (much as in the Banat, see Chapter 8.7) not only to be characteristic of the earliest ceramics (Kitanoski, Simoska, Todorović 1987, pl. IV, above), but also evident well into the later Starčevo trajectory.

4.8. Eastern Albania

Comprehensive information about the Albanian regions is supplied in the summaries by Muzafer Korkuti and Petrika Lera (Korkuti 1995, 32–58, 90–93 and Lera 2002). The sites of Podgorie, Vashtëmi, Barç, and Dunavec in the plain of Korça, and the settlement of Rajcë on the western bank of Lake Ohrid are closely linked with the Early Neolithic trajectory in the Macedonian sphere.

At the settlement of Podgorie, Lera and Frano Prendi initially published the collection finds from a later so-called Trench A. Later excavations by Prendi and Zhaneta Andrea in Trench B enabled a subdivision of the cultural deposits some 3.20 m in total depth into three levels. Characteristic of Podgorie Ia is red-slipped pottery with white painting, red painting on a white background, polychrome ceramics, and impression-decorated wares (Korkuti 1995, pls. 6, 7, 8/1–6. – Lera 2002, pls. 3–4). Barbotine pottery first appears in Podgorie Ib. A decline in painting technology might ultimately be observed in Podgorie Ic. Detailed information is only available from Trench C, evidently located on the settlement's periphery, in view of the fact that Korkuti was only able to unearth two other Early Neolithic settlement levels, these corresponding to Podgorie Ia and Ib in Trench B. The ceramic spectrum comprises monochrome red-slipped, monochrome grey-black, and painted pottery respectively. The lattermost of these technologically corresponds to that of the red-slipped ware, and is adorned with white paint. More seldom found in this area is also pottery with red painting on a white background. A typological difference between the earlier and later material noticed by Korkuti is in the quality of the pottery, which is initially monochrome and glossy, and later only matt or slightly glossy. In terms of the painting, a strident white first occurs, replaced afterwards by matt paint. The plastic-adorned wares such as those with barbotines or impressions seem to increase in number in the later levels. A more precise subdivision of the materials, for example by means of painted motifs, was not undertaken. Pottery was painted in white with stair patterns, W and zigzag motifs, and patterns characteristic of Garašanin's phase of Anzabegovo-Vršnik I (Korkuti 1995, pls. 6–7). The few vessel forms published are bellied with slightly out-turned

lips and an only slightly offset stand-ring (Lera 2002, fig. 4/1; 4/3). According to the periodisation of Korkuti, the overlying level of Podgorie II belongs to the Middle Neolithic. The form spectrum now expands considerably. Different bowl and pot forms, lids, and different forms of handles (among these simple pierced lugs and tap-like grips) are attested (Korkuti 1995, pl. 65. – Lera 2002, fig. 5). It is only in this stratum that distant connections with the horizon of Ovcharovo-Gorata may be evidenced, in light of which, the entire trajectory with the vessel painting of phases Podgorie Ia–c would seem to be older.

At the settlement of Vashtëmi, three Early Neolithic layers could also be distinguished, these yielding similar find material (Korkuti 1995, 41–57). Here, a red-slipped pottery also predominates, of which some specimens display white painting. More rarely encountered is painting in a wine-red colour on a white or ochre-coloured background. Monochrome-grey-black ware is also encountered. The plastic decorations attested include impressed and incised adornments, barbotine, and rows of applied bosses and notched cordons (Korkuti 1995, pls. XII–XV). The actual distribution of the aforementioned wares within the levels ascertained remains, nevertheless, obscure. Connections to Podgorie are demonstrated by the white painting. On the other hand, the intensified penchant for plastic decoration of the vessels would clearly prove Vashtëmi's survival beyond the close of Podgorie I.

Due to the red-slipped ceramics with white painting, Korkuti further associates the settlements of Barç and Rajcë with Podgorie I (Korkuti 1995, 57–58, 90–91). Nevertheless, he notes the scarcity of the white painted ware: this is of no small significance for an archaeological exposure of some 228 m² in dimensions. This could possibly be understood as an indication of a somewhat later chronological ascription, although the published vessel forms are less than diagnostic in this regard (Korkuti 1995, pl. 118).

The find horizon of Podgorie II is most prominently well attested in the centre of the Korça Plain at the site of Dunavec (Korkuti 1995, 95–134). Two representative settlement phases could be distinguished at the site. The earliest phase of Dunavec I comprises two domestic horizons, the older of which evidently belongs to a settlement of pile-dwellings, the later one meanwhile yielding ground-level domiciles. The find material of both horizons was published together. In addition to rock hatchets in various stages of completion and use, the damp soil conditions also preserved bone, horn, and antler tools (Korkuti 1995, pls. XXII–XXVI). The pottery from Dunavec I evidences bowls which had rounded, slightly carinated sides or were straight with conical sides, as well as bulbous pots with offset cylindrical or funnel-shaped edges, flat basins, and vessel forms on tall cylindrical pot stands (Korkuti 1995, pls. 32–39).

Also attested are bulbous vessels with offset cylindrical necks or conically tapering mouths. In terms of decoration, vertical or oblique channelling of the vessel body or the shoulders of pots may be evidenced, in addition to studded and impressed adornments on the break of carinated forms, zigzag lines, and fingernail impressions on coarse pots (Korkuti 1995, pls. XXXI–XXXIII, XXXV, 32/7; 33/3, 5–10; 34; 38/8, 10). A few fragments are painted with linear patterns in a grey colour (Korkuti 1995, pls. XXXIV, 32/1–3; 33/4).

Dunavec II's upper bundle of levels can be divided into three residential horizons, defined according to their preserved structures. Once again, however, the find material originating from here was presented together. This describes a further development of the forms from Dunavec I. Among the earlier bowl forms that continue to survive may also be found bowls that have sweeping funnel rims. A stronger profiling of the forms is generally to be noted (Korkuti 1995, pls. 43–47). In terms of vessel decoration, the typical double cordons further develop into a motif resembling a coffee bean. These may be found on the vessel body or at the break of carinated forms. This area can also be highlighted by means of impressions, simple knobs, warts, or plastic rings (Korkuti 1995, pls. XXXVIII–XXXIX). The incised decoration is now very finely accomplished, and includes complex patterns of net-filled triangles (Korkuti 1995, pl. XLI). Also commonplace are the expansive channelled decorations and the covering of vessels with barbotines (Korkuti 1995, pls. XL, XLII– XLIII). Painting is now found in matt wine-red colour on a grey-greenish background, red-brown on a wine-red background, or in grey colour on a black background. The painting motifs are simple parallel line patterns combined with triangles painted in the open spandrels (Korkuti 1995, pl. XLIV).

4.9. Summary of the Neolithisation of North Macedonia and Eastern Albania

It should hence have become evident that a comparable form spectrum emerges within the entire zone of the southern Balkan region during the developed Early Neolithic; this indicates more intensive contacts stretching from the western Balkans to the Black Sea over the course of the first half of the 6th millennium BCE. Admittedly, these contacts only develop after the neolithisation, and are based upon long distance communication between the individual groups. When the highly contoured landscape divided by the high mountains of (most prominently) the southern Balkan zone between the Albanian Alps (Prokletije), North Macedonia,

Rila, Pirin, the Rhodopes, and the Balkans is taken into consideration, then these contacts are quite astonishing.

From the 57th century BCE (at the very latest) onwards, a remarkable mobility within this region must ultimately be inferred, with this having developed entirely independently from the 'old' maritime networks of the Aegean. Initially, only the zone of the Vardar is affected by the primary neolithisation, together with Pelagonia via the plains of Aliakmon. The point of departure seems to be the SMAB zone encompassing the entire river valley. The area of the great Macedonian lakes further west seems, by means of contrast, only to have been neolithised at all during the first centuries of the 6th millennium BCE. Similar to the Struma Valley, the original impetus for neolithisation emerges from the maritime networks of the Aegean, and might still be charted with great clarity. In addition to the comparison of ceramics, important evidence of this is to be found in the architectural features from Anza II and from the Tumba Mađari, as well as the commonplace use of spondylus originating from the Aegean for jewellery manufacture.

As is also the case for the neighbouring valley of the Struma to the east, the question as to the transmitters of the Neolithic into the Vardar zone and Pelagonia must be addressed. It is scarcely conceivable that the first herds of sheep, goats, and cattle reached the interior without herdsmen and solely by means of exchange. The appearance of a comprehensive Neolithic package encompassing cultivars, domesticated animals, and highly developed pottery and building techniques can only be explained by means of the immigration of a population group already operating entirely according to the Neolithic model. While this population must have arrived from overseas, it is remarkable how, in such a short space of time, the Neolithic, while now confined to land routes, was still able to travel down the narrow river valleys of the highlands. Any potential trace of a pre-Neolithic settlement of Greek Macedonia, North Macedonia, and eastern Albania remains, as yet, undetected, meaning that such settlement either never existed or (more likely) played almost no archaeologically tangible role in the primary expansion of the Neolithic into this region.

5. Early Neolithic in Thrace

If we now look at the Thracian region bordering the Aegean to the north-east, the methodological difficulty is that we can only record contacts between western Anatolia and the Aegean, on the one hand, and Thrace, on the other, after the neolithisation (Fig. 78). The problem of the general absence of Epi-Palaeolithic/Mesolithic sites has already been discussed. Directly connected to this is also the difficult question about how the neolithisation was accomplished, and, very specifically, by means of which groups it was transported. Due to the lack of information about pre-Neolithic settlement in further parts of the Balkans, in the simplest scenario it might be supposed that there was immigration of Neolithic groups from central western Anatolia. Such a stance can, however, neither be proven nor disproven. However, there is a noticeable transformation of the Neolithic package, which cannot be explained simply by a rapid adaptation to the changed geographical and climatic conditions in the areas north of the Aegean. In the Balkans, fundamentally different and much more rudimentary forms of structure appear with the neolithisation which cannot be compared to central western Anatolia's mudbrick architecture on stone socle foundations. The Balkans' environment provides the necessary building material in abundance, and such an architectural form would also be climatically sensible there. Despite this, no house types from Thrace have been found which are even remotely related to the solid house types of central western Anatolia. The clear reduction in the expenditure of labour in the erection of Early Neolithic houses in the Balkan region could either point to an earlier, local tradition involving the building of simpler houses or huts, or suggest that the settlers from western Anatolia were for one reason or another unable to import their tried and tested construction style into the Balkans. In any case, communication within the expansion into the north must have shifted once more from a maritime network to an overland form of transmission.

5.1. The Thracian Plain and the Lower Tundzha Region

In close geographical proximity to the Marmara region, near the town of Kırklareli in Turkish Thrace, may be found the settlement mound of Aşağı Pınar. In terms of natural geography, the north-western part of modern-day Turkey already belongs to the Thracian Plain, through which the Maritsa flows. The mound of Aşağı Pınar lies on the south-western slope of the Strandzha/Istranca mountain range which marks the border with Bulgaria.

The Late Neolithic pottery from Aşağı Pınar demonstrates a highly independent character comparable with material from the site of Toptepe on the northern coast of the Marmara Sea (Özdoğan, Miyake, Özbaşaran Dede 1991, 75–81). Here, large jugs with a cylindrical neck markedly offset from the body, a falling shoulder, and a conical underside may be taken to be a signature form (Özdoğan, Miyake, Özbaşaran Dede 1991, figs. 20/1–3; 22/2–3, 5, 8). Specific to here is also the decoration of the vessels with linear patterns incised with a pointed implement after firing (see Chapter 3.6 with Fig. 56). Therefore, it would also be expected that the earlier material displays a connection with the finds from the Marmara region. The extensive ongoing excavations were only able to reach the Middle and Early Neolithic levels in recent years. Currently, only the finds from the upper levels of 2 to 5/6 have been published, these corresponding to the South-eastern European Late and Middle Neolithic, together with selections

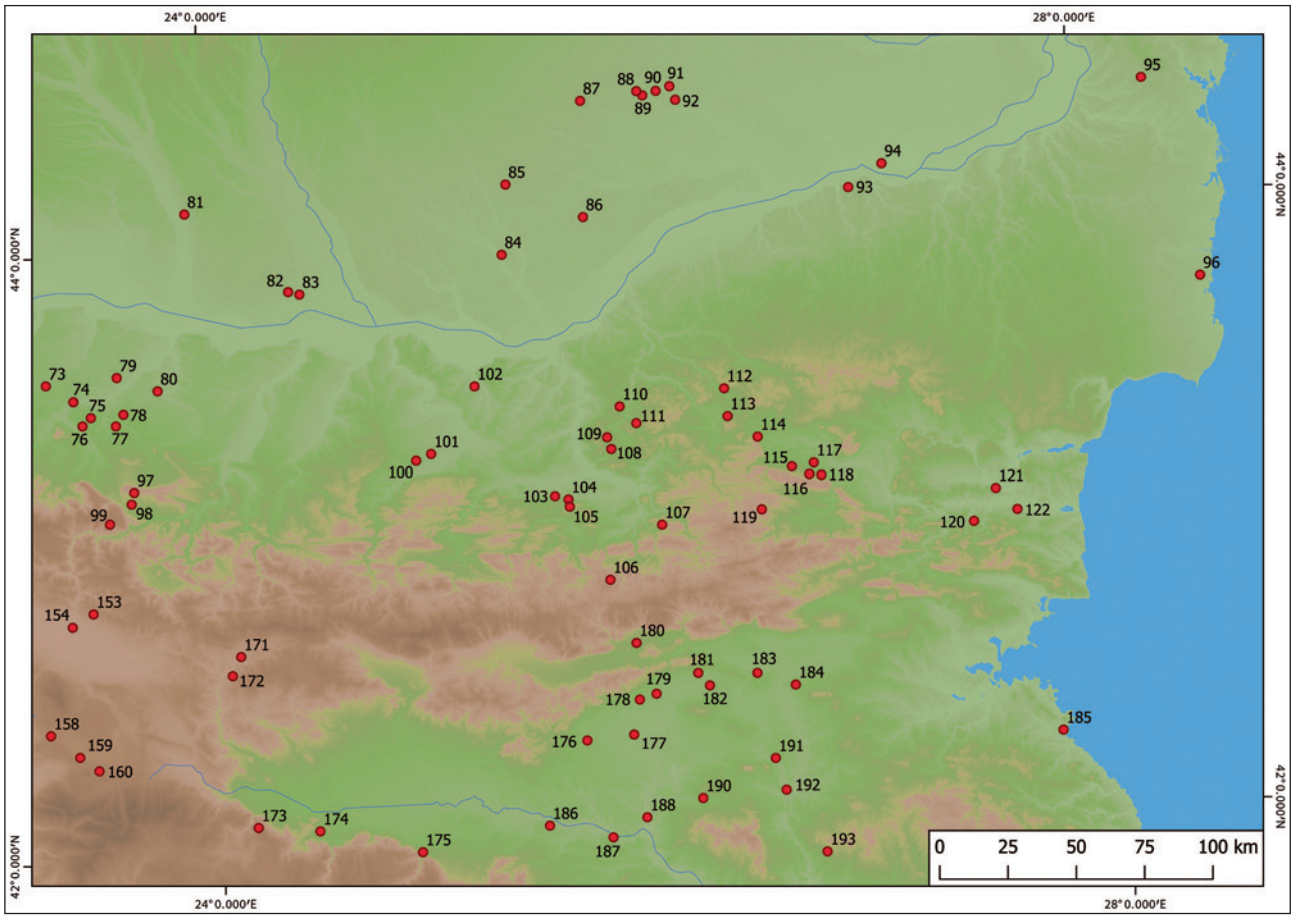


Fig. 77: Map of Early Neolithic sites in the eastern Balkans. – 73. Gradeshnitsa-Malo Pole and Gradeshnitsa-Lukanovo Darvo. – 74. Devene. – 75. Ohoden. – 76. Banitsa. – 77. Tlachene. – 78. Komarevo. – 79. Altimir. – 80. Byala Slatina. – 81. Cîrcea-La Hanuri and Cîrcea-Viaduct. – 82. Vădastra. – 83. Grădinile-La Islaz. – 84. Măgura Buduiasca. – 85. Dulceana. – 86. Drăghiceanu. – 87. Bolintineanu. – 88. Giulești. – 89. Dudești. – 90. Malu Roșu. – 91. Fundeni. – 92. Cernica. – 93. Malak Preslavets. – 94. Boian. – 95. Medgidia-Cocoașă. – 96. Durankulak-Nivata. – 97. Zakonitsa. – 98. Beshovitsa. – 99. Rebarkovo. – 100. Devetaki Cave. – 101. Krushuna. – 102. Balgarsko Slivovo. – 103. Hotnitsa Cave, Hotnitsa Waterfall and Hotnitsa Bear's Hole. – 104. Samovodene. – 105. Small and large caves at Preobrazhenski Monastery. – 106. Golyamata Lisitsa, Plochite and small and big cave at Veliko Tarnovo. – 107. Dzhulyunitsa. – 108. Strelets-Eren Bunar. – 109. Orlovets. – 110. Chakmaktepe. – 111. Koprivets. – 112. Pomoshtitsa. – 113. Drinovo. – 114. Podgoritsa. – 115. Polyanitsa-Platoto. – 116. Ovcharovo-Platoto. – 117. Ovcharovo-Gorata. – 118. Ovcharovo-Zemnika. – 119. Zelena Morava. – 120. Usoe. – 121. Dalgopol-Balkuzu. – 122. Golyamo Delchevo. – 123. Karagač-Žitkovac. – 124. Rudnik. – 125. Gladnice. – 126. Pavlovac-Gumnište and Pavlovac-Čukar. – 127. Tumba Stenče. – 128. Na Breg. – 129. Tumba Mađari. – 130. Govrlevo. – 131. Zelenikovo. – 132. Rug Bair. – 133. Anzabegovo. – 134. Vršnik. – 135. Grnčarica. – 136. Kutline. – 137. Radin Dol. – 138. Čuka. – 139. Rayc. – 140. Veluška Tumba and Porodin. – 141. Podgorie. – 142. Dunavec. – 143. Vashtëmi. – 144. Barç. – 145. Nea Nikomedeia. – 146. Thessaloniki. – 147. Thermi. – 148. Servia. – 149. Achilleion. – 150. Sesklo. – 151. Otzaki. – 152. Argissa. – 153. Kremikovtsi. – 154. Slatina. – 155. Pernik. – 156. Priboy. – 157. Negovantsi. – 158. Galabnik. – 159. Kraynitsi. – 160. Sapareva Banya. – 161. Nevestino. – 162. Vaksevo. – 163. Balgarchevo. – 164. Eleshnitsa. – 165. Dobrinishte. – 166. Kovachevo. – 167. Toumba Serron. – 168. Sitagroi. – 169. Dikili Tash. – 170. Kryoneri. – 171. Chelopech. – 172. Chavdar. – 173. Rakitovo. – 174. Kapitan Dimitrievo. – 175. Muldava. – 176. Kaloyanovets. – 177. Sarnevo. – 178. Azmak. – 179. Stara Zagora-County Hospital. – 180. Kazanlak. – 181. Karanovo. – 182. Ezero. – 183. Glufishevo. – 184. Veselinovo-Maleva Mogila. – 185. Primorsko. – 186. Yabalkovo. – 187. Nova Nadezhda. – 188. Simeonovgrad-Chavdarova Cheshma. – 189. Lyubimets. – 190. Mednikarovo. – 191. Drama-Gerena, Drama-Kayryaka and Drama-Merdzhumekya. – 192. Knyazhevo-Rovnishte. – 193. Lesovo-Spring and Lesovo-Dyadopaneva Vodenitsa (R. Krauß).

from the Early Neolithic material of Level 6 (Karul et al. 2003. – Parzinger 2005). Even earlier levels (7 and 8) are currently being unearthed; these levels seem to herald the beginning of the Neolithic in the region (Özdoğan 2011. – Özdoğan E. 2011). The material from Level 6 corresponds to the mainstays of the horizon of Karanovo II, namely extensively channelled tulip beakers on high feet (Özdoğan 2011, figs. 2/5; 3–4), and vessels with strap handles applied

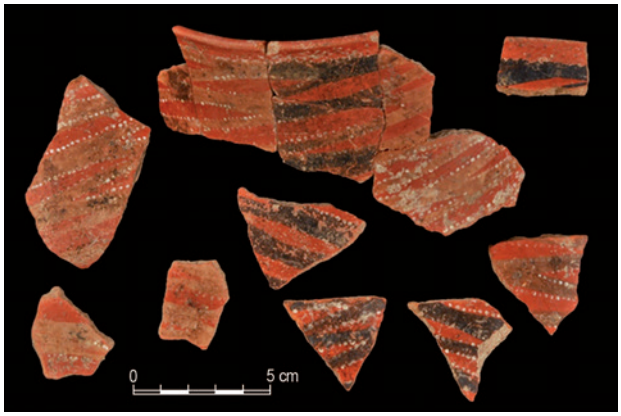


Fig. 78: Aşağı Pınar 7. Bichrome painted sherds (after Özdoğan 2011, fig. 11).

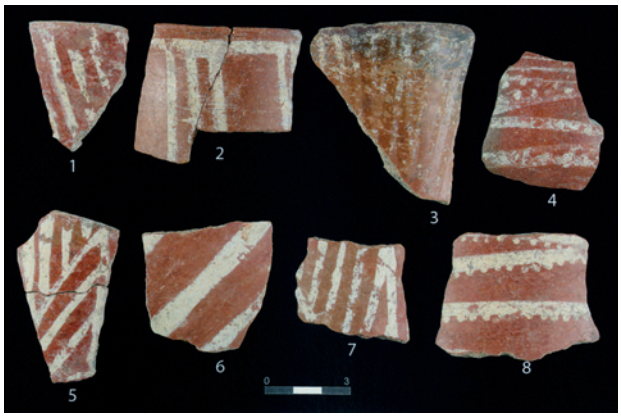


Fig. 79: Aşağı Pınar 6. White-on-red painted pottery fragments (after Özdoğan E. 2011, fig. 11).



Fig. 80: Aşağı Pınar 6. Ceramic vessels (after Özdoğan E. 2011, fig. 10).



Fig. 81: Aşağı Pınar 7/8. Impresso decorated vessel (after Özdoğan 2011, fig. 13).

to their sides (Özdoğan E. 2011, fig. 10/2, 4). Level 7 at Aşağı Pınar can be parallelised with Karanovo I by means of the classic white-on-red painted pottery and linear black painting with accompanying white spots (Özdoğan 2011, figs. 10–11) (Fig. 78). Nevertheless, white-on-red painting quite evidently already appears during Aşağı Pınar 7 (Özdoğan E. 2011, fig. 6) (Fig. 79). Tulip cups, various bowl shapes, and spherical jugs with a recessed cylinder neck are typical forms of the early Balkan Neolithic (Fig. 80). A black polished fabric with impression ornaments seems foreign to Thrace, and could be one of the few things adopted from the Neolithic period of the Marmara region (Fig. 81).

The finds are comparable to those of the earlier material from Koprivets in northern Bulgaria. This comprises a ware which is dark black in cross-section with various organic inclusions, the surface of which is coated with a colourful (often brown-toned) slip. Also significant are the recent finds from Aşağı Pınar 8, as no pottery this early in date has been identified within the Maritsa's entire catchment area until now. The absence of the earliest pottery within the Thracian plains indicates that neolithisation travelled via the Central Balkans (Todorova 1990. – Nikolov 1990. – Todorova, Vaysov 1993, 59–62). With proof of earlier ceramics within the Strandzha region, this picture is now being changed. Remarkably, no clear connections southwards can yet be established, with the evidence tending to point northwards, which would support the notion that this region first came into contact with pottery with the neolithisation of the Balkans. In fact, however, there is an interruption of settlement of at least 200 years between the layers AP6 and AP5, which is parallel to Karanovo II/III and early Karanovo III. The development of vessel forms from Aşağı Pınar 5 to 2 may be taken as exemplary for the entire watershed of the Maritsa, and permits a solid grasp of the typological transformations of Subphases Karanovo late III, and III/IV. Regardless, due

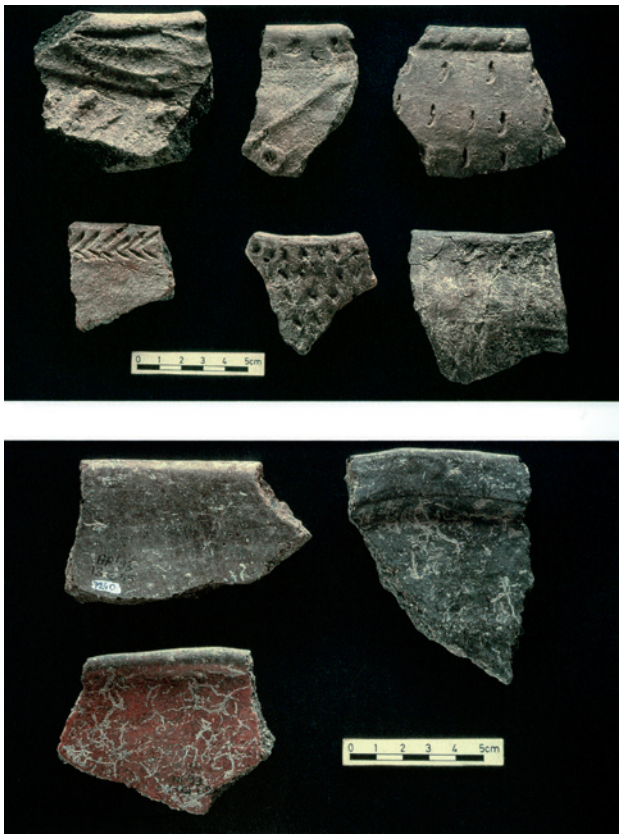


Fig. 82: Aşağı Pınar 5. Pottery examples (after Parzinger 2005, pl. 134).

to its mostly uncertain find contexts, the material from Bulgaria as yet published has not been presented in differentiated enough a way that any such determination could be justified (cf. Nikolov 1998). The pottery from Aşağı Pınar 6 may clearly be delineated against that of the later stages, and might be parallelised with Karanovo II, where (at the very least) the pots with cylindrical necks, various bowl and pot forms, and vessels with tap-like handles as known from Ovcharovo-Gorata can be attested accordingly (Parzinger 2005, pls. 116–117). Similarities in adornment may be noted in the characteristic bands filled with impressions (Parzinger 2005, pls. 116/4; 117/11, 13–14) frequently found upon lid forms (Parzinger 2005, pl. 117/11, 14).

A fragment with plissé channelling is further indicative of this period (Parzinger 2005, pl. 117/15). Nevertheless, three fragments of vessels on tall foot-stands with white painting on a red-slipped background are to be dated somewhat earlier, with these being attributable to the horizon of Karanovo I (Parzinger 2005, pl. 117/8–9, 12).

Aşağı Pınar 5 displays a broad spectrum of dish and bowl forms which might be associated with the late material of Karanovo III (Fig. 82). Equally significant for this chronological stage are numerous grip handles (Parzinger 2005, pls. 101/7–12; 102/1–4), which would have belonged to characteristic Karanovo III beakers (Nikolov 1998, pls. 1/18–27; 2/15). Remarkable is the appearance of carinated bowls as early as Aşağı Pınar 5/6 (Parzinger 2005, pl. 115/4–6), which are only typical at Karanovo starting from Horizon III/IV (cf. Nikolov 1998, pls. 16/8–13; 17). A glimpse at the statistics is instructive here (Parzinger 2005, tab. 8) as from these it might be adduced that shallow dishes with inwardly bent and outwardly grooved rims and carinated dishes certainly appear in all levels of Aşağı Pınar, but only occur frequently in the earlier levels of 5 to 4. This example demonstrates once again how relevant not only the mere presence or absence of a ceramic form is, but also, in fact, how far more relevant its frequency within differing layers might be. The fact remains that carinated bowls are also still attested in the later levels of 2 to 3, although they decrease in favour of a variant with a more prominently exposed upper half. Until now, shallow bowls with inwards-turned, outwardly grooved rims have been taken as a hallmark of the Bulgarian Late Neolithic, a paradigm which, while not completely disproven by analysis of finds from Aşağı Pınar, is now certainly in desperate need of renewed inspection. These forms still occur during Aşağı Pınar 2 to 3, albeit their proportion within the find record generally decreases. By means (most prominently) of comparison with the settlements of Drama-Kayryaka and Drama-Merdzhumekya, the material from the latest levels of Aşağı Pınar 2 and 3 is parallelised by Parzinger with the horizon of Karanovo IV, as only heavily fragmented vessels have been uncovered from Karanovo itself, even during recent excavations.

The settlement plan of Aşağı Pınar 6 demonstrates a type which is well attested within the Marmara region: tightly constructed rows of houses arranged in a crescent. Nevertheless, the construction method is already considerably simplified (Fig. 83). The walls are of wattle-and-post construction with clay daubing, the usual building technique of the Balkan Early Neolithic. The structure can only presently be associated with the Marmara region, as such settlements formed of crescent-shaped housing rows are unknown within the Balkans. This renders the change in building technique even more astonishing. It will be extremely revealing to learn more in future about the structures within the levels of Aşağı Pınar 7 and 8. Most likely, the background for the "Marmara tradition" of settlement structure and the Balkan origins of these walls will be better understood through this.

As yet, hardly any Early Neolithic finds are known from the lowlands between the massifs of the Srednogorie and the Rhodopes. Quite evidently, find preservation has

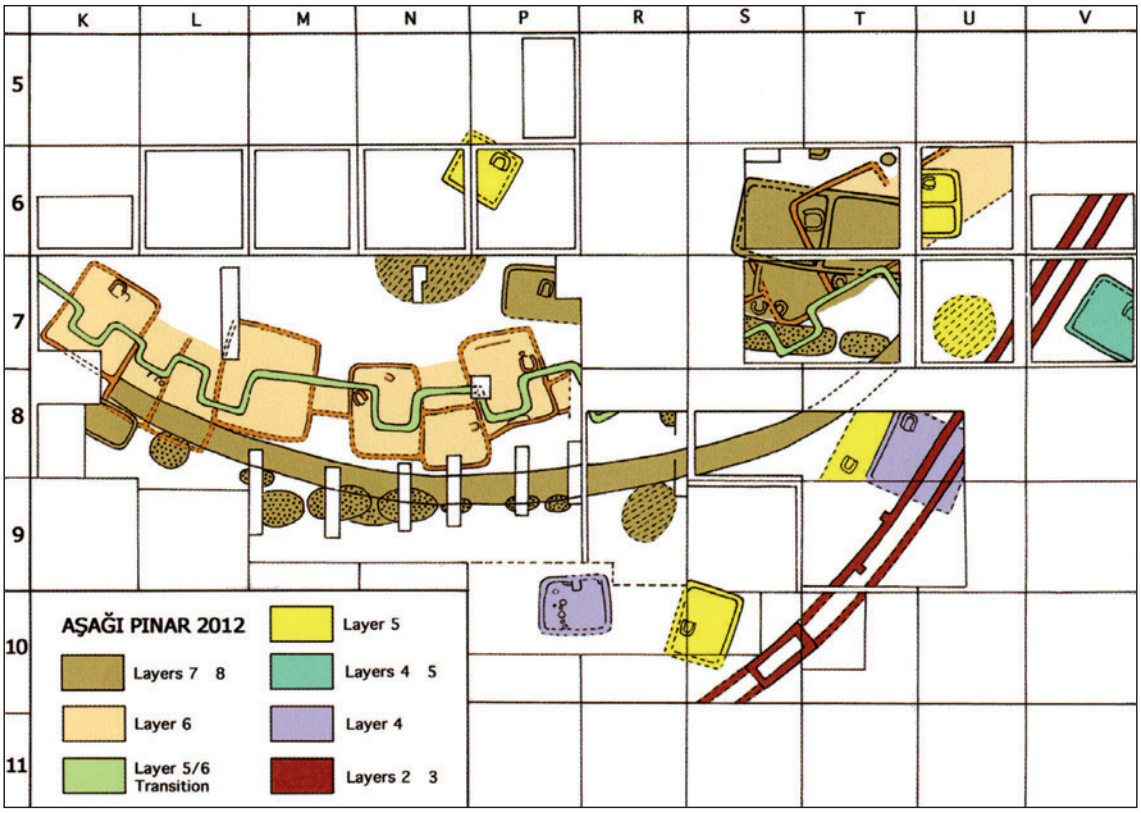


Fig. 83: Aşağı Pınar. Plan of the different Neolithic settlement features (after Özdoğan 2013, fig. 103).

been rendered more complicated by extensive sedimentation from the river Maritsa. It is only from the hilly transitional zone approaching the Strandzha Mountains in eastern Thrace that some finds are extant.

Indeed, Nikolov, for example, has reported upon finds from Mednikarovo, which he attributes to the phases of Karanovo II and Karanovo III/IV (Nikolov 1998, 48–49). By means of contrast, the finds from Knyazhevo-Rovnishte, a site on the lower Tundzha which was discovered by the work group centred around Jan Lichardus during long-term research in the region of Drama near Elhovo, are older (Lichardus, Iliev, Christov 2002, 338, pls. 1–5). Field surveying yielded ceramics with white painting on a red background and characteristic sherds with impressed, incised and channelled decoration; these are attributable to the phases of Karanovo I and II. By means of some fragments with red-brown painting, further collected finds from the field termed "spring channel" near Lesovo could be associated with Karanovo II (Lichardus, Iliev, Christov 2002, 338 and pl. 6). While the fragments from Knyazhevo-Rovnishte may, in fact, be neatly compared with those from Ovcharovo-Gorata and Karanovo II by means of their incised decorations, the published finds from the Lesovo "spring channel" can hardly confirm this ascription due to the absence of any manner of incised or impressed decorations. It is only from the multiphase sites within the fields of Merdzhumekya, Gerena, and Kayryaka near Drama that stratigraphically significant information might be gleaned.

The earliest settlement is evidenced from Drama-Gerena A, where material from the phases Karanovo II and III was found in multiple pits (Lichardus et al. 2000b, 110–113). Only a small triangular miniature table with a checkerboard impasto decoration on its outer surfaces (which can be assigned to the phase of Karanovo II without difficulty) has been published from there as yet (Lichardus et al. 2000b, fig. 43). Two further settlements also from the basin of Gerena (B and C) yielded finds from the phases of Karanovo III and IV. Independent from observations at the mound of Karanovo, the finds of the region around Drama permit a subdivision of phases Karanovo III and IV into subphases which Lichardus, retaining the traditional Karanovo terminology, names Karanovo II/III, IIIa and IIIb, and IVa to IVc. His Phase II/III corresponds to Nikolov's Karanovo II/III, although almost no material from this chronological horizon has been discovered in the vicinity of Drama itself (with the exception perhaps of the finds from Gerena A). Lichardus' level of Karanovo IIIa

is considered by him to be present at the sites in the basin of Dyadopaneva Vodenitsa at Lesovo, in Knyazhevo-Rovnishte, and from Veselinovo on the Maleva Mogila. The published material from Lesovo-Dyadopaneva Vodenitsa and Knyazhevo-Rovnishte is so heavily fragmented that there are almost no forms which might be reconstructed in their entirety (Lichardus, Iliev, Christov 2002, pls. 8–9).

Perhaps characteristic is the pronounced incised decoration still reminiscent of the adornment techniques during Karanovo II. The material from the Maleva Mogila is distributed by Nikolov between his levels Karanovo II/III, III, and III/IV. Nevertheless, this find material is heterogeneous, very generally comprising of forms to be associated with classical Karanovo III (Lichardus, Iliev, Christov 2002, pl. 10. – cf. Nikolov 1992). Insofar, Lichardus' horizon of Karanovo IIIa remains enigmatic. His level of Karanovo IIIb is only well attested at the site of Drama-Gerena B (Lichardus, Iliev 2001, figs. 8–10). Flat bowls with thickened and channelled rims, early carinated bowls, and characteristic beaker forms with broad undersides narrowing to a mouth permit a parallelisation with Karanovo III. The subdivision of the Karanovo IV phase is still not very convincing, since each individual subphase is found in different places. As a result, their relative chronological relationship remains difficult to comprehend.

A few white painted sherds from the lowest settlement level of Chavdarova Cheshma (Simeonovgrad) may be associated with Karanovo I (Radunčeva 2002, pls. 1–5). A Middle Neolithic settlement with typical Karanovo III material overlays these. Recently, additional finds from Chavdarova Cheshma have been published which might be connected with the later Neolithic settlement (Boyadzhiev et al. 2008). With forms such as bowls with thickened and incised decorated rims, and vessels with taplike handles, these support a synchronisation with Karanovo III (Boyadzhiev et al. 2008, pls. II/1–6; III; VIII/7, 9–11, 14–18). On the other hand, the presence of numerous fragments with incised and impressed decorations in combination with plastic applications demonstrates a continuation of earlier elements already characteristic of Karanovo II (cf. Boyadzhiev et al. 2008, pls. VI; VII/1–10; IX).

It should thus have become apparent that only ceramic adornment might be meaningfully compared. The structures of all the aforementioned settlements on the Thracian Plain consist, as far as sources are available, solely of post, wattle, and daub. Only the settlement of Aşağı Pınar 6 displays a construction plan in the tradition of the Marmara region, albeit these structures were realised by means of post, wattle, and daub techniques.

5.2. Srednogorie

Somewhat better attested is the archaeological record on the hilly northern edge of the Thracian Plain, the southern piedmont of the Balkan chain, and the Srednogorie. With a sequence of deposits some 12.40 m in height and a surface area of some 3.7 ha, the settlement mound of Karanovo is one of the largest tells in Europe. Smaller sondage excavations on the mound took place during 1936 (Mikov 1937); thereafter the tell was extensively investigated from 1947 to 1957 by Vassil Mikov and Georgi Georgiev. A first publication of the levels identified at Karanovo was presented by Mikov in 1958. He subdivided the cultural sequence into five levels, according to which Level I should reflect the Middle Neolithic, Level II the Late Neolithic, Levels III to IV the Chalcolithic, and Level V the Bronze Age (Mikov 1958). That the parallelisation of the levels with further sites in the Aegean and the Balkan region seems outlandish today is ultimately derived from an erroneous synchronisation between Troy and Vinča (Todorova 1981, 203). Karanovo became super-regionally well-known due to the presentation of the settlement stratigraphy by Georgiev at a congress on the Late Stone Age held in 1959 in Prague, published two years later (Georgiev 1961). While more recent research has since brought about crucial alterations in the subdivision of the phases of prehistory, the system based upon seven settlement horizons established in 1961 has essentially withstood the test of time (cf. Krauss 2008). The stratigraphic sequence presented a framework for the early prehistory of South-eastern Europe for the first time; prior to this, connections of European prehistory with the civilisations of the ancient Near East had only been established by means of comparative methods through sequential dating (cf. Childe 1929. – Milojčić 1949). Once vital discoveries from other tell settlements had been incorporated within South-eastern Europe's cultural history, Henrieta Todorova was able to order the Karanovo sequence within the broader trajectory stretching from the Neolithic to the Early Bronze Age. She could demonstrate that the earliest level of Karanovo I must have been preceded by a yet older Early Neolithic period to which she ascribed the finds from her own excavation at Polyanitsa-Platoto (region of Targovishte). Todorova considered the transition from Karanovo I to II to be a constant development. Thereafter, between Karanovo II and III, she recognised a first interruption of the settlement, which should correspond to an otherwise unattested level Karanovo II/III only recorded on the mound of Kazanlak (Georgiev 1974). The seven-stage chronological system of Georgiev was thus compromised, although the traditional seven-part nomenclature was nevertheless retained. This

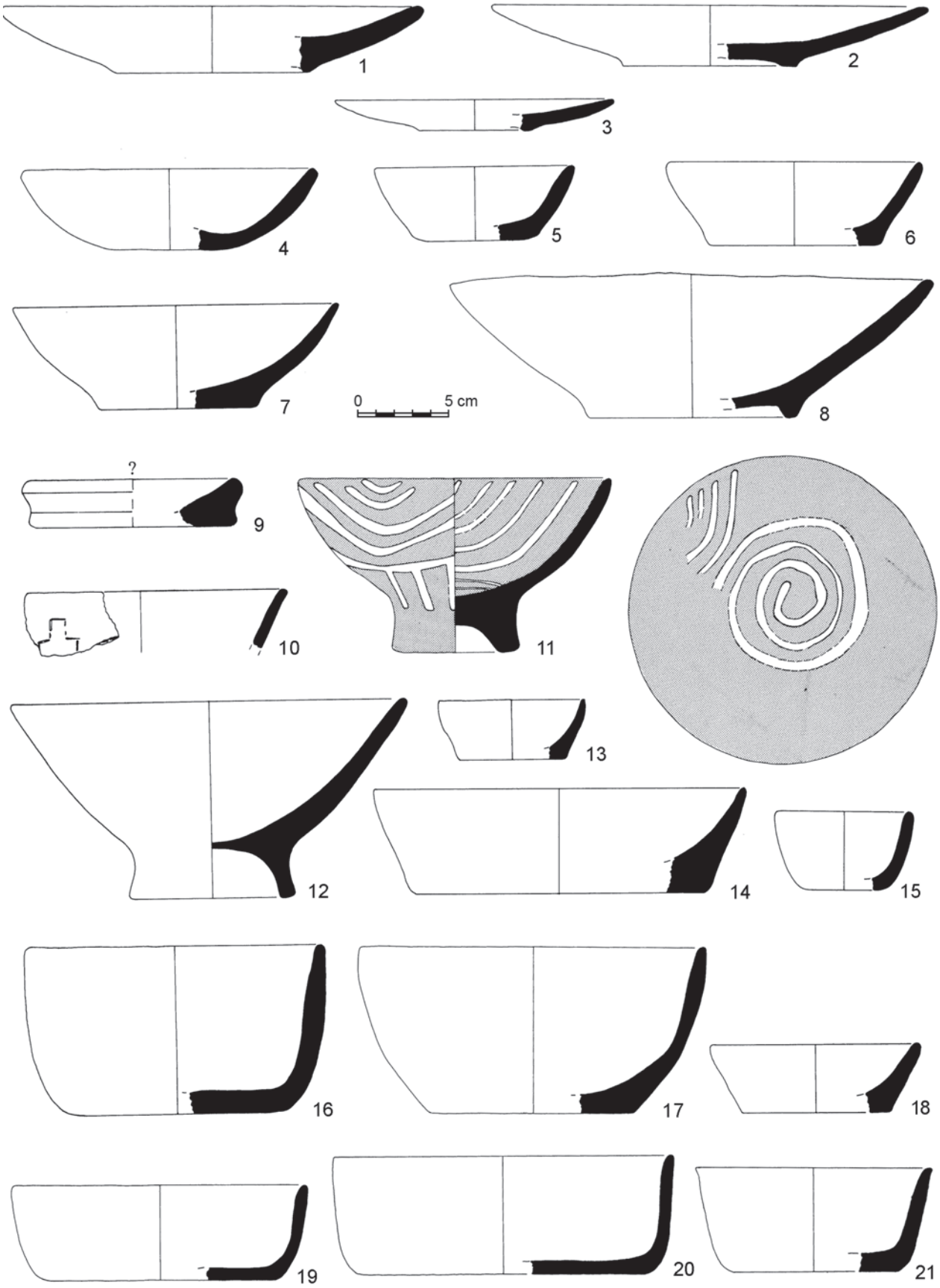


Fig. 84: Karanovo I. Pottery (after Hiller, Nikolov 1997, pl. 63).

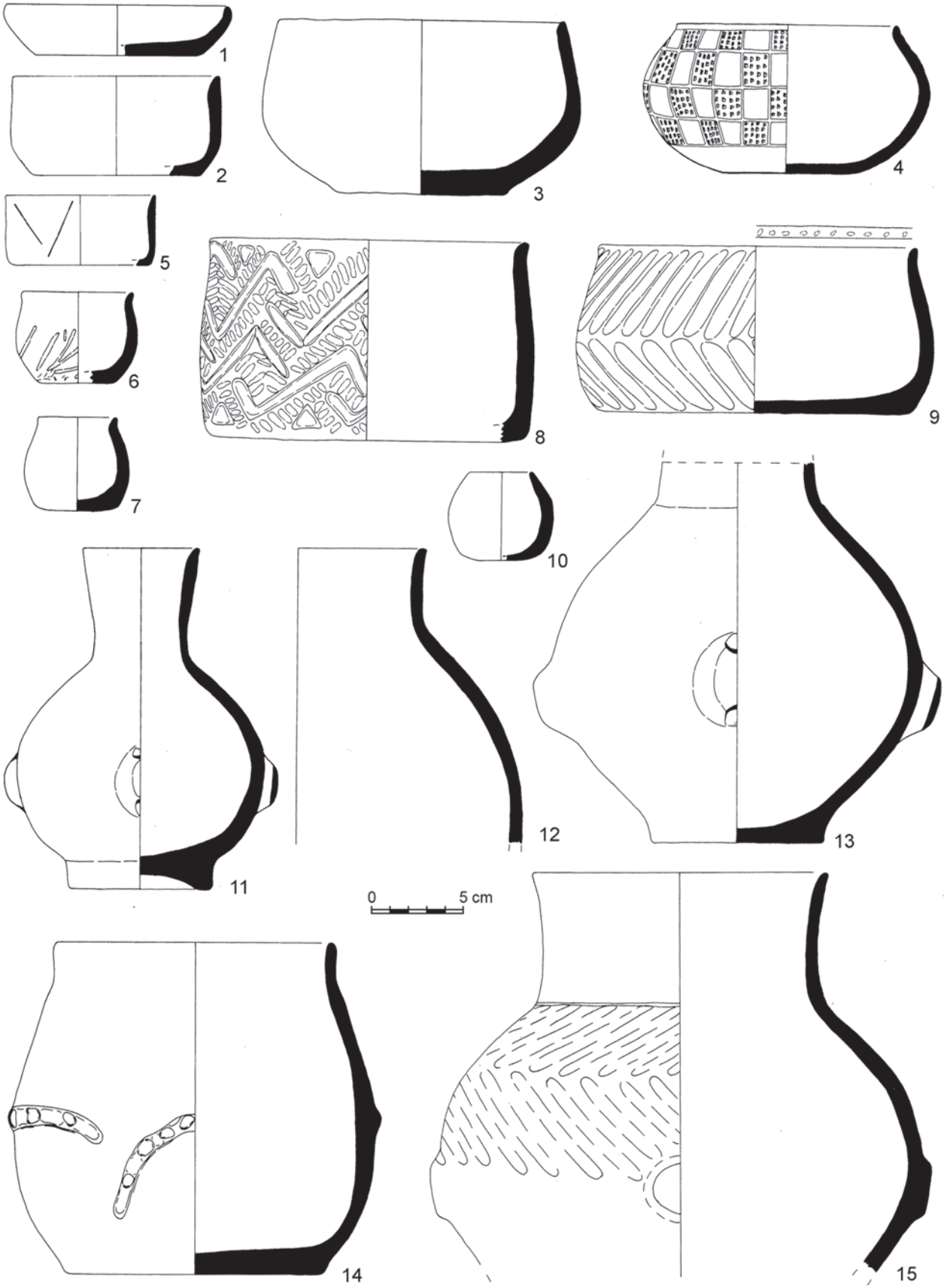


Fig. 85: Karanovo I. Pottery (after Hiller, Nikolov 1997, pl. 64).

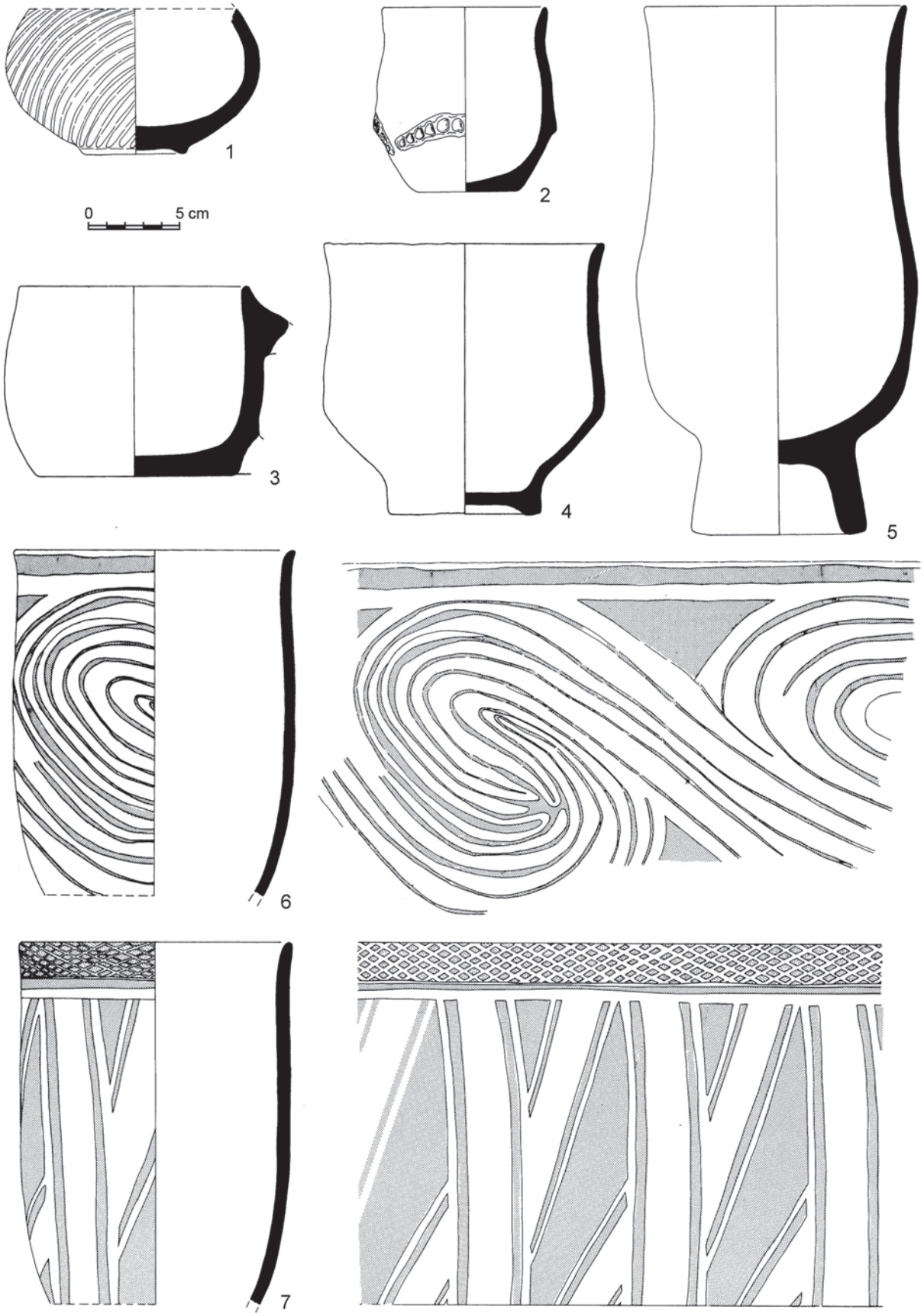


Fig. 86: Karanovo I. Pottery (after Hiller, Nikolov 1997, pl. 65).

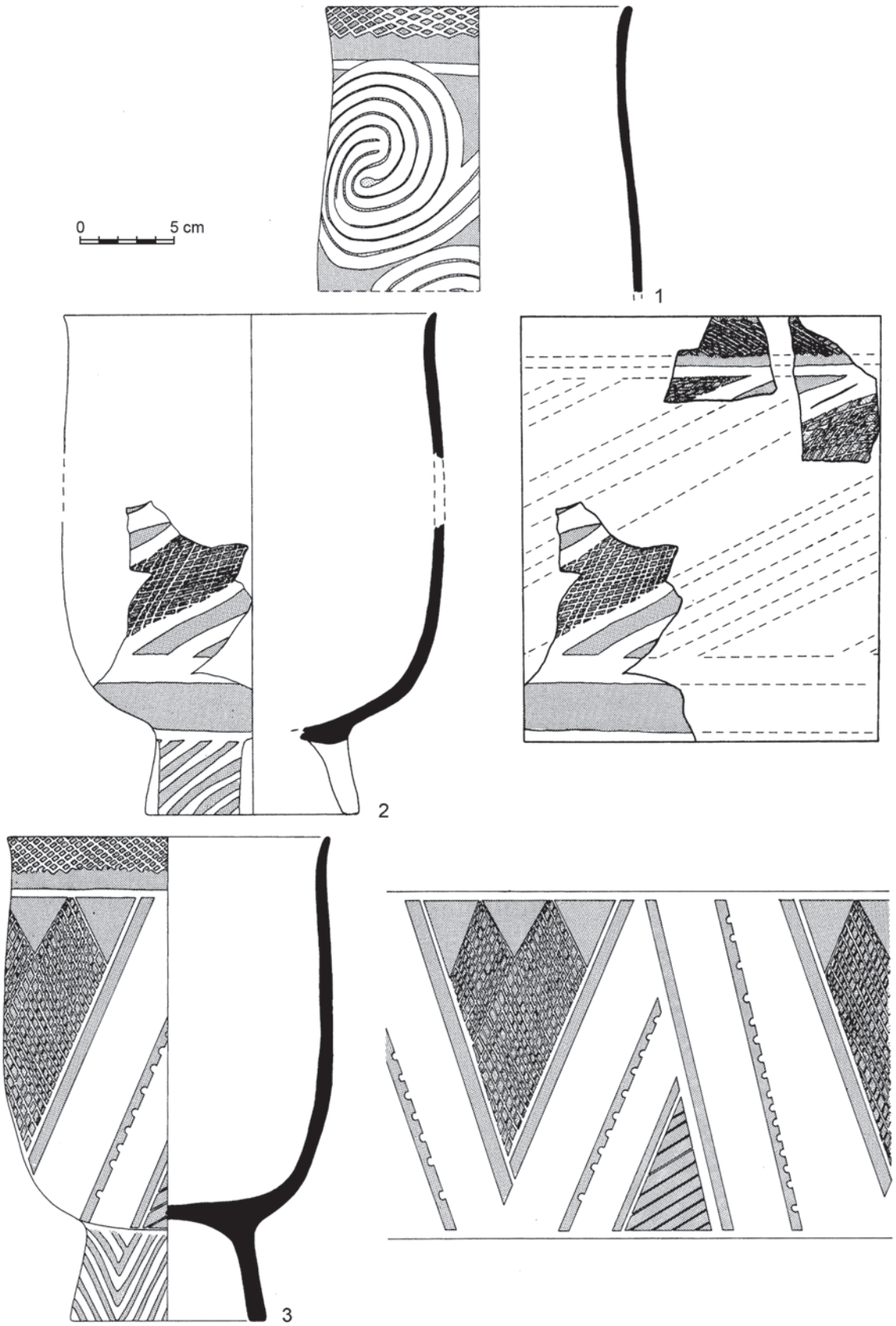


Fig. 87: Karanovo I. Pottery (after Hiller, Nikolov 1997, pl. 66).

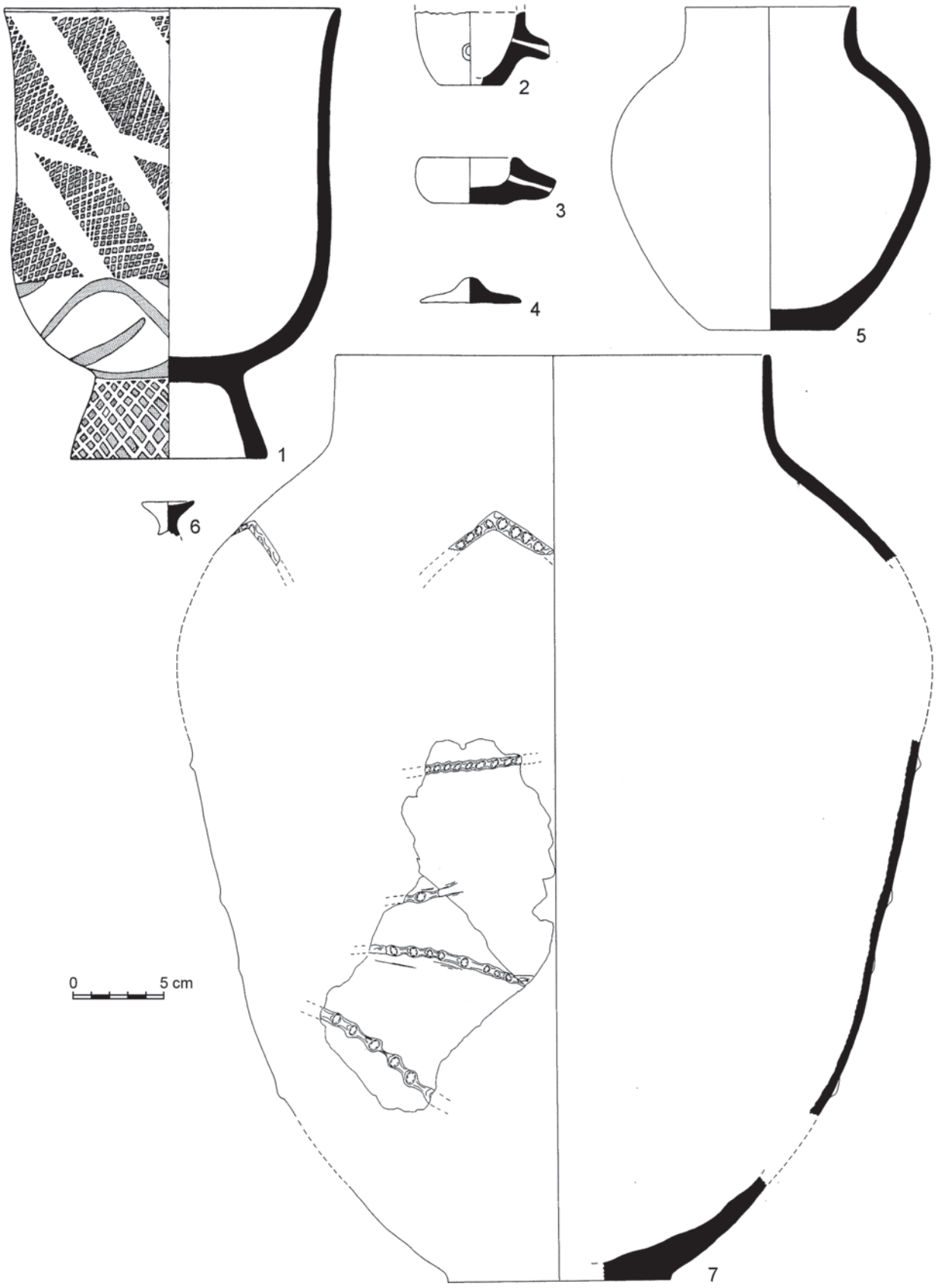


Fig. 88: Karanovo I. Pottery (after Hiller, Nikolov 1997, pl. 67).

was unproblematic as Transitional Horizon II/III initially did not refer to Karanovo itself, but rather solely to the finds from Kazanlak. Confusion in the designation of the horizon only arose later as Horizon II/III was attested on the mound of Karanovo (Nikolov 1996b, 136–141. – Nikolov 1998, 23–56). A continuous development could thus be assumed once again for the lowest horizons at the very least. Nevertheless, Todorova also identified interruptions between the horizons of Karanovo IV and V and between VI and VII, both of which were of considerable duration. According to Todorova, the abandonment of the mound between Karanovo IV and V corresponds to the Maritsa culture, first appearing in its latest phase of Maritsa IV on the mound as Karanovo V. The long settlement intermission following the Chalcolithic level of Karanovo VI is also generally academically accepted. Thereafter, the mound was settled again during the Early Bronze Age (Karanovo VII), and afterwards permanently abandoned. The resumption of the excavations at Karanovo between 1984 and 1999 by the Bulgarian Archaeological Institute in collaboration with the University of Salzburg led to a scrutiny and partial re-evaluation of the chronology (Hiller, Georgiev 1984. – Hiller, Georgiev 1985. – Hiller, Georgiev 1986. – Hiller, Georgiev 1987. – Hiller, Nikolov 1988. – Hiller, Nikolov 1989. – Hiller, Nikolov 1990. – Hiller, Nikolov 1991. – Hiller et al. 1992. – Hiller, Nikolov 1994. – Hiller, Nikolov 1995. – Hiller, Nikolov 1997. – Hiller, Nikolov 2000. – Hiller, Nikolov 2002. – Krauss 2008). The modification of the traditional sequence of Karanovo I to VII by Nikolov renders the stratigraphy of Karanovo as the key sequence for the cultural trajectory on the eastern Balkan Peninsula far more complicated than previously thought (cf. Nikolov 1998).

The oldest settlement at Karanovo has yielded pottery that was considered the earliest ware north of the Aegean until the discovery of the horizon of Proto-Starčevo (cf. Vajsova 1966, 8–9). This pottery is characterised by an extensively applied red slip, and (more seldom) painting with white pigment. The majority of the ceramics are, by means of contrast, largely unpainted. Regional differences may also now be discerned in greater quantities than among the Proto-Starčevo Complex, this pertaining not only to painted patterns but also to vessel forms (Figs. 84–88). Tall, cylindrical beakers on tall, internally hollow feet (so called tulip beakers) serve as a signature form of the Karanovo style within the complete distribution of the white painted pottery (cf. Hiller, Nikolov 1997, pls. 65/5–7; 66; 67/1). By means of the pronounced positioning of the feet, the Karanovo I forms may be particularly easily differentiated from the earlier material from northern Bulgaria such as from Koprivets and Polyanitsa. Massive feet clearly offset from vessel bodies or vessels on very tall pot stands now appear.

Some vessels also continue to stand upon a simple flattened base or a low stand-ring, as is entirely characteristic of the find horizon prior to Karanovo I. In addition to vessel painting, extensive incised and impressed decoration and applications from plastic cordons and studs now appear. In general, the pottery with white painting is most widely dispersed during the period of the horizon of Karanovo I. The Starčevo-Criș I to II complexes in the north and west are roughly contemporaneous.

Also to be associated with Karanovo I are the earliest levels at Chavdar (Todorova, Vaysov 1993, fig. 87), Chelopech (Petkov 1948a, figs. 3–4), and the tell of Azmak (Georgiev 1963, 167–168. – Georgiev 1965, 6 and fig. VI. – Todorova, Vaysov 1993, figs. 102–103).

For the subsequent level of Karanovo II, the more recent excavations produced yet more copious material (Hiller, Nikolov 1997, 117–120). The find spectrum examined develops all but seamlessly from the white painted Neolithic. This continuity is expressed most prominently in the retention of the essential vessel types (Figs. 89–90). Tulip-beakers now occur with numerous variants ranging from classical cylinder forms to embouched types (cf. Nikolov in: Hiller, Nikolov 1997, 117–118 and pl. 59/3–7). These correspond to Types B1 and B3 from Ovcharovo-Gorata. Also evidenced is the very characteristic variant of B2 with strap handles applied to its sides (cf. Nikolov in: Hiller, Nikolov 1997, pl. 59/1–2). Nikolov's "vessels with spherical bodies and long cylindrical necks" (cf. Nikolov in: Hiller, Nikolov 1997, 117) reflect the type group of K1 from the Ovcharovo-Gorata material (cf. Chapter 7.4). Demonstrably extant (although not treated separately) is also Variant K2 with a conical tapering neck and pierced lugs typically on the body (cf. Nikolov in: Hiller, Nikolov 1997, pls. 36/17; 58/5–6, 9).

To these might be added the "closed, pot-like vessels" within Variant 1 with "low, approximately cylindrical necks" (cf. Nikolov in: Hiller, Nikolov 1997, 118). For its own part, Variant 2 from this group represents Type group T1 from Ovcharovo-Gorata. There, so-called "pot-like bowls" with rounded, carinated profiles fall into Type group T3. At Karanovo, these vessels evidently occur just as rarely as at Ovcharovo-Gorata. Pots with S-profiles (T2) are just as well attested during Karanovo II as all other variants of the bowls (S1 to S4). The precise characteristics of the "basins" described by Nikolov remain obscure on account of the unspecific nature of the images referenced (cf. Nikolov in: Hiller, Nikolov 1997, 119). Most likely,

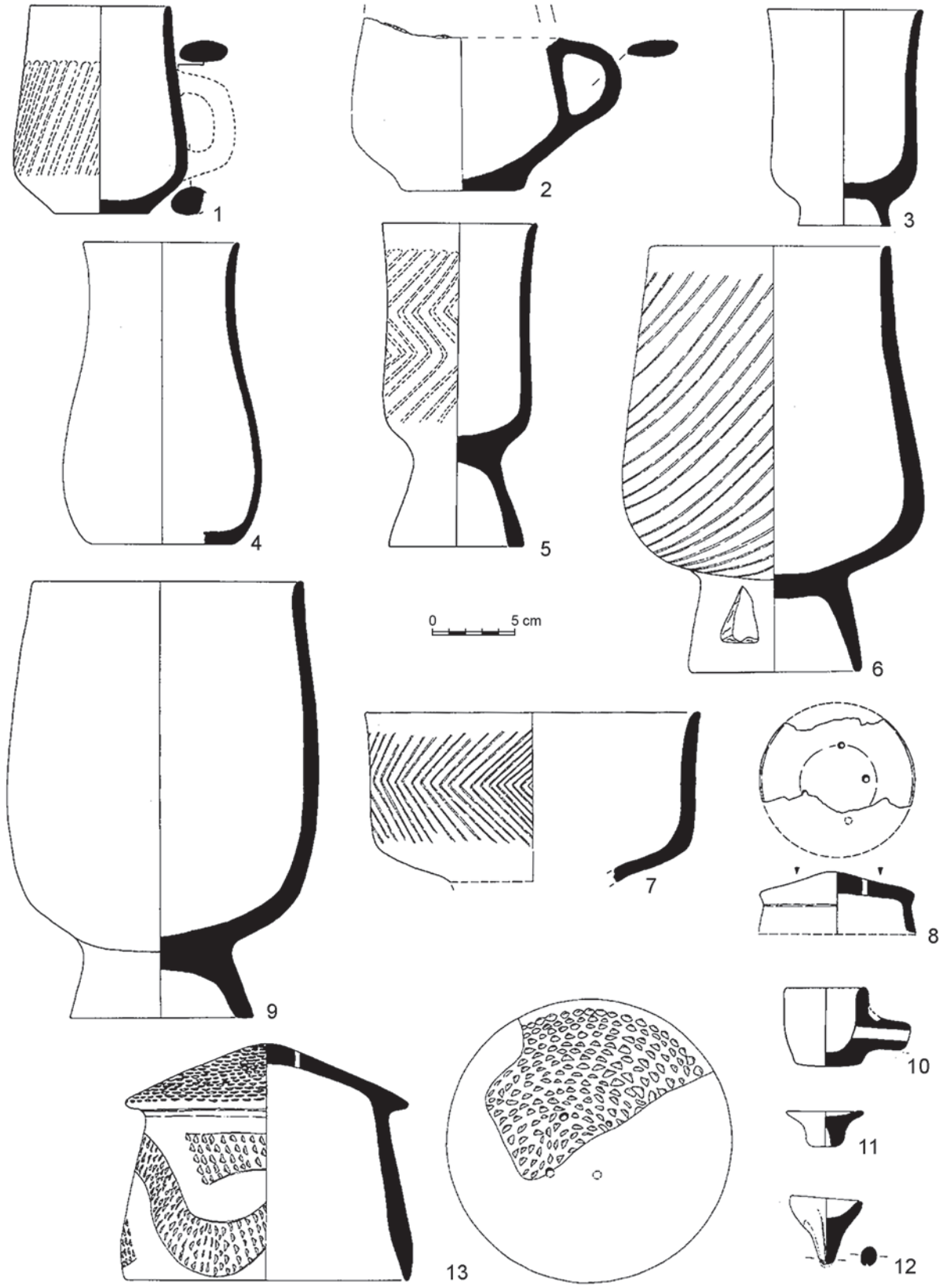


Fig. 89: Karanovo II. Pottery (after Hiller, Nikolov 1997, pl. 59).

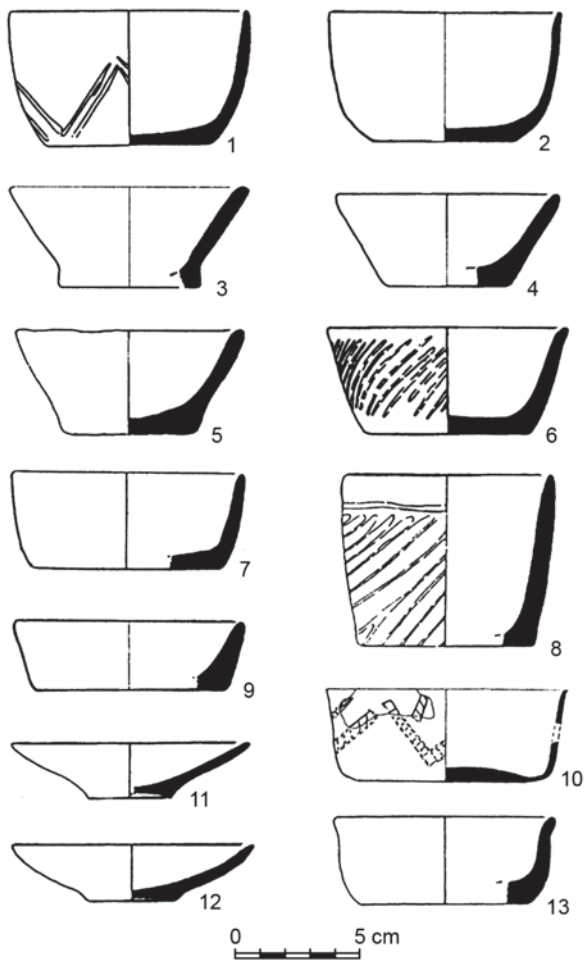


Fig. 90: Karanovo II. Pottery (after Georgieva, Simeonov 2006, pls. 11–12).

these are simple bowls. Finally, the different lid forms are also directly comparable; these correspond in construction and decoration to Types Da to Dd from Ovcharovo-Gorata (cf. Nikolov in: Hiller, Nikolov 1997, pls. 19/17; 59/9–10). Vessel painting is no longer attested during Karanovo II.

Similar to the examples from Ovcharovo-Gorata, the incised and impressed decorations cover the vessels' walls with the exception of the lips. The plastic applications are likewise diverse. It is also there that very fine, frequently ornamental channels on the vessels first appear (cf. Hiller, Nikolov 1997, pls. 57/3, 10, 15, 18; 59/1, 5–6, 8). Thus, the parallelisation of Ovcharovo-Gorata with Karanovo II made by various authors is therefore confirmed (cf. Angelova 1988, 36. – Angelova 1992, 50. – Todorova, Vaysov 1993, 134).

Nikolov attributes further unpublished finds from Stara Zagora-County Hospital to the phase of Karanovo II (Nikolov in: Lichardus-Itten et al. 2002b, 93). Moreover, this stage of the developed Early Neolithic is not attested in northern Thrace.

A result of the more recent excavation in the southern sector is the subdivision of the classical phase of Karanovo III into three standalone chronological segments (II/III, III, and III/IV) which led to confusion in the use of the well-known Karanovo classification. Retaining the traditional horizon nomenclature, Nikolov initially introduced a phase of Proto-Karanovo III or Karanovo II/III, characteristic of which were particularly high cylindrical cups with tap-like handles (Nikolov 1998, 68–75). The horizon is roughly identical with the occurrence already described by Georgiev as Karanovo II/III by means of the finds from Kazanlak (Georgiev 1974, 6–7. – Todorova 1981, 204). Besides the eponymous site, Nikolov also perceives the horizon to exist at Ezero and Glufishevo (Nikolov 1998, 68–75). At the same time, Level II in the mound of Azmak ought also to belong to this (Görsdorf, Bojadžiev 1996, 134). This phase is accordingly somewhat devoid of material as all forms, except the high cylindrical cups, are equally well attested within the phase of classical Karanovo III. Channelled beakers may also already be evidenced during Karanovo II (Nikolov 1998, pl. 1/3, 5–7, 9). Present for the first time are tall beakers and pots with pronounced tap-like handles (Nikolov 1998, pl. 15) as were then particularly typical during Karanovo III, or also bowls with thickened rims which are frequently decorated with incisions or channels (Nikolov 1998, pls. 2/1–3, 5; 7/11–14) (Fig. 91). The typological proximity of the find material to the earlier and later levels hardly surprises, should a constant line of settlement on the tell be presumed. Such a strict delineation of the individual phases one from another would indeed be disconcerting and, inasmuch, this "transitional horizon" of Karanovo II/III is, in fact, but a confirmation of the uninterrupted settlement trajectory on the tell.

For the classical Phase III, forms already reproduced in Georgiev's well-known 1961 profile drawings remain typical (Georgiev 1961, folding pl.). Noteworthy are flat bowls with rims thickened on the interior standing on four high feet (Nikolov 1998, pls. 8/1–12; 9), and further forms with tap-like handles (Nikolov 1998, pl. 7/12–13, 20, 22–26) (Fig. 92). Here also, Nikolov was able to evaluate material from Karanovo, Ezero, and Kazanlak. To this might be added a complex from the Maleva Mogila in Veselinovo (Nikolov 1998, 80–104). Although the aforementioned sites lie geographically close to one another, Nikolov identifies at least two regional style groups, the variants of Kazanlak and Karanovo (Nikolov 2006). In particular, the separation of the material of Karanovo III

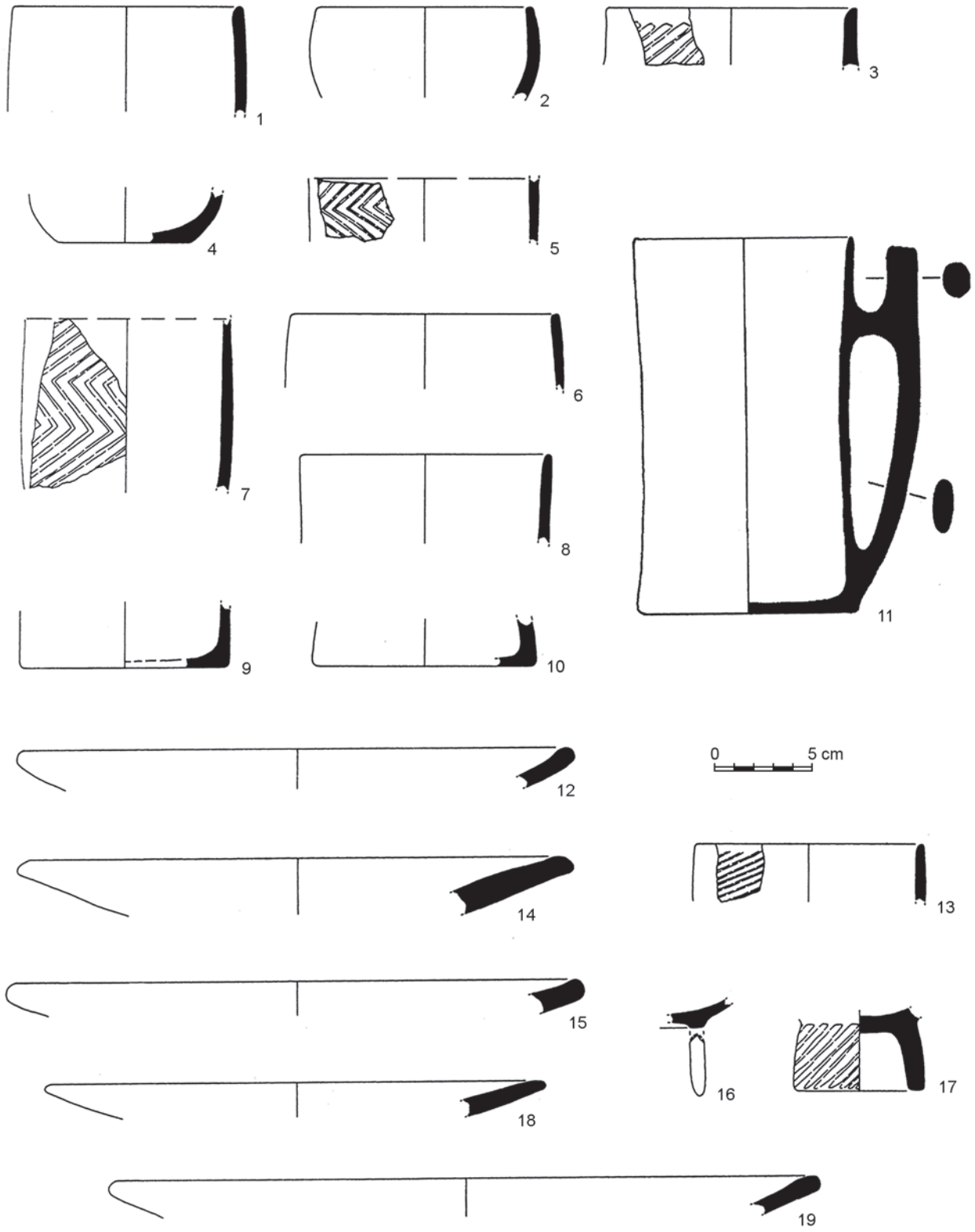


Fig. 91: Karanovo II/III. Pottery (after Nikolov 1998, pl. 2).

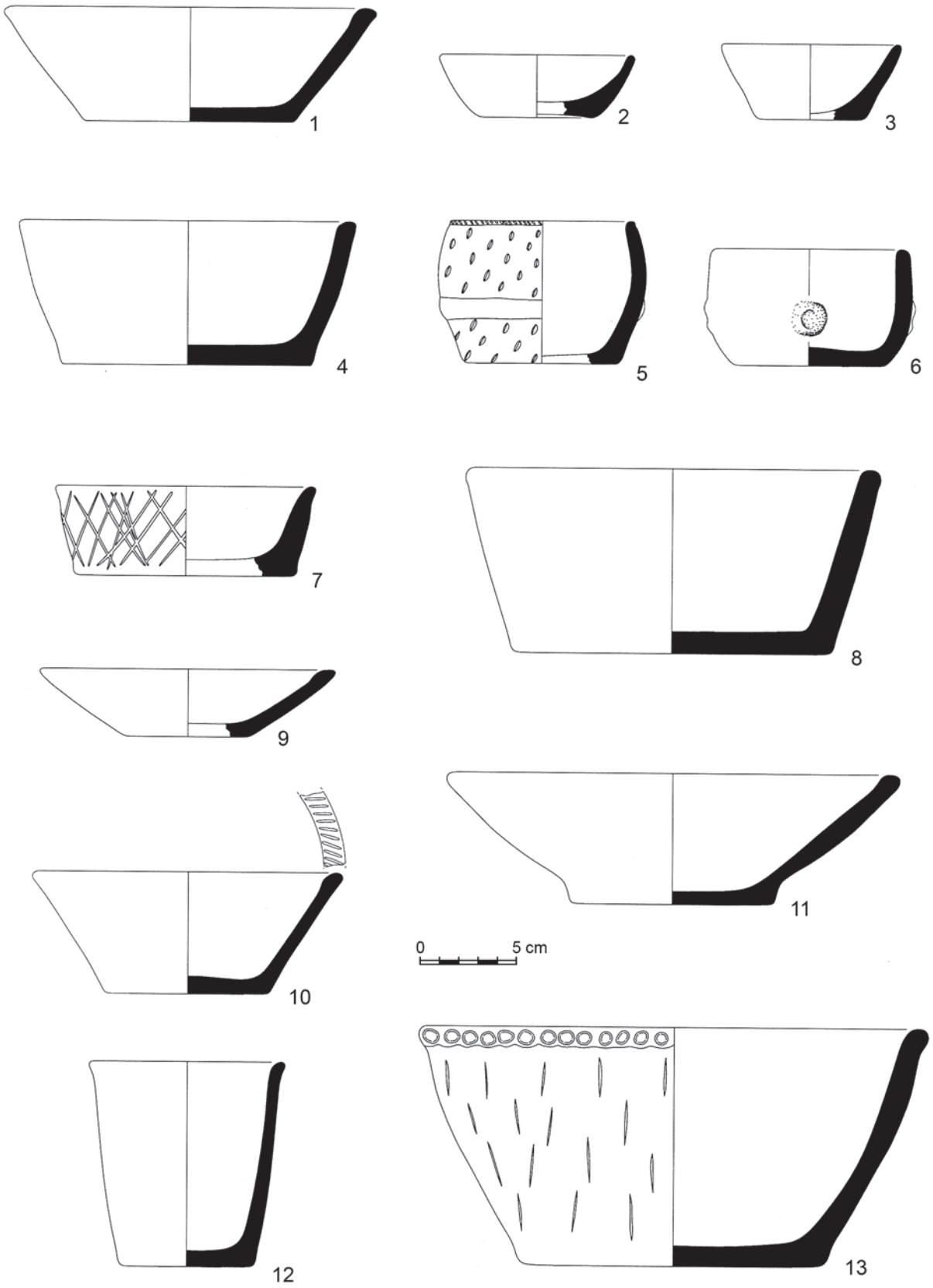


Fig. 92: Karanovo III. Pottery (after Bachvarov 2002, pl. VI/1).

from the earlier material from Karanovo II/III is difficult to follow. A statistical analysis of the attested vessel types would be of assistance here, although this cannot be accomplished with the currently published material. As long as only a representative find corpus is published from the mound of Karanovo, and the finds from the remaining tells only appear in the discussion without images (by means of which the argumentation may be examined), then all of the syncopal shifts in the cultural sequence of Kazanlak toward the material from Karanovo undertaken by Nikolov remain impossible to substantiate (cf. Nikolov 1998, 138–163. – Nikolov 2006, tab. 1). A connection of Vinča A with Karanovo II/III and III cannot be established offhand solely on the strength of the ceramic spectrum (cf. Lichardus, Iliev, Christov 2002, 361–365). The chain of argumentation is based here upon a parallelisation of the trajectory in Thrace in the wake of the Ovcharovo-Gorata period with the Dudeşti culture in Muntenia. In any case, Vinča A should rather be paralleled with Karanovo III and III/IV (see Chapter 6.4).

Following Karanovo III, the horizon of III/IV already displays high-set carinated bowls characteristic of the Late Chalcolithic, and may be clearly distinguished from the earlier material (Nikolov 1998, pls. 14–21). Despite this, extensive channelled decoration on individual vessels remains a key feature (Fig. 93). According to the terminology employed by Lichardus, the horizon of Karanovo III can be subdivided into the levels of IIIa and IIIb (Lichardus, Iliev, Christov 2002, 345) which roughly correspond to the classical Karanovo III period and the transitional horizon of Karanovo III/IV according to Nikolov (Nikolov 1998, 105–137). For his period of Karanovo IIIa, Lichardus envisions connections with the north, and with the phase Dudeşti-Fundeni north of the Danube by means of the material from Samovodene B1. He accordingly links his period of Karanovo IIIb with Samovodene B2 and material from the phase Dudeşti-Cernica (Lichardus, Iliev, Christov 2002, 361–364). Within its eponymous mound, the material from horizon Karanovo III/IV comprises typical transitional forms as might be expected from an uninterrupted settlement sequence. Indeed, the aforementioned carinated bowls are later also signature forms for the horizon of Karanovo IV. Here again, nevertheless, a statistical analysis would be required in order to obtain more precise conclusions. A very large amount of material comes from the recent excavations in Sarnevo (Bachvarov, Tonkova, Katsarov 2017, 239–306); in addition to the pottery, figurines (Bachvarov, Tonkova, Katsarov 2017, 312–315) and tripod tables (Bachvarov, Tonkova, Katsarov 2017, 317–333) complement the find spectrum. Sarnevo is thus the only site from which comprehensive material from this find horizon has been published.

Until 1957, only a few finds from fragmented vessels were known from Karanovo IV. While the more recent excavations have yielded a comprehensive find inventory, the cultural layer itself is still strikingly thin, with only a few architectural features. The Late Neolithic in the manner of Karanovo IV is hence rather more associated with the mound of Kaloyanovets in the district of Stara Zagora (Nikolov 1993. – Todorova, Vaysov 1993, 124–127). Nevertheless, particularly in the case of high-set carinated bowls and expansive bowls elaborately decorated with incisions and impressions on their exterior (and frequently interior), the material comprises unmistakeable forms very widely distributed within the eastern Balkans (Hiller, Nikolov 1997, pls. 2–5) (Fig. 94). Taking as his point of departure the finds from the lower course of the Tundzha (to be discussed in detail later), Lichardus further subdivides the horizon of Karanovo IV into three stages of IVa to c, to which he connects the first two Boian levels, Bolintineanu and Giuleşti in the regions immediately north of the Danube (Lichardus, Iliev, Christov 2002, 361–365). Nevertheless, this subdivision cannot be evinced from the material from Karanovo itself.

5.3. The Rhodopes

Numerous Early Neolithic settlements have been identified within the Rhodopes and their northern piedmont. In particular, the white painted ceramic horizon of Karanovo I is simultaneously attested at multiple sites rich in finds.

Two building horizons originating from within this phase could be identified at Rakitovo; it was only following a settlement hiatus that these were overlaid by a Karanovo III level (Macanova 2002. – Radunčeva et al. 2002, 10–13). White painting found on beakers and footed bowls is characteristic of the Early Neolithic material. In addition to typical tulip beakers, low, bulbous forms (as are particularly known from the Struma Valley) are attested. Rakitovo quite evidently lies within the transitional zone between the Early Neolithic of the Thracian Plain and that of the west Bulgarian sphere. The few ceramic forms identified from Eleshnitsa, some of these white painted (Nikolov 1996a, figs. 1–2. – Nikolov 2002a, pls. 25–30), are to be assessed similarly, with Nikolov recognising an independent geographical variant of the Karanovo I culture there (Nikolov 1996a). While most of the material might be linked to Karanovo I by means of the linear white painting, the presence of extensive painting with spiral motifs (and particularly the occurrence of channelled decoration) indicates a somewhat later chronological ascription, roughly at the transition to

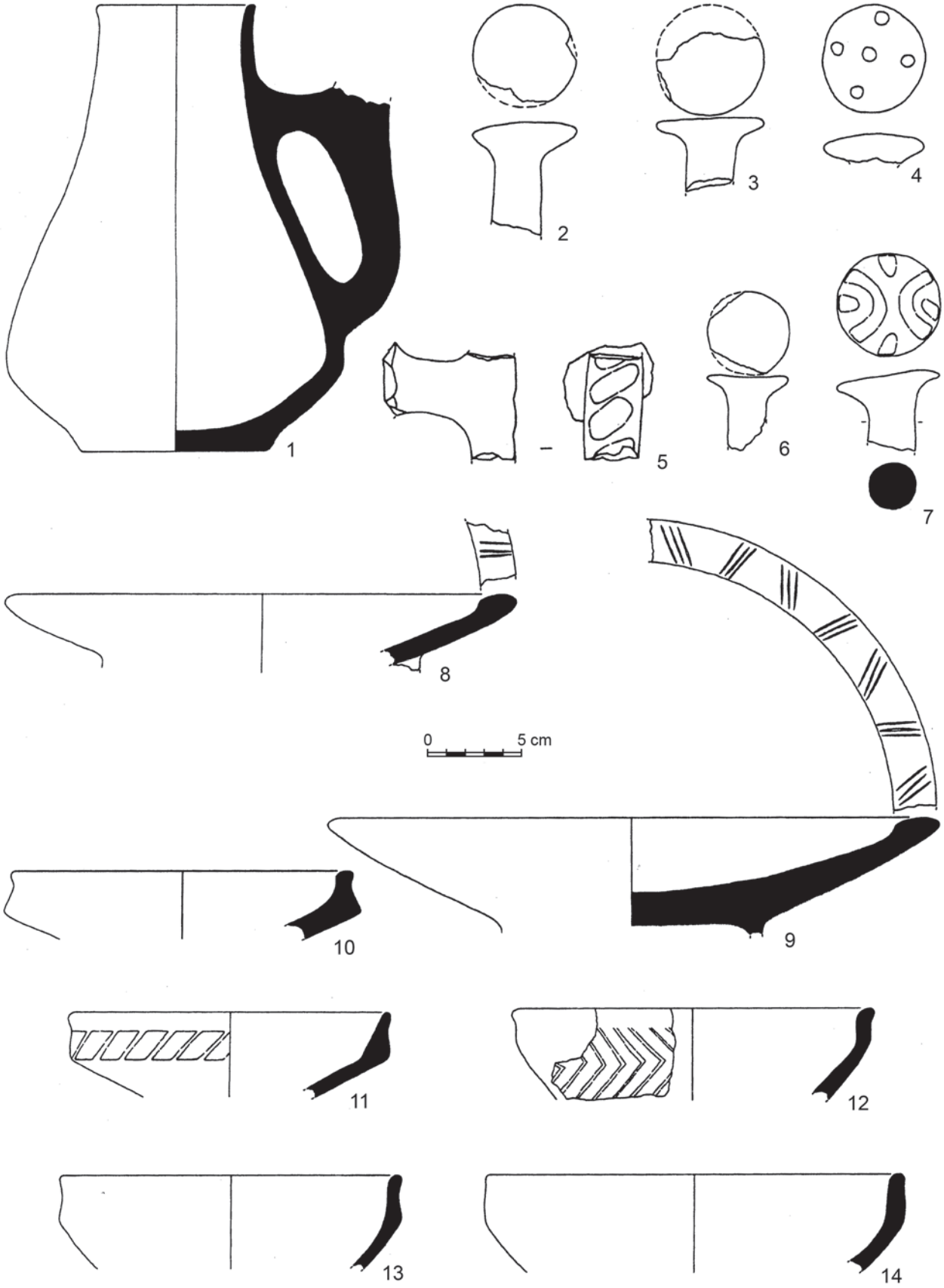


Fig. 93: Karanovo III/IV. Pottery (after Nikolov 1998, pl. 20).

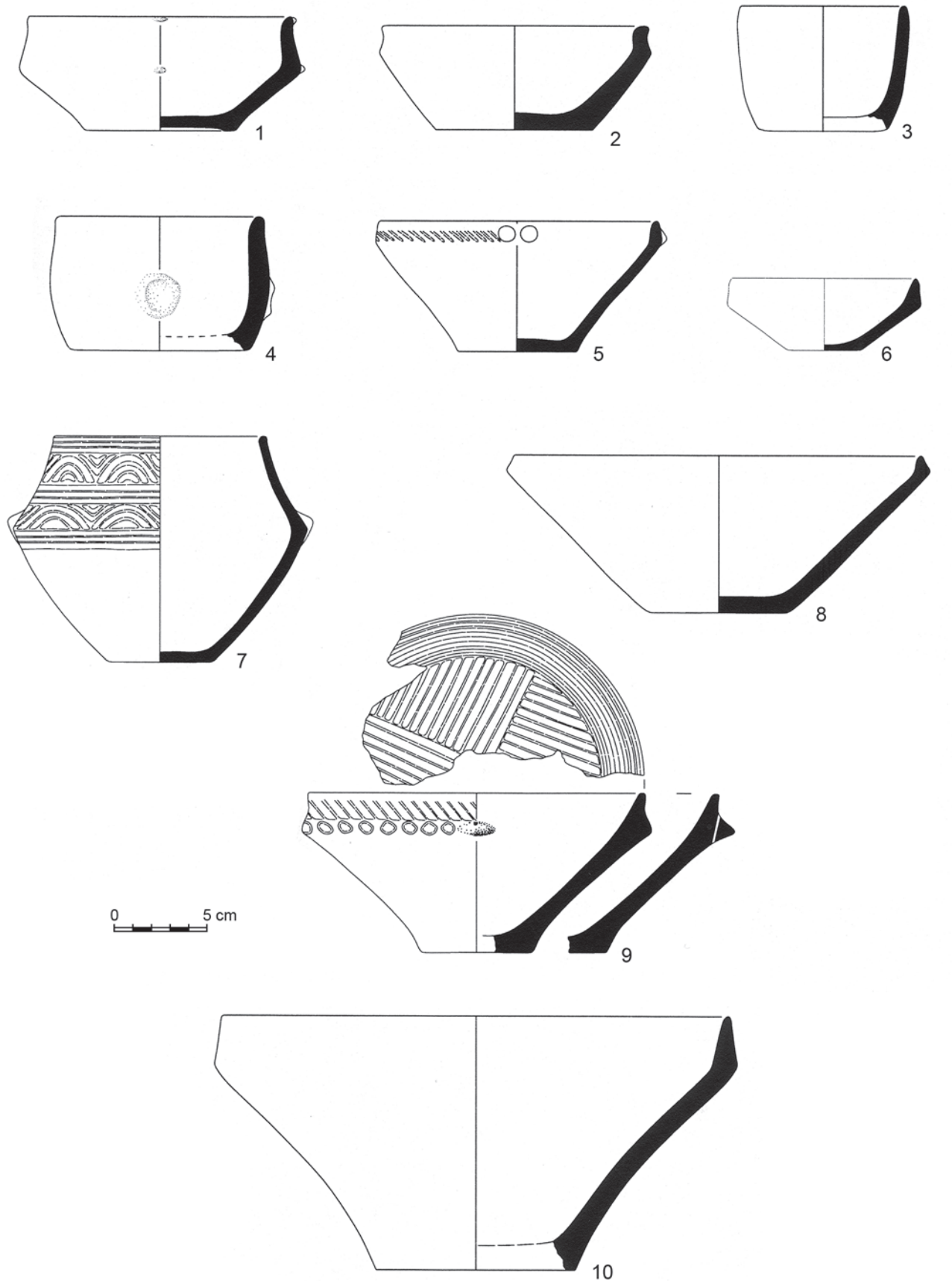


Fig. 94: Karanovo IV. Pottery (after Bachvarov 2002, pl. VI/3).

Karanovo II. Considering that seemingly more archaic elements and typologically later material alike appear within both layers of Rakitovo, the question arises as to whether the material can be neatly divided at all, or rather as to whether this, in fact, represents mixed contexts (cf. Radunčeva et al. 2002, figs. 27, 39); certainly, the discovery of channelled and white-painted pottery together is at the very least unusual for Thrace. As yet, no finds have been published from the heavily damaged cultural levels of the Middle Neolithic of Eleshnitsa.

A similar stratigraphy is extant from Kapitan Dimitrievo. The settlement of the tell also began during the phase of Karanovo I. Following a considerable break in settlement, the site was first resettled during Karanovo III/IV (Detev 1950. – Nikolov et al. 1999). While the site is only some 20 km east of Rakitovo, the Early Neolithic find material discovered there wholly corresponds to that of the Karanovo facies with its typical tulip beakers, globular pots with cylindrical necks, and hollow footed bowls (Nikolov et al. 1999, pls. 1–7). White painting also serves as a signature feature here, next to which channelled vessels occur, much as at Rakitovo (cf. Nikolov et al. 1999, pls. 2/3–4; 4/2). Channelling is characteristic of the Karanovo III/IV material, often being found upon the upper part of the vessel. Common forms include high-set carinated bowls and bowls with straight walls decorated with incisions on their interiors. The material is typical for the Late Neolithic's onset, and may be associated with such far afield phases as Aşağı Pınar 4 in Turkish Thrace (Parzinger 2005, pls. 79–94) and Samovodene B2–C in northern Bulgaria (cf. Stanev 2002b, pls. 9–12).

Only a few kilometres south-west of Eleshnitsa, on the western bank of the Mesta/Nestos River, may be found the settlement of Dobrinishte. The site was explored by Nikolov and Mladenka Radeva using multiple excavation trenches at some distance from one another (Nikolov, Radeva 1992). The find material evidently belongs to two different phases of the Early Neolithic. Some sherds with white painting may be parallelised with Karanovo I (Nikolov, Radeva 1992, figs. 7–9). Remarkably, no profiles can be found among the vessels which might be deemed tulip beakers. Rather, these comprise bulbous beakers and footed bowls particularly characteristic of the Struma Valley neighbouring to the west. Although a clear natural barrier to the Struma's valley is formed by the mountainous massifs of Rila and Pirin, and the settlement of Dobrinishte thus obviously still belongs to the Rhodopes, the course of the Mesta seems to have served as a boundary between the actual core region of Karanovo I and the central Balkan sphere of white painted pottery. It might be presumed that communication with the Struma Valley did not run directly over the Pirin range, but instead southwards via the broad littoral of the northern Aegean, thereby still remaining within the SMAB zone. A few pottery fragments with split knobs, channelled decorations, and horizontal handles must be considered as belonging to a later horizon at Dobrinishte (Nikolov, Radeva 1992, fig. 12). These fragments may be associated without difficulty with Karanovo II, and thus with Ovcharovo-Gorata. Nevertheless, the small number of published sherds and their highly broken state both present specific uncertainties in the precise parallelisation of the find material with that of Ovcharovo-Gorata.

In close proximity to the Maritsa, some 10 km west of Dimitrovgrad, lies the site of Yabalkovo, which was exposed by rescue excavations (Leshtakov 2006. – Leshtakov et al. 2007). The stratigraphic relationship of the individual finds discovered in various trenches has not been completely explained. Large parts of the find material may be associated with Karanovo I by means of characteristic beakers and bowl forms with linear white painting. Yet other features may be easily connected with Karanovo II and Ovcharovo-Gorata through their finds. Noteworthy here are bulbous beakers on very tall hollow feet (cf. Leshtakov et al. 2007, figs. 6/13–14, 17–18; 22/12; 23/14), some of these additionally channelled, fragments of bulbous vessels with pierced lugs of the type groups of K1 and K2 from Ovcharovo-Gorata (cf. Leshtakov et al. 2007, figs. 6/11, 16; 23/11), and impression-adorned lids (cf. Leshtakov et al. 2007, figs. 7/14; 12/4). Some of these elements are doubtless already evidenced during Karanovo I. The combination of the individual features and (most prominently) the occurrence of multiple vessels with incised and channelled decorations permits at least a portion of the material from Yabalkovo to be identified with Karanovo II. The continuation of the excavation work promises that a transition from Karanovo I to II (scarcely to be considered a neat separation) might soon be identified.

By means of the publication of numerous white painted fragments, the settlements at Krumovgrad, Muldava, and Kardzhali might be attributed to the phase of Karanovo I (Peykov 1972. – Todorova, Vaysov 1993, fig. 30. – Nikolov 2002a, 21–27 and pls. 102–148/1–3). The painted ceramics published from Kardzhali are nevertheless exceedingly heterogeneous so that it cannot be excluded that the period prior to Karanovo I is already represented, should a fragmentary sherd painted with white spots be taken into consideration (Nikolov 2002a, pl. 134/2), a painting technique occurring at the onset of white painting in the eastern and northern Balkans.

Not far from the Turkish border lies the site of Lyubimets on the southern bank of the Maritsa. The site displays numerous pits interpreted as ritual in nature by the

excavator Nikolov. The currently unpublished material of the ongoing excavations is ascribed by Nikolov to the phase of Karanovo III/IV.[20] Some of the material such as jug-like vessels with long cylindrical necks, tapering shoulders, and conical undersides may be readily associated with the finds of the Toptepe facies within Turkish Thrace.[21]

5.4. The Plateau of Sofia

Situated between the western Balkans, the Vitosha range, and the Srednogorie respectively, the plain of Sofia forms a discrete geographic unit. By means of the Iskar's course through the Balkans and the gentle peaks of the Lyulin, natural connections existed to the north and the south. Within antique geography, the region belonged to Thrace. Certainly, Serdika (ancient Sofia) fell under the alternating influence of the Latin-speaking provinces of Moesia, on the one hand, and Greek-speaking Macedonia and Thrace, on the other, during Classical Antiquity. This serves to illustrate the liminal situation of the Sofia Plain, which, although historically belonging to Thrace, also served as a zone of transit between the Struma Valley and the Danubian lowlands. Despite its relatively high altitude of circa 500 m above sea level, the region is naturally blessed with fertile earth, lithic raw materials from the surrounding ranges, and a profusion of mineral water sources.

Within the Slatina district of Bulgaria's capital, excavations were carried out during the 1950s and again during the 1980s on a long-identified Early Neolithic settlement (Petkov 1959. – Petkov 1961. – Nikolov 1989. – Nikolov 1992. – Nikolov 2002b). According to the results of the more recent excavations undertaken by Nikolov, the site possesses four layers. Originating from the lowest two layers were only a few sherds of fine, red-slipped pottery painted with white pigment (Nikolov 1992, 70 and fig. 1). By means of contrast, the overlying two levels present sherds painted with wine-red, brown and (more seldomly) black colours among the painted pottery (Nikolov 1992, 71 and figs. 2–3). Despite this, polychrome painting is the first characteristic of the final settlement level. The relationship of the painted pottery to the monochrome wares is significant: this presents percentages of 12% white painting, 25% wine-red painting, and 63% brown painting among 1,260 recorded sherds over all levels. Although the total sum of sherds documented is extremely low for a regular excavation lasting many years, the subdivision of the painting techniques according to levels permits the identification of certain tendencies within its development. Accordingly, during the early phase characterised by white painting, monochrome material remains predominant, while it is only with the arrival of the developed stage of the Neolithic in western Bulgaria that vessel painting of fine ceramics becomes the dominant decorative form. Focusing solely upon painted pottery, Slatina initially demonstrates the classic sequence of white-painted, then red-painted, black-painted, and finally polychrome-painted find material, with this order having been decisive for the foundational definition of the western Bulgarian Neolithic since the identification of the "western Bulgarian painted ceramic" sphere by James Gaul (Gaul 1948, 10–63. – cf. also Todorova, Vaysov 1993, 64–86).

This sequence is confirmed by Georgiev's excavations in Kremikovtsi. At the site (now incorporated into Sofia), two Neolithic levels were evidenced in multiple sondages, these, in turn, overlaid by Chalcolithic and Bronze Age settlements (Georgiev 1975). The lowest find horizon produced a few fragments of a white painted pottery on a red background, followed by a number of layers with red-, brown-, and black-painted ceramics. The few published pieces of the white-painted pottery display hatched line patterns. Linear patterns and broadly painted bow motifs can be observed upon the dark-painted sherds (Georgiev 1975, figs. 7, 9–10). Among those fragments of coarse pottery illustrated are some examples decorated with impressions, plastic applications, and notched cordons (Georgiev 1975, figs. 4–6). Despite this, it remains unclear to which level the fragments individually belong. The tall vessel feet also attested can, nevertheless, be connected without much effort to the dark-painted pottery (Georgiev 1975, fig. 8/a, r).

The horizon of black-painted ceramics in western Bulgaria is generally associated with Karanovo II on the Thracian Plain. The shared occurrence of plastic cordons and impressions on the coarse pottery in addition to the dark painting does, indeed, render a parallelisation of the upper Neolithic bundle of layers from Kremikovtsi with Ovcharovo-Gorata entirely conceivable.

5.5. The Plateau of Zlatitsa and Pirdop

East of the Sofia Plain (although clearly demarcated from these by a small ridge), lies a tight valley basin between the Balkans and the Srednogorie, and, within this, the highlands around the towns of Zlatitsa and Pirdop. This geographical division is remarkable inasmuch as the river courses

20. As yet, the site has only been reported upon within the annual bookkeeping meetings of the Archaeological Institute in Sofia (Nikolov, Nehrizov, Tsvetkova 2008). The find material remains unpublished.

21. The present author thanks Nedko Elenski, who participated in the excavation, for this information.

	white	wine red	dark brown / black	cream / light brown	polychrome
Chavdar I	10	5	2	3	6
Chavdar II	85	9	9	7	60
Chavdar III	62	10	8	8	38
Chavdar IV	70	15	4	7	52
Chavdar V	75	22	6	12	31
Chavdar VI	90	8	6	4	3
Chavdar VII	13	3	–	–	–

Tab. 1: Chavdar. Distribution of decorative types on ceramics according to layers. Indicated is the number of the respective sherds (after Nikolov 2002a).

springing from this region all disgorge directly to the south, and hence form a natural communication zone with the Thracian Plain, a connection also reflected in the archaeological finds. Accordingly, the tulip beaker characteristic of the whole of Thrace may be found here, despite being entirely unknown any further west, even in the neighbouring Struma Valley to the south.

From 1968 onwards, the Neolithic settlement at Chavdar within the southern part of the valley basin was extensively excavated (Georgiev 1981). Seven settlement horizons could be discerned in total, the uppermost of which Georgiev was able to attribute to the period of Karanovo II/III, the six levels below then ascribed by him to Karanovo I (Georgiev 1981, 65–68). That this nevertheless comprises material from entirely different chronological phases becomes evident after a glance at the pottery illustrated; based on this, the settlement stretches from (at the very least) the phase with purely white painting (Karanovo I) up to the phase with dark-on-light painting, fine channelled ceramics, and numerous plastic applications on the coarse pottery (Karanovo II and II/III) (Georgiev 1981, figs. 28–50). Nikolov was the first to study the painted pottery from Chavdar in detail (Nikolov 2002a, 43–51). According to him, five different painting techniques could be evidenced at the site: painting in white, wine-red, dark brown or black, and cream or light brown colour, as well as polychrome-painted vessels. The distribution of the painted vessel fragments appears as illustrated in Table 1.

Nikolov identifies a specific feature of the site, which is its overwhelming distribution of polychrome-painted vessels within Levels II to V; this is engendered by Chavdar's situation between the spheres of influence of the Karanovo and Starčevo traditions respectively (Nikolov 2002a, 50). The general absence of dark-on-light painted pottery in the lowest level of VII unquestionably indicates a connection with Karanovo I in the east and Garašanin's phase of Anzabegovo-Vršnik I in the west. The overlying levels then correspond to the later development up to Anzabegovo-Vršnik III. The consistently high proportion of white-painted wares throughout all the layers among otherwise heavily fluctuating percentages of the remaining painting techniques may well prove to be an indication of a contamination during the division of the find material from the upper levels.

On the opposite, northern side of the valley basin may be found another multi-layer site at Chelopech excavated between 1947 and 48 by Nedelcho Petkov (Petkov 1948a. – Petkov 1948b). Here, three settlement phases could be distinguished. Bottommost was a level yielding painted pottery which comprised of wine-red- or black-painted fragments. The painted motifs are exclusively curvilinear (Petkov 1948a, figs. 3–4). The presence of high, internally hollow vessel feet together with the dark painting prompt a parallelisation with the developed Early Neolithic of Karanovo II in Thrace, which corresponds to Anzabegovo-Vršnik II within the Macedonian sphere. Following this is a level with classic material from Phase Karanovo III with cylindrical beakers with tap-like handles, bowls with thickened rims, and plastically decorated coarse pottery (Petkov 1948a, figs. 9–11, 13). Nevertheless, a few forms such as a fragment with an applied floral motif (Petkov 1948a, fig. 9, below), a round lid decorated with impressions (Petkov 1948a, fig. 15, above left), and a cylindrically necked vessel (Petkov 1948a, fig. 15, below) are also reminiscent of selected forms from Ovcharovo-Gorata, so that an earlier onset of Chelopech B (roughly at the end of Karanovo II) cannot be excluded. The uppermost level of Chelopech C already belongs to the Chalcolithic.

5.6. Early Neolithic Domestic Architecture in Thrace

Mirroring the present-day border between Turkey and Bulgaria is a methodological barrier. Originating from



Fig. 95: Yabalkovo. Aerial photograph of the settlement with Early Neolithic circular ditches (after Leshtakov 2014, fig. 76).

Turkish territory are fewer, albeit more comprehensively investigated sites. In Bulgaria, the researcher is confronted by a large number of identified sites which are mostly poorly (if at all) published. Therefore, it is hardly surprising that insufficient information is available on the structure of settlements despite the many Early Neolithic sites excavated in Bulgaria. Indeed, Lichardus-Itten has emphatically highlighted the problems in the interpretation of the "formless tent-huts" frequently unearthed within the Balkans (Lichardus-Itten 2010, 14): she presumes them to be rectangular structures above ground accompanied merely by drainage pits. By means of good excavation methodology, even sunken buildings may be demonstrated to possess a thoroughly rectangular structure (Lichardus-Itten 2010, 14). The sole point of reference for Thrace is the mound of Karanovo, whose more recent excavation in the southern sector has particularly contributed to an understanding of the construction techniques of the region's settlements. A tradition begins with the earliest settlement at Karanovo I which is evidenced until the Chalcolithic. In Karanovo I, relatively disorderly, almost quadratic, freestanding houses appear with low platforms along the walls and a stove lying within the house. Unevenly distributed standing posts mark the wall and a wattle-and-post construction (Hiller 1997, 55–56). This building technique is essentially retained throughout the entire Neolithic at Karanovo. The only alteration comes in the form of houses of two to three rooms which appear from Karanovo III onwards, with these also created to be freestanding by means of wattle and post (Hiller 1997,

57–65). It is only with the advent of the Chalcolithic from the 5th millennium onwards that more complex settlement structures demonstrating conscious planning are at all recognisable (Todorova 1982, 22–43). Despite the less than satisfying state of the sources, a clear distinction from the settlements of the Marmara region also seems evident within this region. It is only from Aşağı Pınar 6 that a building plan closely structurally related to the settlements of the Marmara region might be discerned. Nevertheless, the extant building techniques already demonstrate themselves as very much differentiated; while air-dried mudbricks were employed within the Marmara region, the settlement in Aşağı Pınar was already composed of the wattle-and-post structures typical for the entire Balkans.

Trenches that surround the settlements represent a structural commonality. Circular ditches have been proven in almost all geomagnetic prospected Neolithic settlements, such as in Nova Nadezhda (Bachvarov et al. 2019) and Sarnevo (Tonkov 2017). Wherever large areas have been dug, they are also visible in the archaeological findings; perhaps the best example is the multiple circular moats of Yabalkovo (Roodenberg, Leshtakov, Petrova 2014, 223–274) (Fig. 95).

5.7. Economic Foundations

There are few economic reasons discernable for this transformation in building tradition, as the animal bone and plant remains from the settlements indicate a similar economic package to that within north-western Anatolia. For example, the Neolithic begins at Karanovo with a marked predominance of domesticated animals over game (Bökönyi, Bartosiewicz 1997). With a very high proportion of sheep/goat, somewhat fewer cattle, and very few pigs, the distribution of these domesticated animals is also comparable to that in north-western Anatolia. Moreover, the grains cultivated at Karanovo such as einkorn, emmer, durum wheat, and barley, and also pulses such as chickpeas, peas, lentils, and ervil (Thanheiser 1997) are already evidenced in the north-western Anatolian settlement inventories. Nevertheless, the Early Neolithic communities in Thrace must already have found the means and methods by which to protect seeds and herds over the cold continental winters. While the Thracian plain's median January temperatures of 0 to +2 °C render it somewhat warmer than its neighbouring regions within the eastern Balkans (Kopralev 2002, figs. 2.5–6), a long-observed absolute minimum temperature of -18 °C (Kopralev 2002, fig. 2.16) must nonetheless have presented a genuine challenge for the early agriculturalists and pastoralists. Within this may also lie the reason why the wild grapevine only reaches as far as the region of the southern Thracian plain from its starting point in the northern Aegean (Zohary, Hopf, Weiss 2012, map 16). Aquatic resources are of merely secondary importance within the Balkans. During Karanovo I, the exploitation of freshwater mussels is still tangible, but this decreases so markedly over the course of the development that by Karanovo III they are as good as absent (Höglinger 1997). The best evidence for a lack of communication with the Aegean sphere is the absence of the shells of large sea bivalves such as the *Spondylus* and *Glycimeris*, as these enjoyed considerable popularity in the manufacturing of jewellery both during the Late Neolithic and Chalcolithic within the Balkans. Karanovo I evidences a mere five *Glycimeris* shells, and Karanovo II a total of two (Höglinger 1997, pl. 21/2).

5.8. Thrace as a Secondary Zone of Neolithisation

Travelling northwards, it is not the environment that increasingly alters but rather the winter climate, that of the Balkans roughly corresponding to central Anatolian climes. Yet, within such a climate of hot summers and cold winters which might be described as temperate continental, a purely mudbrick construction would be much more advantageous than a combined clay-and-timber construction technique. It is quite possibly the ubiquity of wood in the Balkan region that provoked such a transformation in building tradition. Regardless, it must be maintained that only indirect connections with neighbouring north-western Anatolia and the Aegean might be demonstrated within the material culture, and the settlements' building technique is fundamentally different, although the environmental conditions and economic bases of both regions are very much comparable. Proceeding from the ceramic material, it becomes apparent that no finds prior to Karanovo I have currently been identified. In turn, the ^{14}C dates available all occur in the wake of the 6000 calBC threshold. This area is therefore well removed chronologically from the Neolithic in the neighbouring Marmara region, as the Thracian Early Neolithic (Karanovo I–II) runs parallel to the Anatolian Early Chalcolithic (Fig. 96). Close affinities in the pottery may be evidenced most prominently for the Struma Valley bordering to the west, and (remarkably) also for northern Bulgaria, in both of which regions earlier Neolithic settlement may be found. It is quite possible that the broad floodplain of the Maritsa may conceal even earlier Neolithic settlements beneath its sediment deposits. Nevertheless, according to the current state of research, Thrace is depicted as the zone of a secondary neolithisation as the regions such as the Struma Valley and northern Bulgaria evidence earlier Neolithic settlement, despite being geographically further afield. As a result, the



Fig. 96: Distribution of the main Early Neolithic cultural groups in South-east Europe (c. 6000–5700 calBC). At this point the neolithisation processes have already been completed in most areas and various regional groups are emerging (R. Krauß).

question as to the identity of the carriers of the neolithisation process into Thrace remains difficult. A direct immigration of settlers from the south seems less than likely as the earliest elements of the Thracian Neolithic may be derived almost entirely from the neighbouring regions to the west. It is only following a period of adaptation of the Neolithic package to the climatic preconditions of the Balkan region that a dense Neolithic settlement of the region might be charted. Influence from the maritime networks of the Aegean might only be indirectly identified within Thrace. A lot of evidence suggests a late immigration to Thrace of Neolithic settlers from the west and north as late as the phase of Karanovo I. The ceramic forms such as the characteristic white-on-red painted tulip beakers are further developments of earlier forms from northern Bulgaria and the Struma Valley. Conversely, almost no direct antecedents of the earliest Neolithic pottery in Thrace may be noted. Earlier finds could well be expected beneath the colluvia of the great rivers such as the Maritsa and Tundzha. As yet, however, the situation remains as described, and the impetus originates from the west and north, but not from the south-east.

6. Neolithisation Processes in the Central Balkans

That a pre-Neolithic population is to be expected at all within the Balkans' farther reaches is evidenced by the archaeologically well-researched zone of the Danube Gorges. There, directly on the banks of the Danube's passage through the Balkan-Carpathian belt, an uninterrupted settlement sequence ranging from the end of the last Ice Age until well into the Neolithic has been attested (Borić 2011). However, the available data show that either the number of settlements markedly increases with the Neolithic, or that settlements become ever more difficult to detect with increasing chronological posterity. Despite this, it is vital here to state that the absolute number of known settlements from the period immediately prior to the neolithisation is roughly equal to that of the Early Neolithic (Borić 2011, fig. 5). The lack of pre-Neolithic settlements thus appears to be a primarily methodological problem.

6.1. The Catchment Area of the Great and Southern Morava Rivers

The reason why the western Bulgarian sites demonstrate fewer correspondences with the Early Neolithic materials in north-eastern Bulgaria is to be sought in the strong ties of these areas to the central Balkans (Fig. 97). While the earliest ceramics in the western Black Sea region may still be compared to those of the region of the Great Morava and the Danube Gorges, and (even more so) can only be understood through this connection, the evolution of forms of the developed Early Neolithic nonetheless takes its own course (as was the case elsewhere). Information on the Proto-Starčevo level introduced by Srejović (Srejović 1971, 11–17) has only recently been expanded upon by means of more recent excavations (Pavúk 1993). In addition to the finds that have been known about for longer from Lepenski Vir IIIA1 (Srejović 1969. – Perić, Nikolić 2004), Padina (Jovanović 1987), Divostin (Bogdanović 1987), Banya Aranđelovac (Bogdanović in: Srejović 1988, 70–71), Ornice-Makrešani (Stanković in: Srejović 1988, 85–86), and Grivac (McPherron, Srejović 1988. – Bogdanović 1995. – Bogdanović 2007), a large find collection is also known from Blagotin (Vuković 2004). There is a general consensus that the earlier material from Koprivets and the finds from Polyanitsa-Platoto in north Bulgaria belong to the period of Proto-Starčevo (cf. Todorova, Vaysov 1993, 74–75. – Popov 1996, 104–105. – Krauss 2006, 184–185). To these might be added the finds from Dzhulyunitsa I, so that one can assume a large-scale spread of this earliest Neolithic phenomenon in the Balkans. While this consists almost completely of monochrome ceramics, the discovery of three fragments of dark-painted pottery at Blagotin is remarkable. These comprise extensive linear patterns realised with a broad brush, although their application upon miniscule fragments does not permit any identification of structure.[22] It is evidently an extensively applied, dark-painted pottery similar to that otherwise evidenced from Dzhulyunitsa I.

Statistical information on the ceramic wares' relationship to one another is available from the settlement

22. The material was presented by Jasna Vuković at the conference "Beginnings. New Research in the Appearance of the Neolithic between north-western Anatolia and the Carpathian Basin" in April 2009. See also Vuković 2011.

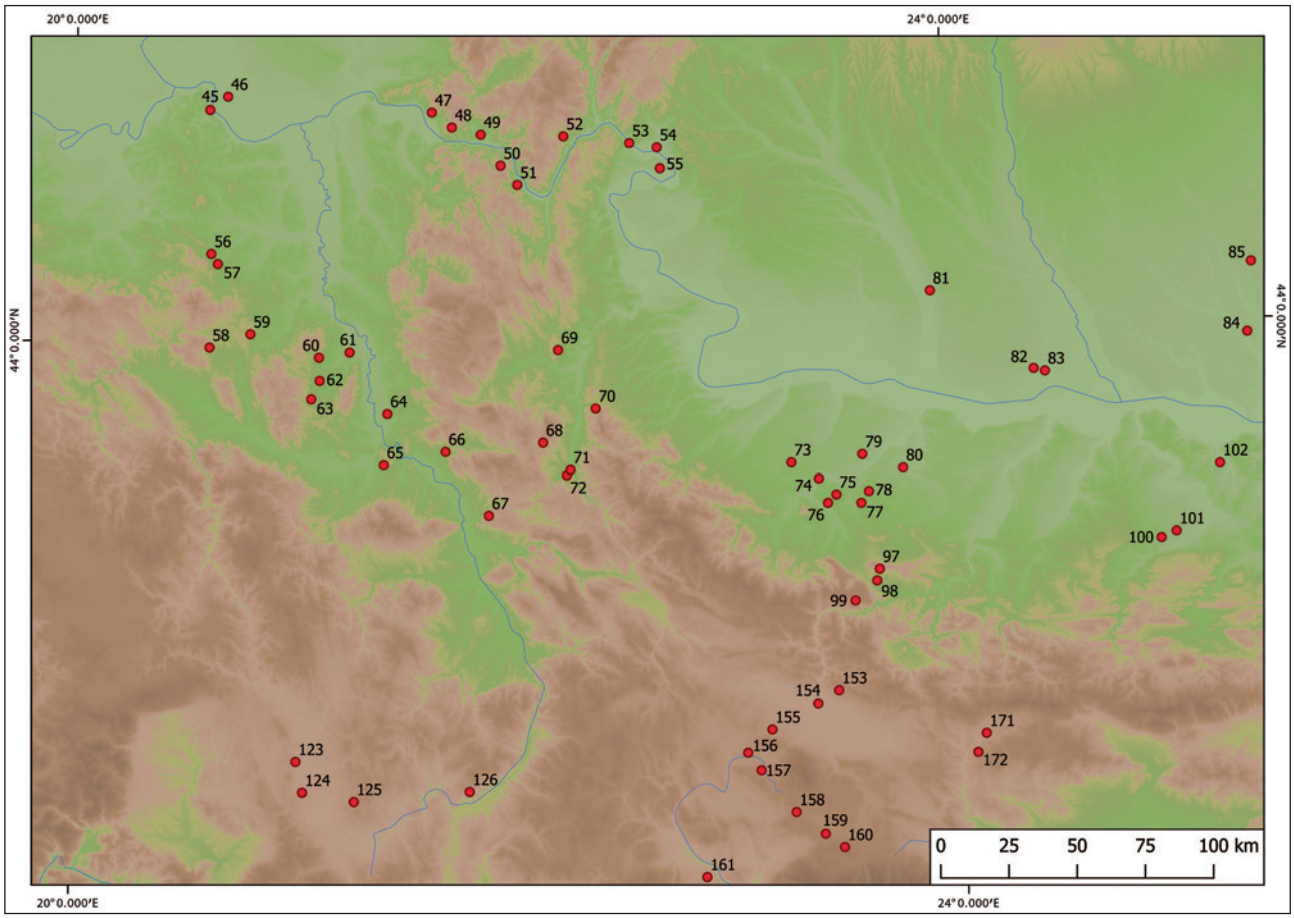


Fig. 97: Map of Early Neolithic sites in the Central Balkans. – 45. Vinča. – 46. Starčevo. – 47. Pojejena-Nucet. – 48. Moldova Veche-Rât. – 49. Gornea. – 50. Padina. – 51. Lepenski Vir. – 52. Cuina Turcului. – 53. Ostrovul Golu. – 54. Schela Cladovei. – 55. Ajmana-Mala Vrbica. – 56. Svinjarička Čuka. – 57. Banya Aranđelovac. – 58. Grivac. – 59. Divostin. – 60. Belica. – 61. Svetozarevo (Jagodina)-Bunar. – 62. Tečić. – 63. Blagotin. – 64. Drenovac. – 65. Ornice-Makrešani. – 66. Crnokalačka Bara. – 67. Bubanj. – 68. Dubrava. – 69. Kučajna. – 70. Jelašnica. – 71. Knjaževac. – 72. Kadijski Krst. – 73. Gradeshnitsa-Malo Pole and Gradeshnitsa-Lukanovo Darvo. – 74. Devene. – 75. Ohoden. – 76. Banitsa. – 77. Tlachene. – 78. Komarevo. – 79. Altimir. – 80. Byala Slatina. – 81. Cîrcea-La Hanuri and Cîrcea-Viaduct. – 82. Vădastra. – 83. Grădinile-La Islaz. – 84. Măgura Buduiasca. – 85. Dulceana. – 97. Zakonitsa. – 98. Beshovitsa. – 99. Rebarkovo. – 100. Devetaki Cave. – 101. Krushuna. – 102. Balgarsko Slivovo. – 123. Karagač-Žitkovac. – 124. Rudnik. – 125. Gladnice. – 126. Pavlovac-Gumnište and Pavlovac-Čukar. – 153. Kremikovtsi. – 154. Slatina. – 155. Pernik. – 156. Priboy. – 157. Negovantsi. – 158. Galabnik. – 159. Kraynitsi. – 160. Sapareva Banya. – 161. Nevestino. – 162. Vaksevo. – 163. Balgarchevo. – 164. Eleshnitsa. – 165. Dobrinishte. – 166. Kovachevo. – 167. Toumba Serron. – 168. Sitagroi. – 169. Dikili Tash. – 170. Kryoneri. – 171. Chelopech. – 172. Chavdar (R. Krauß).

of Grivac (Bogdanović 2004, 47–59). Three Early Neolithic levels attributed to Proto-Starčevo succeed one another. These are overlaid by an additional three layers with Vinča material. Milenko Bogdanović's information about the decorative forms of the Early Neolithic pottery from Grivac permits a nuanced stratigraphic understanding (Bogdanović 2004, 51–54). According to this, the following distribution applies from the lowermost levels (Tab. 2).

Significant here initially is the increase in impressed and barbotine-decorated wares over the course of the Early Neolithic trajectory. It becomes evident from the table that while painted pottery is first attested from the second settlement phase onwards, it also encompasses less than 2% of the entire spectrum. This consists rather overwhelmingly of linear painted motifs, with curvilinear painting patterns only occurring from Grivac III onwards. A subdivision according to the different painting colours presents the following percentual distribution (Tab. 3).

While a significant proportion of white painting is still evidenced during Grivac II, this recedes markedly with the arrival of Grivac III in favour of red painting. At Grivac, the development from initially white to overwhelmingly red, and finally black painting can easily be followed.

	undecorated	impresso	applications	barbotine	plastic strips	incisions	grooves	fluting	painting
Grivac I	86.8	3.82	3.3	1.87	1.4	0.62	2.19	–	–
Grivac II	87.99	6.18	1.26	2.11	0.26	0.35	–	0.55	1.3
Grivac III	74.11	10.46	2.55	9.68	0.44	0.65	–	0.39	1.72

Tab. 2: Grivac. Distribution of decorative types on Early Neolithic ceramics according to the lowest layers. Indicated is the percentage of the sherds in the respective layers (after Bogdanović 2004).

	white	dark red	dark	black
Grivac II	32.07	64.83	2.09	1.01
Grivac III	11.53	75.96	5.76	6.75

Tab. 3: Grivac. Percentage distribution of ceramic painting (after Bogdanović 2004).

A continuous development from Proto-Starčevo to classical Starčevo has only been stratigraphically proven at a few sites in eastern Serbia. An overlapping of layers with exclusively monochrome pottery with layers with white-painted ware is proven at Lepenski Vir and Drenovac (Bogdanović 1995. – Schubert 1999, 43–47). White-painted pottery has also been identified at the single-phase settlement of Ajmana-Mala Vrbica (Srejović 1988, 51. – Schubert 1999, 47 and pl. 239). At Lepenski Vir and Drenovac, the subsequent development up to the phase of dark painting on a lighter slip background is also documented (Schubert 1999, 45–47), to which many further sites may be ascribed. For example, dark or bichrome, white-black painting has also been identified at Tečić, Bubanj, Pavlovac-Gumnište, and Crnokalačka Bara (Schubert 1999, 87). A link between these sites and the development of pottery in Bulgaria via vessel painting was suggested by Schubert. He links the material from Karanovo I with his level of Proto-Starčevo III, for which white painting and barbotine decoration is characteristic (cf. Schubert 1999, 79). He considers the trajectory of Karanovo I to continue uninterrupted until the phase of spiraloid dark-painted pottery within his level of Starčevo II (cf. Schubert 1999, 86–87). It is very much evident that painted ceramics in the central Balkan region passes through various developmental stages which cannot be readily attested in the western Black Sea region. As a result of this, a precise parallelisation of the cultural trajectories in both spheres solely on grounds of painted motifs remains unclear. What might be considered certain is a chronological anteriority to Karanovo II, and thereby to Ovcharovo-Gorata. Interestingly, the linear black painting on the vessel fragments from Ovcharovo-Gorata would be contemporary with Schubert's level of Starčevo III, where he notes a decrease in spiraloid motif forms in favour of linear-Ghirlandoid patterns (Schubert 1999, 88–89). Some of the decorative techniques are, in fact, reminiscent of those from Ovcharovo-Gorata such as, for example, plastic adornments, cordons employed as motifs, applied blossoms, and the frequently aforementioned incised motifs composed of vertically running, parallel zigzag lines as might be found upon vessels from Svetozarevo (Jagodina)-Bunar (cf. Galović 1964, pls. 1/1; 3–4; 6/4–7; 7. – Vetnić in: Srejović 1988, 74). In eastern Serbia, a fundamentally different form group follows in the guise of Vinča A, during which channelled ceramics now appear for the first time. A sequence of late Starčevo followed by Vinča A is attested at the eponymous site of Vinča-Belo Brdo (Milojčić 1949, 72. – Garašanin D. 1984, 13–21), although a specific hiatus evidently occurred between both settlement periods (Parzinger 1993, 60). Parzinger fills the gap within his Horizon 3b with the finds from Pavlovac-Gumnište (Garašanin, Garašanin 1971. – cf. Parzinger 1993, 67 and Suppl. 2). By means of contrast, Schubert expresses doubt in the stratigraphic sequence of Pavlovac-Čukar (with linear dark-painted pottery) and Pavlovac-Gumnište (with spiraloid dark-painted ceramics) which is foundational to this argument (Schubert 1999, 49).

6.2. The Early Neolithic Settlement of Belica and a Find of Figurines allegedly Originating from there

In 2008, Milorad Stojić reported upon a unique discovery of a cache of Early Neolithic idols, presently unique in its scope, purported to come from the village of Belica near Jagodina (central Serbia) (Stojić 2008). Large portions of the discovered finds are alleged to have been uncovered by a rescue excavation in January 2002 under the direction of Stojić. Attributed to this find were largely heavily stylised female-shaped (gynaecomorphic) figurines, representations of human body parts, and even miniature hatchets, as well as a few abstract objects. In total, the find was to have consisted of 61 stone, 10 bone, and 7 clay figurines (Figs. 98–99). In July 2012, Hans-Jürgen Gawlick (Leoben) and Wolfgang



Fig. 98: Belica. The supposed Early Neolithic finds. Museum Jagodina (N. Borić).



Fig. 99: Belica. The supposed Early Neolithic finds. Museum Jagodina (N. Borić).

Frisch (Vienna) succeeded in identifying the stone types of all lithic artefacts from the figurine find. These comprised serpentinite and, in the case of a single figurine and some unworked fragments, stone originating from the immediate vicinity of the site. An excursion into the find site's broader environs served to localise serpentinite deposits. Most likely, the stone source originated from an ophiolite belt running in a northerly direction some 40 km west of the find site. Debris could be collected from the riverbeds of this massif (most prominently from the Ibar and Western Morava). Also present in the find were various unworked stones and two dozen fragments of pottery vessels. Since the late 1990s, individual figurines have been frequently collected by the village's inhabitants at the edge of the locality. The necessity for a rescue excavation arose from the appearance of a discolouration from a filled pit on a field path south-east of the



Fig. 100: Belica. Geomagnetic mapping of the archaeological site. The enclosure ditch of the Early Neolithic settlement is clearly visible a little to the right above the centre of the picture (Eastern Atlas, Berlin).

village, from which, according to Stojić, the aforementioned figurines are said to have come. The upper section of the feature had already been largely removed through the impact of traffic from agricultural vehicles on the path and the intensive erosion of the slope, so that only the lowest level of some 10 cm could be excavated by the archaeologists under any manner of controlled conditions. Following this rescue exposure, Slavisa Perić (also of the Archaeological Institute, Belgrade) undertook further excavations at the site during the summer of 2003.

An initial visit to the site by a Tübingen work group (including the present author) took place in early 2012. By means of geomagnetic mapping of the site by the Berlin company Eastern Atlas, the outline of the settlement and, in part, its internal structure could be identified. The settlement displays a core area surrounded by a ring ditch (Fig. 100). The settlement structures also continue beyond this 'core area'. The area excavated by Stojić in 2002 lies within the settlement's interior on a modern field path. Three AMS dates are available for the dating of the settlement site as the organic components from fragments of vessel pottery allegedly found together with a portion of the figurines have been measured (Poz-49793: 6830±40 BP; Poz-51241: 7000±40 BP; Poz-51242: 7150±40 BP). One reading provided a date for the site as had been expected which was within the 57th century BCE. The two other dates with calibrated results of around 6000 and 5900 calBC seem too early in date. These earlier dates can be explained by fractions of fossilised organic substances within the clay matrix, these causing the results to appear older. Various attempts to date bone finds failed as either not enough collagen remained in the samples or the finds had been contaminated with other organic material in the course of restoration. In typological terms, the ceramic find material belonged to the phase of the developed Early Neolithic.

In 2012, Perić published a report with Dragana Antonović in which the authenticity of the figural finds was brought into doubt (Antonović, Perić 2012). New examinations undertaken on behalf of the University of Tübingen confirmed that some of the figurines were fashioned with modern tools. These demonstrably falsified pieces were

mixed with genuine artefacts from the Early Neolithic period. Thus, in the present author's opinion, the find in its entirety can no longer be viewed as authentic. By means of a Tübingen research project financed by the Thyssen Foundation, it was possible to study the discovery in greater depth. An important argument for its authenticity would have been a secure context explored purely though archaeological investigation; yet, here, contradictory statements from the researchers who participated in the work exist. What is undisputed is that at least parts of the find were discovered within a rescue excavation supervised by Stojić in January 2002. The find situation was photographically documented, although it was only published in sketch-like plans and profiles. While Stojić assumes that the entire find is to be understood as coherent, Aleksandar Kapuran (also involved in the excavation) considers this to be doubtful as too many finds emerged from the mud of the sediment after the archaeologists had already departed.[23] Nenand Tasić was initially tasked with the rescue excavation; however, he was unable to direct the work during January 2002 for personal reasons. It was only as a result of this that Stojić was more or less employed as his substitute. The present findings on the site and the figurine discovery may be summarised as follows:

1. The pit from where the find originated lies within a circular ditched installation which is understood to have constituted part of a larger Early Neolithic settlement. Until the acquisition of the geophysical measurements by the Tübingen team in August 2012, this ditched installation had been unknown. The Early Neolithic chronological ascription could be established independently by means of surface finds collected on site.
2. The 2003 excavations directed by Perić also yielded numerous Early Neolithic finds presently stored in the find depot of the Jagodina Museum. Nevertheless, these excavations related merely to a peripheral area of the settlement, as is only now evident from the visualisation of the settlement structure as presented by geomagnetic mapping.
3. A dating of the organic material from ceramic fragments from the hoard provided a date of approximately 5700 calBC; this corresponded to expectations from the typological classification of the vessel pottery. Nevertheless, only the pottery from the settlement was dated in this way. Its connection to the find of the figurines, at least a part of which has been proven to be of modern manufacture, would now seem to be construed.
4. The independent analysis of the flint artefacts from the hoard by Ivan Gatsov and Petranka Nedelcheva (New Bulgarian University, Sofia) resulted in an ascription of stone artefacts to the developed Balkan Early Neolithic. Thus, in addition to the pottery fragments, the flint artefacts may also be deemed authentically Neolithic.
5. A study of the clay figurines by a work group at the Curt-Engelhorn-Zentrum Archäometrie, Mannheim was able to demonstrate that they had not been carved from burnt hut clay, as had been claimed in the article (Antonović, Perić 2012) but instead had been originally sculpted from fresh clay. The clay figurines thus appear authentic, although they have not yet been dated scientifically.
6. All but one of the stone figurines are fashioned from a single type of stone. Serpentinite, however, is one of the common materials for Early Neolithic stone figurines.
7. In terms of typology, the majority of the figurines display parallels to examples from sites in South-eastern Europe and Anatolia. Even those pieces from the Belica hoard, which seem as yet unique, still demonstrate an iconography entirely to be expected from the Balkan Early Neolithic's visual repertoire. Hence, someone with considerable knowledge of the South-eastern European Early Neolithic must have been involved as the free artistic invention of these figurines seems to be excluded on grounds of the good parallels. The find ensemble is not only of good craftsmanship, but the individual figures also seem to be typical of the south-eastern Early Neolithic. Nevertheless, the large number of figurines and the sheer range of the depictions was rather unusual, both of these being uncommon for the south-eastern Early Neolithic.
8. Although a determination of age for the surface of the serpentinite objects is presently impossible, clear and insightful results could still be obtained by means of a microscopic analysis of the figures. Four stone objects from the hoard of Belica cited within the aforementioned article as example pieces were examined in the Institute for Geosciences of the University of Heidelberg on November 23rd, 2012 with the aid of a 3D laser microscope. Here, no traces of modern tools could initially be established, although even the fashioning of the pieces by means of prehistoric techniques would not have shown whether the pieces were manufactured some 7000 years ago or only in the recent past. A subsequent investigation undertaken by Emanuela

23. In a personal conversation in Heidelberg on 9 March 2013, Aleksandar Kapuran gave his opinion on the find situation to the present author.

Cristiani at La Sapienza, University of Rome, and comparison with a companion piece fashioned by means of prehistoric techniques on behalf of the University of Tübingen, however, provided undoubted proof of modern manufacture. Here, the comparison with the experimentally worked pieces delivered particularly unequivocal results. The pieces investigated were cut with modern, swiftly rotating tools.

The find ensemble is thus inauthentic as a whole and may be unmasked as a combination of archaeological finds with reproduced stone figurines. The alleged site is, nevertheless, genuinely a settlement of the developed Early Neolithic with a system of ditches. It is entirely possible that those pieces from the discovery at Belica that might be deemed originally Early Neolithic originate from this area. Nevertheless, this cannot be assumed with any certainty considering the conscious attempt at deception undertaken by means of these pieces.

6.3. The Timok Region

Aleksandar Kapuran and colleagues have reported a series of newly discovered Early Neolithic sites from the northern valley of the Timok in eastern Serbia. These include finds from surface investigations collected along the western branch of the Crni Timok (Kapuran, Bulatović, Jovanović 2011). Originating from Kučajna, the only substantial find collection (Kapuran, Bulatović, Jovanović 2011, pls. I–II) may be assigned without difficulty to Proto-Starčevo, which is also affirmed by the present author in contrast to a later chronological ascription by Z. Stanojević (Kapuran, Bulatović, Jovanović 2011, 21). Characteristic early forms are wide plastic knobs on narrow mouths of large vessels, and dimples in the vessel lips (Kapuran, Bulatović, Jovanović 2011, pl. I/3–4). Idols in the form of a strongly abstracted bovine head (cf. Chapter 11.6) typical of the earliest stages of the Neolithic (so-called 'labrets', see Chapter 11.6) also occur (Kapuran, Bulatović, Jovanović 2011, pl. II/19). The extremely fragmented material displayed from a further 16 sites may be ascribed only very generally to the Early Neolithic (Kapuran, Bulatović, Jovanović 2011, pls. III–VI).

Further Proto-Starčevo material from the southern zone of the Timok Valley appeared in the course of rescue excavations in 1990 at Jelašnica in the locality Valuge (Stojić, Ilijić 2011, 59–60). Most chronologically diagnostic is a large bowl with deep dimples in its rim and characteristic large warts on the walls (Stojić, Ilijić 2011, pl. 6/3). A multi-period site settled from the late Early Neolithic to the close of the Chalcolithic (Baden) was excavated within the basin of Dubrava at Knjaževac. The earliest settlement levels yielded copious dark-on-red painted sherds which might be assigned to Schubert's Level III (Stojić, Ilijić 2011, pl. 13 and fig. 45). Following this is a level containing early Vinča material. Further Early Neolithic finds from a small-scale excavation at the crossroads of Kadijski Krst (immediately south of Knjaževac) are kept within the Knjaževac Museum (Peković, Jevtić 2006. – Stojić, Ilijić 2011, 74–76). These finds are not illustrated within the preliminary reports, and also cannot be ascribed to any specific Starčevo period.

6.4. Attempts at Synchronisation between Vinča and Karanovo

As indicated by Wolfram Schier, direct parallelisation of the stratigraphies of Karanovo and Vinča harbours various difficulties (Schier 2000. – cf. also Garašanin 2000). At Karanovo, a development from flat bowls with thickened rims within Horizon III to the high-set carinated bowls typical of Horizon IV can be charted. Certainly, similar high-set bowls may be encountered among the earliest forms at the mound of Vinča. These originate from graves sunken into the sterile subsoil and belong to phases Vinča A1 and A2 alike. By means of contrast, bowls with thickened inner rims and a channelled decoration reminiscent of Karanovo III are first encountered during the later phases of Vinča C1 and C2. The form trajectory thus seems to be contrary at both sites (Schier 2000). Parzinger assumes a beginning of the Vinča occupation during his own Horizon 4; this corresponds to Karanovo III (Parzinger 1993, 80). Following the modified periodisation for Thrace, Lichardus equates Vinča A1 with Karanovo II/III (Lichardus, Iliev, Christov 2002, 361–364). His argumentation is based upon the also uncertain connection of the southern Romanian Dudeşti culture with Vinča which, for its own part, can only be slightly better correlated with the Thracian trajectory. A further problem is the character of Karanovo II/III within Thrace (as discussed above). According to Lichardus, this comprises a chronological phase to which he nevertheless can only assign relatively scarce and nondescript material (Lichardus, Iliev, Christov 2002, pl. 7). According to Nikolov, this is merely a regional form variant (Nikolov 1998, 55–56. – Nikolov 2006. – cf. also Krauss 2008).

It should be added to the discussion on the synchronisation of Karanovo and Vinča that the finds from Ovcharovo-Gorata might be associated with the later stages of Starčevo in eastern Serbia positioned immediately prior to Vinča A1. Should Karanovo II mark this chronological horizon, then a rough equation of Karanovo III with Vinča A1 follows. At this juncture, the finds from Samovodene A–B1 are also significant, as some carinated bowls might be neatly compared with those of Vinča A1 (Stanev 2002a, fig. 160. – Stanev 2002b, pl. 6/3–4. – cf. Parzinger 1993, pl. 46/2–3).

6.5. Kosovo

Within excavations at the settlement of Karagač-Žitkovac in 1955, Nikola Tasić was able to discern two levels which he was able to attribute to the Starčevo and later Vinča cultures (Tasić 1958). In addition to a coarse ware which is barbotine-adorned, a polished fine ware with overwhelmingly linear, dark painting occurs. Largely similar pottery was unearthed at Gladnice from 1959 onwards. As well as the linear, dark painting, a few fragments with white painting were found (Tasić 1998, 47). This material was studied by Jovan Glišić within a dissertation, but remains currently unpublished with the exception of a few small finds (Tasić 1998, 438–445). A longer stratigraphic sequence is presented by the mound of Rudnik, also excavated by Glišić from 1966 to 1968 and in 1984 (Tasić 1998, 49–53, 423–438). The sequence found there corresponds to that found at numerous multi-level settlements in western Bulgaria and North Macedonia. Rudnik I yielded exclusively monochrome-slipped ceramics as well as impressed and barbotine-adorned wares. Following this, there is a layer with black-painted and white-painted fine wares in Rudnik II. The painted motifs are both curvilinear and linear. In Rudnik III, the white painting is replaced by exclusively dark painting while largely retaining painted motifs. In Rudnik IV, the plastic adornment of vessels predominates, and carinated forms appear in greater numbers. With this phase, it would seem that the horizon of Ovcharovo-Gorata is reached, while the earlier phases of I to III represent the trajectory from Proto-Starčevo to Starčevo II, with this corresponding to the development of the Pre-Karanovo I horizon up to Karanovo I in Thrace and northern Bulgaria.

6.6. Are there Mesolithic Traditions in the Neolithic of the Central Balkans?

As the Danube Gorges is the only area within the entire Balkan-Carpathian region presenting a demonstrably continuous settlement from the Mesolithic into the Neolithic, it would be of interest should there be elements evoking the Mesolithic tradition found within its Neolithic. In terms of the stone chipping industry, not only does the technology appear to change with the neolithisation, but a supply of raw materials from more distantly removed regions may also be evidenced with the Neolithic's advent (cf. Radovanović 1996, 225–252. – Gatsov, Nedelcheva 2009). Remarkably, the characteristic trapezoidal hut structures erected in Mesolithic tradition endure until well into the Neolithic era in the zone of the Danube Gorges, and therefore not only at Lepenski Vir (Borić 2002), but also at Vlasac (Borić, Raičević, Stefanović 2009) and at Padina (Borić 2011, fig. 12). Also connected are specific burial customs within the houses or their immediate vicinity (Borić 2005). Ultimately, subsistence within this special zone that was unsuitable for agriculture and only somewhat capable of supporting cattle husbandry remains focused on fishing and hunting until well into the Neolithic (Borić 2008, tab. 1). On the one hand, beyond the actual area of the Danube Gorges, no elements might be discerned which could be part of a Mesolithic tradition; insofar, the pre-Neolithic groups played no part in the transmission of the Neolithic package. On the other hand, objects from the agrarian and pastoral communities may be identified within contexts ascribable to the hunter and fisher groups. This is first and foremost the pottery, which does not experience any alterations at the hands of the inhabitants belonging to the zone of the Danube Gorges, reflecting rather classical Starčevo ceramics as known from the surrounding Neolithic settlement sites (Perić, Nikolić 2004). Regarding the question as to the mechanisms by means of which this pottery could reach the fisher settlements at the Danube Gorges, the mind turns to models similar to the "fertile gift" model developed by Kristina Jennbert for the Baltic Sea (Jennbert 1984. – Jennbert 1988. – Jennbert 1994). Nevertheless, the Starčevo pottery in the settlements of the Danube Gorges would seem to have been more than a symbolically charged gift exchange, as it was genuinely used, and occurs in the settlements in large numbers. Zvelebil's Availability Model (Zvelebil 1986. – Zvelebil 1989. – Zvelebil 2001) can also only be applied to the situation at the Danube Gorges with some reservations, as an adaptation to the Neolithic's economic mode is not evidenced at any juncture. Precisely because this environment lends itself so ideally to fishing, the aquatic resources continued to be exploited during the Neolithic period.

7. Neolithisation Processes in the Region of the Lower Danube

The region between the Balkan Mountains and the lower Danube is among the best researched Neolithic cultural landscapes within South-eastern Europe. Here, foundational work was most prominently provided by the expansive excavations of north-eastern Bulgarian tell settlements led by Henrieta Todorova. In turn, the Bulgarian north-east has been intensively investigated by Bogdan Nikolov, although the results of his excavations are unfortunately only cursorily published. The sites of Dzhulyunitsa and Ovcharovo-Gorata (newly reevaluated herein) also lie within northern Bulgaria. The flat landscape of Wallachia north of the Danube stretching up to the southern Carpathians may also be deemed to be well-researched. By means of contrast with the Bulgarian Danubian lowlands, significantly fewer Early Neolithic sites nevertheless occur within Wallachia, which, in light of the comparatively good state of research, can only be explained by either tallying with the actual situation during the Early Neolithic, or alternately by the conditions of archaeological preservation. Even more so than the Thracian Plain, that of Wallachia represents an alluvial landscape within which colluvium could accumulate from the Early Neolithic until the present day, and beneath which might potentially be concealed an entire Neolithic cultural landscape.

7.1. Dzhulyunitsa

The Early Neolithic settlement of Dzhulyunitsa located in an area called "Smardesh" is currently proving to be a key site in determining the characteristics of the earliest Neolithic within the Balkans. Meanwhile, numerous survey trenches excavated within its substantial settlement area have produced an extensive array of finds, and there is now good reason to assume that the occupation of this site commenced at the very onset of neolithisation within the eastern Balkans. Additionally, this site remained occupied throughout the entire Early Neolithic sequence, thus providing us with a unique insight into cultural-historical developments at the dawn of agriculture and animal husbandry within this region.

The site was presented in various discrete articles by its excavators Petar Stanev and Nedko Elenski. A summary of the results with a portrait of the individual Neolithic settlement phases was published by the present author (Krauss et al. 2014). This article also contains a contribution from Bernhard Weninger and Lee Clare regarding the ^{14}C dates and their modelling in respect to their stratigraphic position, and an evaluation of the animal bone finds by Canan Çakırlar and Petăr Zidarov. The contents of this publication will be briefly summarised below.

On the basis of the results from surface surveys, it might be estimated that the Neolithic occupation extended over some 4 ha, and that there were noticeable shifts in settlement activity within this area over the course of its long occupation, ultimately leading to the development of a pronounced horizontal stratigraphy. The spatial extent of the settlement towards the close of the Early Neolithic (Phase Dzh-IV) has been determined more precisely. During this period, the settlement area covered approx. 0.2–0.3 ha. In the easternmost part of the site, there is a small spur upon which a Chalcolithic settlement mound developed. Sporadic finds attributed to the Early and Middle Bronze Age found on the tell suggest that the accumulation of deposits did not completely cease at the close of the Chalcolithic, but instead continued into these later phases. A substantial

concentration of Bronze Age finds has been detected in an area south-east of the mound where the Bronze Age settlement's centre might be expected to have lain.

The oldest layer (Dzh-I) lies directly on loess, and has an average thickness of 0.2–0.3 m, although it reaches depths of up to 1.0 m in some pits. In all probability, structures from this early period were exclusively pit-houses, between which further features were discovered, although these were probably not directly associated with the houses.

The second settlement layer (Dzh-II) has a thickness of 0.45–0.90 m in the central trenches. Currently, clearly defined buildings or prehistoric surfaces have not been discovered for this phase, although three extensive concentrations comprising the remnants of clay ovens and three large ashy deposits have been identified. In the course of extensive horizontal excavation, it was observed that some pits from this second layer cut into deposits from the underlying first settlement layer. In comparison to the earliest settlement level (Dzh-I), this second layer is characterised by considerably thicker deposits, and especially by the occurrence of a greater number of finds.

The third level (Dzh-III) has only been documented sporadically over the entire area, being a mere 0.10 m thick at most. In comparison to all other layers, this particular deposit is not only significantly thinner, but also of a much firmer texture and not ubiquitously present even in the settlement's centre. It is extremely likely that this reflects a levelling layer. There are absolutely no signs of house floors in this level, and no remains of loam daub. This suggests that it may have been an area within the settlement free of structures, with any associated constructions currently poorly known on account of the limited extent of excavation work. Nevertheless, the platform for an oven has been assigned to this settlement phase.

The fourth settlement level (Dzh-IV, as yet only detected in the central part of the settlement) is 0.90 m thick, and is divided into three different subphases. In this layer package, house walls were exposed displaying a post-and-beam construction technique. The houses contained ovens and permanently installed storage vessels.

The lowermost subphase of the uppermost Early Neolithic settlement (Dzh-IVa) is a 0.40 m thick deposit of loose, dark grey sediment. In the southern central part of the settlement, a row of six postholes was observed. Additionally, three subterranean structures were recorded; these were originally accessed via platforms, beams or steps. It is likely that these structures served as workshops, for example, for flint knapping.

In the second subphase (Dzh-IVb), a ground-level house structure and two-thirds of a second such structure (both untouched by fire) were investigated. These buildings were built directly adjacent to one another, i.e. sharing a common wall. The first structure displays a rectangular plan; the floors comprised of a 0.10 m thick layer of trodden earth. The wall foundations rested on a single or double row of stones; there were no signs of postholes and the house walls were constructed using loam. In the north-western corner of the room, an oval-plan oven was excavated. The second building also featured a rectangular plan, with a 0.05 m thick trodden earth floor. Stone foundations in this structure were lacking, except for beneath the common wall separating it from the adjacent building. In the north-eastern corner of the house, a massive rectangular-plan oven was discovered. The remains of this structure suggest that it measured approximately 2.20 × 2.00 m, with a 0.30 m thick wall.

In the third (and uppermost) subphase of the fourth settlement level (Dzh-IVc), a small portion of an unburnt structure was investigated. This house partially superimposed one of the buildings from the underlying subphase. The higher-lying northern part of this house had already been damaged by modern ploughing as had part of a hearth construction, fragments of which were collected from the surface of the field in the direct vicinity. The plan of the house appears to have been rectangular and its trodden earth floor was some 0.10–0.05 m thick. An oval oven-platform was located in the western part of the house.

Finds from the oldest settlement layer at Dzhulyunitsa (Dzh-I) present clear affinities with material from the western Anatolian Late Neolithic. As such, pottery from this level is coeval with the very beginning of its use within the South-eastern European cultural sequence. Bulbous vessel forms with flattened bases or a slightly pronounced foot are particularly characteristic. The vessel form repertoire also includes spherical pots with a narrowing or slightly conical inclining neck, bowls with an S-shaped profile, and open bowls with straight walls (Figs. 101–104).

Quite remarkable here is the elaborate surface treatment of vessels while in their unfired and leather-hard state, this resulting in a consolidated and shiny, sometimes enamel-like appearance. This is all the more exceptional considering the coarse matrix of the pottery with its numerous rough organic inclusions. The only exceptions are the smaller, thin-walled vessels; no organic inclusions are visible with the naked eye in the fractures of these pots. These pottery vessels seem by no means inferior to modern porcelain in their strength, hardness, and gloss. Handles are limited to vertical cord lugs at the widest part of the vessel. Impressed decoration and plastic applications (e.g. warts or wide, well-smoothed incisions) are attested even among the oldest pottery. In their fractures, coarse wares



Fig. 101: Dzhulyunitsa I. Ceramic finds (after Krauss et al. 2014, fig. 6).

are mostly deep black, the fine ceramics varying from grey to brown. Surface colours range from dark hues of ochre to brown, orange, and red. Some fragments feature flamed patterns, and are discoloured dark brown to black. A few sherds also carry a simple painted decoration in a dark colour. This painted decoration takes the form of plain wavy and wide comb motifs extending over large parts of the vessel surface. However, painted pottery constitutes less than 1% of the material excavated. The pottery from Dzh-I is comparable with assemblages from the near vicinity, including the oldest material from Koprivets (Krauss 2006, pls. 1, 3, 5) and Pomoshtitsa (Elenski 2008, figs. 1–9), as well as with vessels from Orlovets (Stanev 2008, figs. 98–101) and Polyanitsa-Platoto (Todorova 2003, fig. 1). Similar vessel forms were recovered from Hotnitsa Cave (Ilcheva 2002, pls. 1–4), but this material most probably already represents a transition from Dzh-I to Dzh-II. Convincing parallels are attested in assemblages from western Anatolia, especially from the Izmir region, specifically Ulucak Va and early IV (Çilingiroğlu 2009, fig. 4/1–2. – Çilingiroğlu 2011, figs. 3, 5), Çukuriçi Höyük (Galik, Horejs 2011, fig. 5) and Yeşilova (Derin 2011, figs. 5–7). In the geographically closer Marmara region, Dzh-I material can be parallelised with Classical Fikirtepe, although vessel forms from Ilıpınar IX–VIII (Thissen 2001, figs. 21–29) or the eponymous site itself (Özdoğan 1999, fig. 33) only permit the identification of more general consistencies with the typological spectrum at hand.

Generally speaking, vessel forms from the second settlement phase (Dzh-II) do not differ substantially from

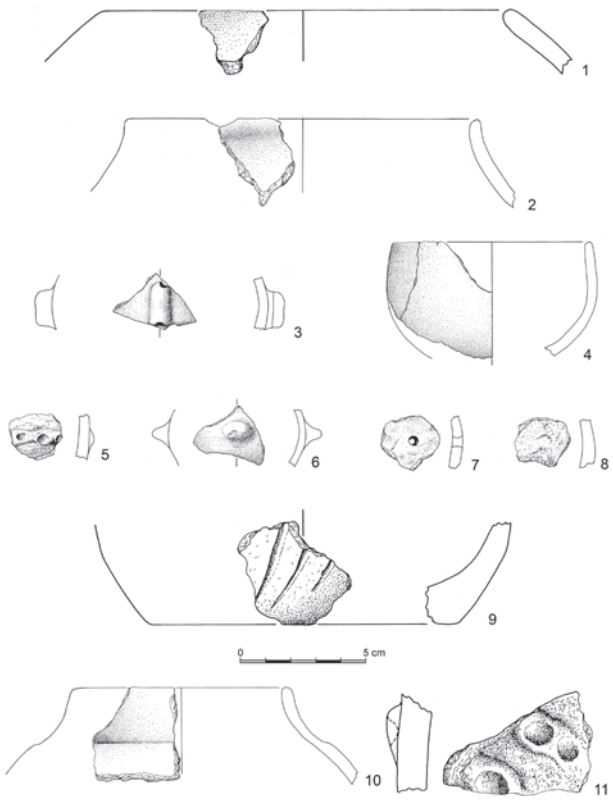


Fig. 102: Dzhulyunitsa I. Ceramic finds (after Krauss et al. 2014, fig. 7).

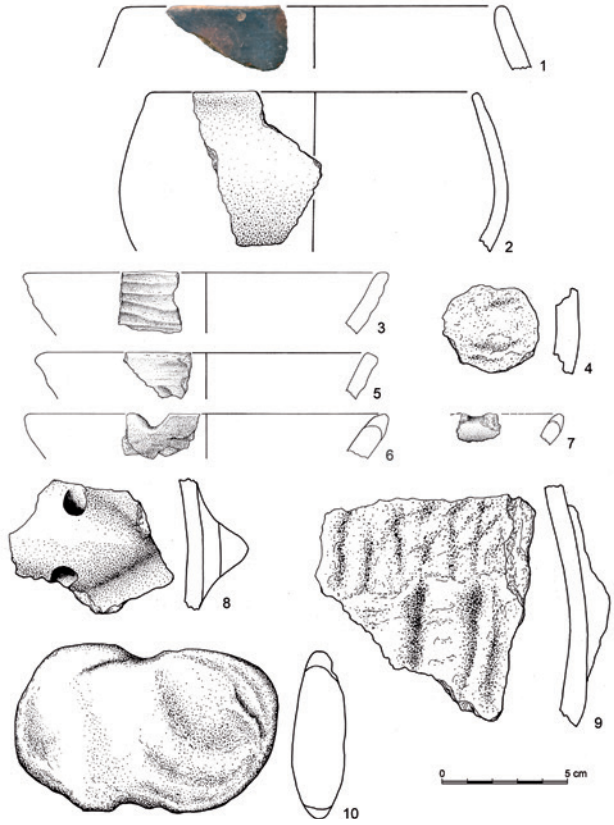


Fig. 103: Dzhulyunitsa I. Ceramic finds (after Krauss et al. 2014, fig. 8).

those of the first phase (Figs. 105–110). However, as finds from this phase are more numerous, a few of the forms appear in slightly greater variation; nevertheless, there are no new vessel forms associated with this settlement phase. Most vessels feature a surface treatment of an equally high standard as that noted for the previous settlement layer. A new development is the occurrence of white-painted decorations on a red slip; the dark-painted decoration from Dzh-I continues to be documented. In addition, there are two fragments featuring a creamy- or ivory-painted decoration, and three sherds painted entirely white. White-painted motifs include dabbed spots arranged into triangle shapes, latticed and stepped bands, parallel W-motifs arranged one above the other, and patterns reminiscent of textiles. The ratio of painted pottery in this layer attains just 1–2% of the entire assemblage. One tenth of painted sherds are of the dark-painted variety. Significantly, in the upper part of Dzh-II deposits, dark-painted wares vanish, and only white-painted decoration occurs. This white-on-red decoration connects Dzh-II with the horizon of Karanovo I in Thrace. Finds of pottery with white-painted decoration in combination with dark-painted vessels have recently been reported from Turkish Thrace, from the site Aşağı Pınar 7 (Özdoğan 2011, figs. 10–11). On the other hand, extensive decorations using beige paint are documented from the Izmir region; these may indicate parallels between Dzh-II material and Ulucak IV h-l (Çilingiroğlu 2009, fig. 4/19, 21).

Due to its highly fragmented state, pottery from Dzh-III does not permit a reliable reconstruction of vessel forms (Figs. 111–112). Particularly notable, nevertheless, is the lack of highly burnished sherds with a dense surface. Only a few fragments carry a white-painted decoration on a red slip, while dark-painted pottery is now absent for the first time. The stratigraphic position of this layer suggests that it may run parallel with developed Karanovo I, which would certainly not be contradicted by the material recovered from the deposit itself. Crucial to this conclusion is most vitally the presence of white-painted and absence of dark-painted decoration. A more precise chronological delimitation is not possible on account of the small number of finds.

Pottery recovered from the fourth settlement layer (Dzh-IV) includes vessel shapes characteristic of the developed Early Neolithic in the region, especially as known from the settlement of Ovcharovo-Gorata (Krauss 2011b, figs. 6–7). Vessels are characterised by bases with a solid foot or a

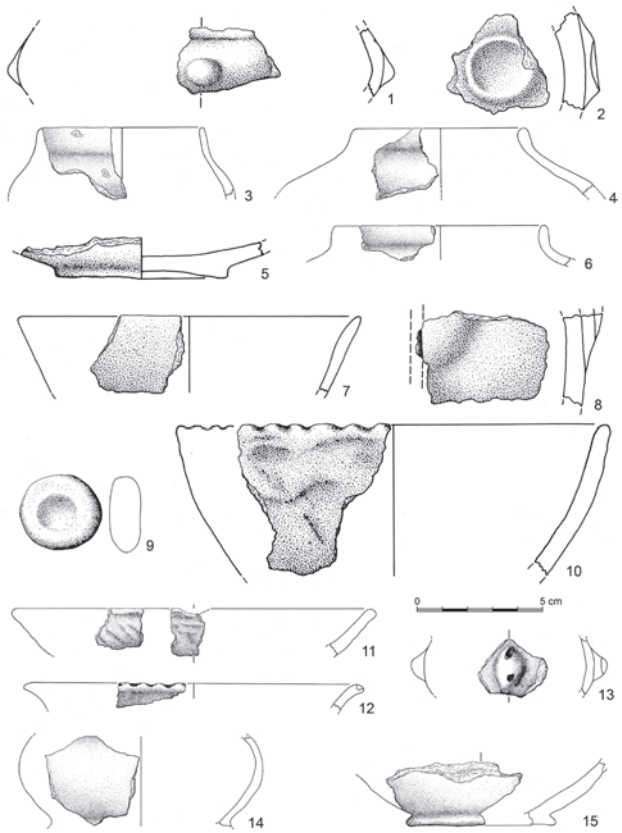


Fig. 104: Dzhulyunitsa I. Ceramic finds (after Krauss et al. 2014, fig. 9).

pronounced foot rim. Common vessel shapes are tall beakers, also with lateral strap handles, and diverse bowl and pot forms (Figs. 113–115). Occasional cylindrical lids belonging to bulbous vessels with elongated cylindrical necks also occur. Generally, pottery from this phase is coarser than that of the earlier phases, although the occurrence of fragments of fine ware still attests to efforts to produce highly burnished and lustrous surfaces. Vessel decoration is now dominated by plastic types of surface treatment. In contrast, painted decoration can no longer be discerned. Particularly characteristic is an extensive channelled relief decoration found especially on beakers, and various plastic applications such as spirals, small blossom patterns, and knobs or warts. With the exception of the rim and foot zones, the entire surface of the coarse vessels is frequently covered either with prick-marks or with parallel or diamond-shaped incised motifs. From a broader perspective, this describes a horizon correlating with Karanovo II in Thrace, further attested within European Turkey at Aşağı Pınar, within Layer 6 (Parzinger 2005, tabs. 116–117. – Özdoğan E. 2011, fig. 10). Coeval with this phase, although typologically different, is material from sites known in Anatolia. On the basis of radiocarbon dating, it is assumed that Dzh-IV is roughly contemporaneous with Ilıpınar V and the uppermost Chalcolithic layer of Ulucak IV.

A special ceramic form identified at the site is the four-footed table which is only attested in the oldest settlement layers of Dzh-I and Dzh-II. Such forms are either devoid of all decoration, or they are trays with a relief-type adornment on their sides; normally, this decoration takes the form of hanging triangles or protuberances pinched out of the tables' surface.

Among the most remarkable finds from Dzhulyunitsa are two anthropomorphic figurines discovered in 2010 (Figs. 116–117). The first figurine, the gender of which cannot be determined, comprises a human torso and head, with what appears to be a masked face and coffee bean eyes. The edge of the head is scuffed. The forearms and the lower part of the body are missing. A small breakage point on the front of the figurine suggests that the arms of the figure were originally folded across the belly. Exceptional from a typological perspective is the masked appearance of the face, a considerably younger feature more commonly associated with figurines from the Vinča culture. Typologically, the piece can be ranked among the previously discovered Early Neolithic figurines from South-eastern Europe, first and foremost due to the characteristic coffee bean eyes. The assignment of this figurine from Dzhulyunitsa to the Early Neolithic is further substantiated by its securely documented embedding in the lowermost Dzh-I settlement layer deposits, just 0.50 m in front of the investigated section. Radiocarbon ages were made on a charcoal (OxA-25044: 7095±40 BP) and on a bone sample (OxA-24979: 7145±38 BP) respectively, in direct proximity to the find. According to these, the figurine was deposited at this location around 6000 calBC. The surface of the figurine and the breakage points are heavily worn, indicating that this piece had been in circulation for an extended period of time. A second, smaller figurine was found at the same level, approximately 1.5 m south of the first figurine. This second figurine is of an extremely compact type. It is seated and features a greatly enlarged rump and shortened legs. The arms, which are only suggested, also appear to be crossed across the breasts. Large parts of the head had been chipped away. In spite of its small size, this piece can be attributed to a known format, namely the representation of a seated, presumably female individual, comparable, for example, with a figure vessel from Ulucak IV b2 (Cilingiroğlu et al. 2004, figs. 25, 32, 58). Parallels from Ulucak also demonstrate quite clearly as to how the position of the arms of the Dzhulyunitsa figurine should be reconstructed. The figure holds her hands below her breasts, presenting them in this way to the beholder. This gesture is a commonly encountered characteristic of



Fig. 105: Dzhulyunitsa II. Ceramic finds (after Krauss et al. 2014, fig. 10).



Fig. 106: Dzhulyunitsa II. Ceramic finds (after Krauss et al. 2014, fig. 11).



Fig. 107: Dzhulyunitsa II. Ceramic finds (after Krauss et al. 2014, fig. 12).

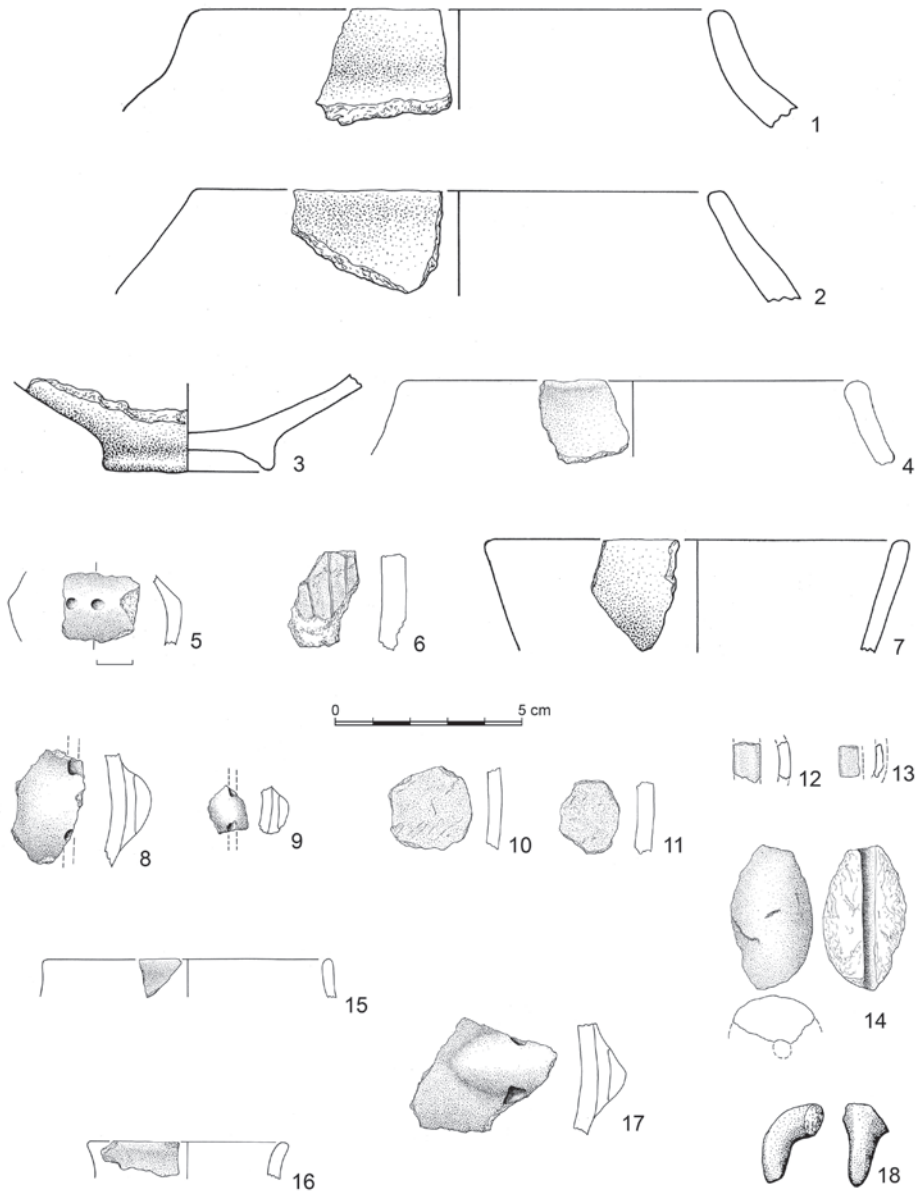


Fig. 108: Dzhulyunitsa II. Ceramic finds (after Krauss et al. 2014, fig. 13).

Neolithic figurines within the Near East and Anatolia, but is only observed in very few examples from South-eastern Europe (cf. Hansen 2007, 350 and tab. 9). It is of further note that this gesture is typical, and observed primarily among the earliest Neolithic figurines, already disappearing during the developed Early Neolithic period (cf. Hansen 2007, 363 and fig. 202).

7.2. Koprivets

The soundings undertaken by Volodya Popov at the village of Koprivets between 1990 and 1994 yielded a cultural sequence spanning from the Early to the Late Neolithic within three stratigraphically unrelatable excavation trenches on a slope falling in the direction of the Baniski Lom (Popov 1996, 35–38). Trench B at the foot of the slope revealed a settlement from the beginning of the Early Neolithic, within which a total of four successive levels could be observed. The find material of all four layers was presented together, representing the earliest developmental stage of the Neolithic north of the Balkan Chain, preceding even the horizon of Karanovo I in Thrace. The earliest material already demonstrates an excellent surface treatment, and can also be compared on grounds of form with (most prominently) the known sites within central western Anatolia such as Ulucak IV, Çukuriçi VIII, and Ege Gübre. Attested stratigraphically is a succession of overwhelmingly monochrome- and

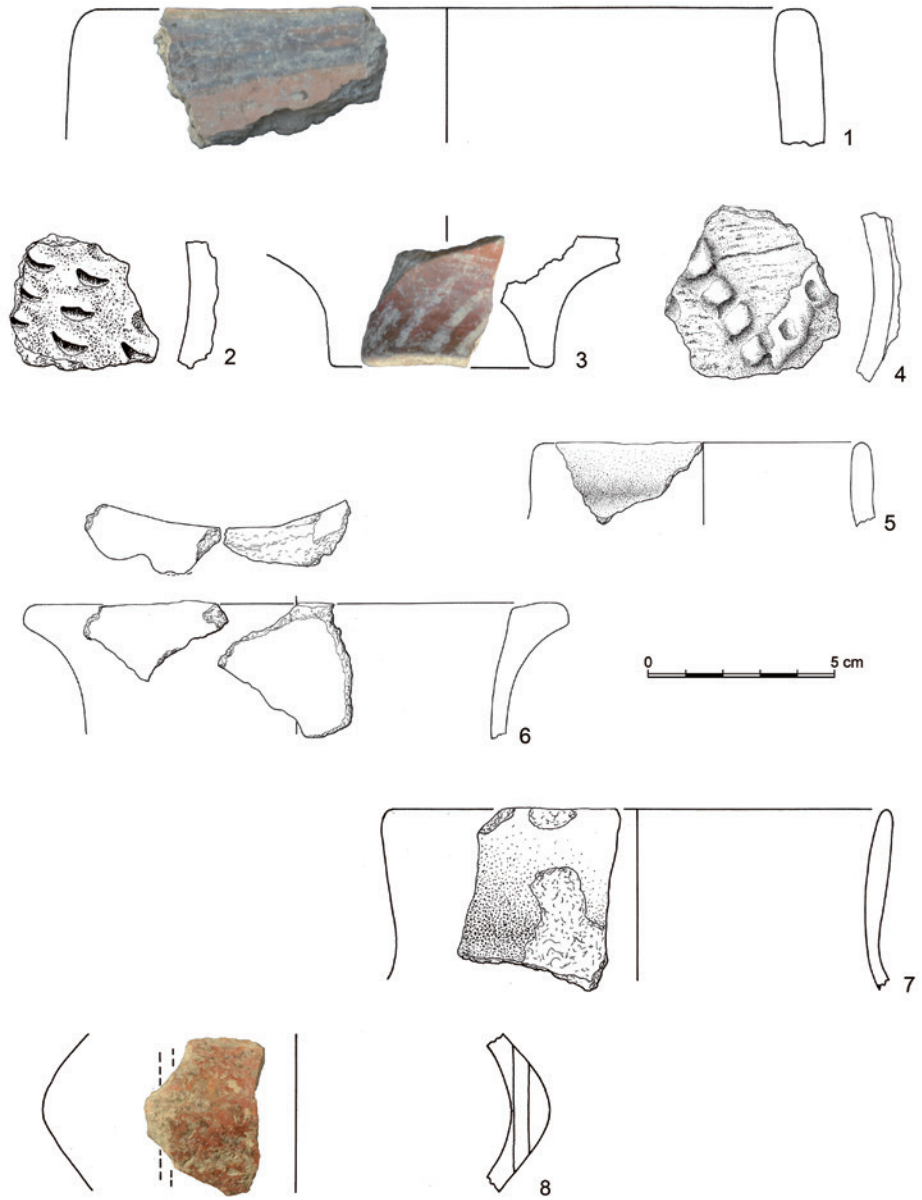


Fig. 109: Dzhulyunitsa II. Ceramic finds (after Krauss et al. 2014, fig. 14).

recurrently dark-painted pottery and a classical horizon overlaying this with white-on-red decoration as at the settlement of Dzhulyunitsa. Predominant among the vessel forms are spherical bowl and pot forms, partly with outcurved rims, and low-set carinated bowls with a vertical standing rim (Popov 1996, fig. 18). Characteristic are very low ring bases barely separated from the body of the vessel. Adornments are rarely observed; better attested are plastic ledges and knobs on the vessel's bellies. Upon a renewed examination of this material within the depots of the Museum of Ruse, further decorative techniques could be identified (Krauss 2006, pls. 1–5; 6/3–7; 7); from this, it is now clear that ornamentation of the vessels by means of scarification and impression was already commonplace. The decoration of the vessel surface with multiple, irregular nipples and dimples on the edge of the lip is also attested. Pierced lugs appearing either as perforated knobs or as applied tubes are to be found on handles. Most vessel fragments are red-slipped, with white pigment used to paint upon them. The finds from Trench B may be parallelised with the phases Dzhulyunitsa I and II. The stratigraphically oldest material of Sondage A of Koprivets had already been associated with Ovcharovo-Gorata by Popov (Popov 1996, figs. 30–36). At Dzhulyunitsa, this corresponds to Phase IV. Crucial to this are beaker forms and beaker-like pots resembling Types B1a and also B3a and B3c from Ovcharovo-Gorata, together

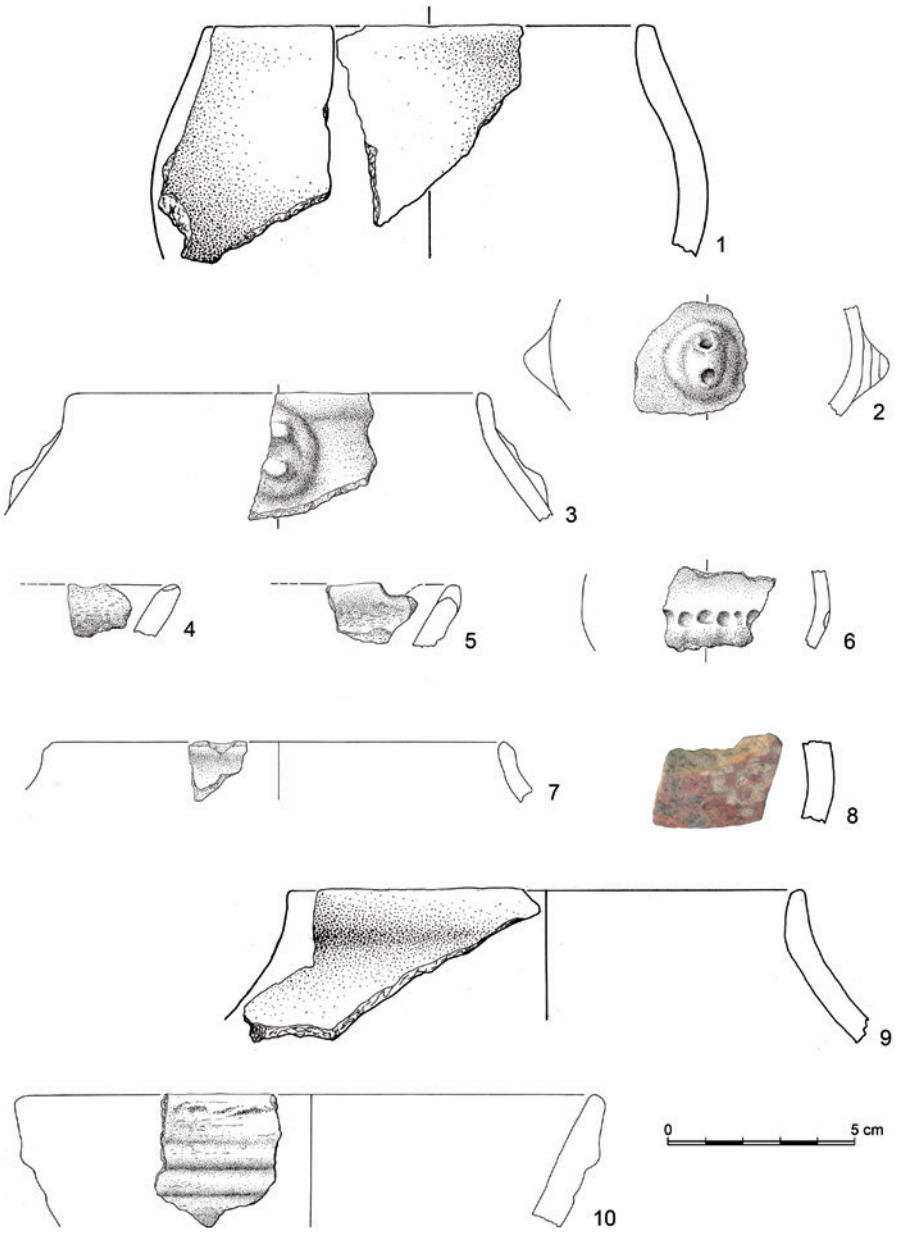


Fig. 110: Dzhulyunitsa II. Ceramic finds (after Krauss et al. 2014, fig. 15).

with the bowl types S1b and S3c. Presented schematically were primarily channelled fragments demonstrating a similar distribution in relation to the unchannelled pieces to that at Ovcharovo-Gorata. Plastically applied blooms which also appear in the material from Ovcharovo-Gorata are further attested. Following this occupation, the site was evidently abandoned, and only returned to at the end of the Late Neolithic. Characteristic carinated, high-set bowls serve to connect the material with Karanovo IV, the regional expression of which has been popularised as the 'Hotnitsa culture' (Todorova, Vaysov 1993, 137–142. – Popov 1996, 91–92).

7.3. The Catchment of the Yantra River

Landscape investigations on the lower course of the Yantra within the plains of Livadite yielded a little material at the village of Balgarsko Slivovo which might be associated with the earliest finds from Koprivets (Krauss 2006, cat. no. 27), and are thus somewhat older than the finds from Ovcharovo-Gorata. According to Popov, the striking settlement mound of Chakmaktepe near Borovo should also have yielded Early Neolithic material, which he connects with the so-called "Ovcharovo-Samovodene-culture" (Popov 1996, 118. – cf. Krauss 2006, cat. no. 142).



Fig. 111: Dzhulyunitsa III. Ceramic finds (after Krauss et al. 2014, fig. 16).

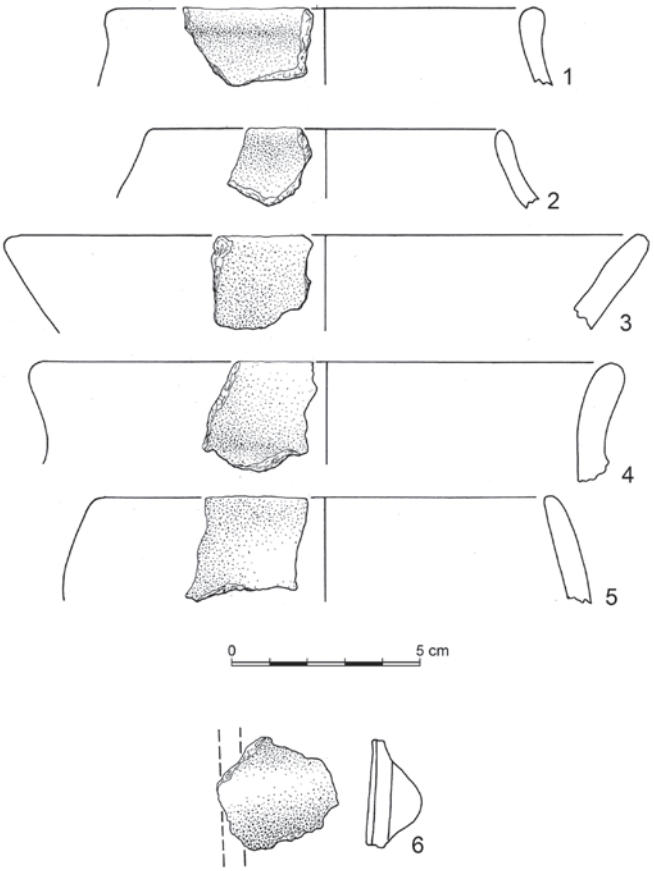


Fig. 112: Dzhulyunitsa III. Ceramic finds (after Krauss et al. 2014, fig. 17).

Elenski published further Early Neolithic material from the fields of Vodopada (Waterfall), Peshterata (Cave), and Mechata Dupka (Bear's Hole) near Hotnitsa, from Strelets-Eren Bunar, and also from the cave of Golyamata Lisitsa near Veliko Tarnovo (Elenski 2000). The finds from Hotnitsa Cave (Peshterata), Hotnitsa Waterfall (Vodopada), and a portion of the finds from Strelets-Eren Bunar may be associated with the earliest material from Koprivets. This comprises coarse pottery, heavily organically tempered and dark black in its breaks, generally coated with a red or ochre slip, and also of delicate, highly burnished fine ceramics fired to a resounding hardness.

The lowest settlement phase within the mound of Orlovets, A1, is also to be synchronised with Koprivets (Stanev, Naydenova, Elenski 1994. – Stanev 1995. – Elenski 2000, 24). The site lies some 4 km east of the Yantra at Polski Trambesh. A few white-painted fragments hail from the subsequent phase of Orlovets A2, from which Elenski deduced a parallelisation with early Karanovo I (Elenski 2000, 24), also viewing the finds of Hotnitsa Bear's Hole (Mechata Dupka) and an additional portion of the material from Strelets-Eren Bunar within this light.

In respect to the form development at Dzhulyunitsa, the already long-known about Neolithic finds of the plateau of



Fig. 113: Dzhulyunitsa IV. Ceramic finds (after Krauss et al. 2014, fig. 18).

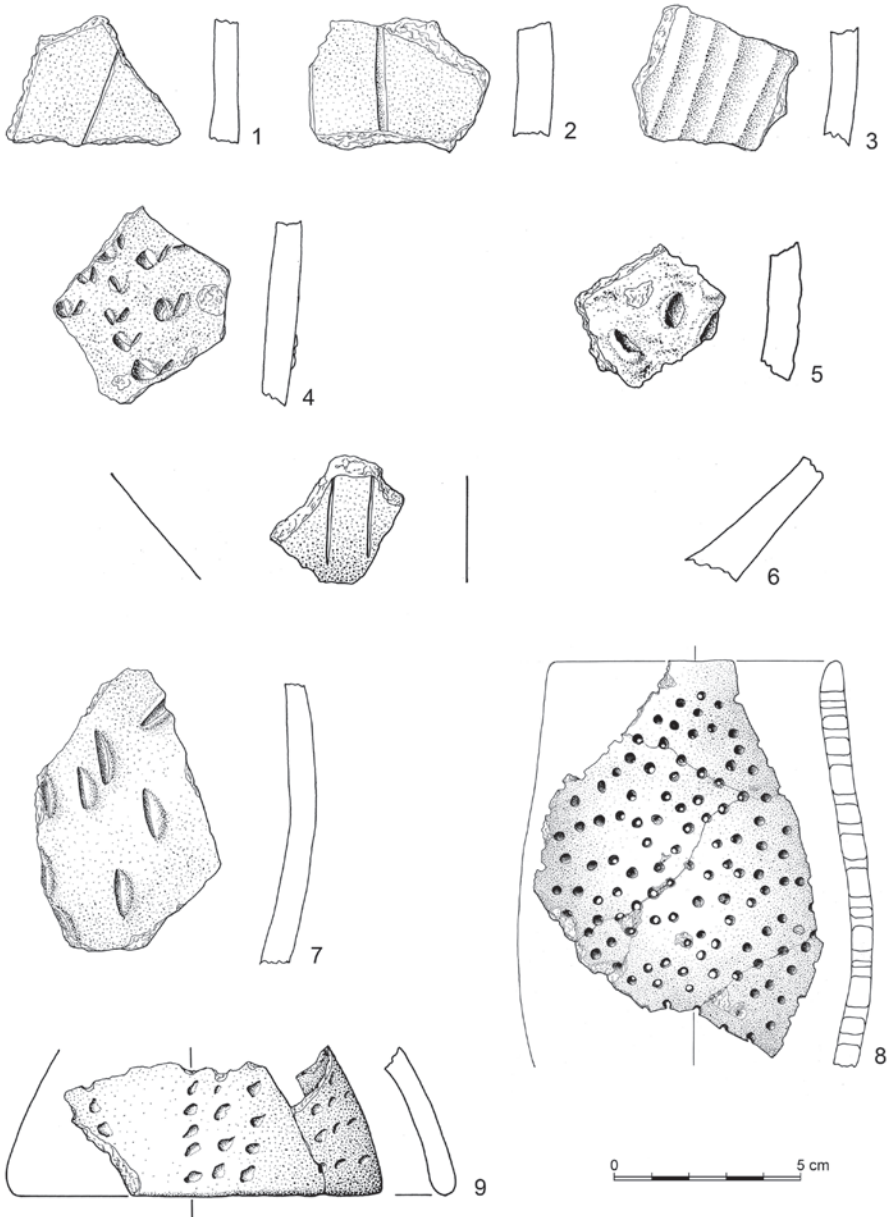


Fig. 114: Dzhulyunitsa IV. Ceramic finds (after Krauss et al. 2014, fig. 19).

Belyakovets (about which Rafail Popov had already reported during the early 20th century) may also be incorporated into this scheme (Popov 1925). Here, finds from both the Small and Large Caves at Preobrazhenski Monastery and the fields of Plochite are pertinent to the Early Neolithic. The finds from Plochite, discovered on a terraced slope south-east of Belyakovets, may be associated with Dzhulyunitsa I. As yet, only a portion of the coarse ware has been published in drawings; most prominent among these, are high, wide-mouthed forms with outward-turned rims and fragments of vessels on a low foot rim (Stanev 1996, fig. 9). Nevertheless, particularly decisive for the ascription of the earliest layer is the hard-fired sounding and excellently burnished fine ware which is preserved in the archive of the Museum at Veliko Tarnovo.[24] The few fragments revealed from the Small and Large Caves such as three pots adorned with rough pricks may be assigned with great caution to the level of Dzhulyunitsa IV, which might be parallelised with Ovcharovo-Gorata (Stanev 1996, fig. 10). One carinated

24. I am grateful to Nedko Elenski for the opportunity of studying the finds within the museum depot at Veliko Tarnovo.

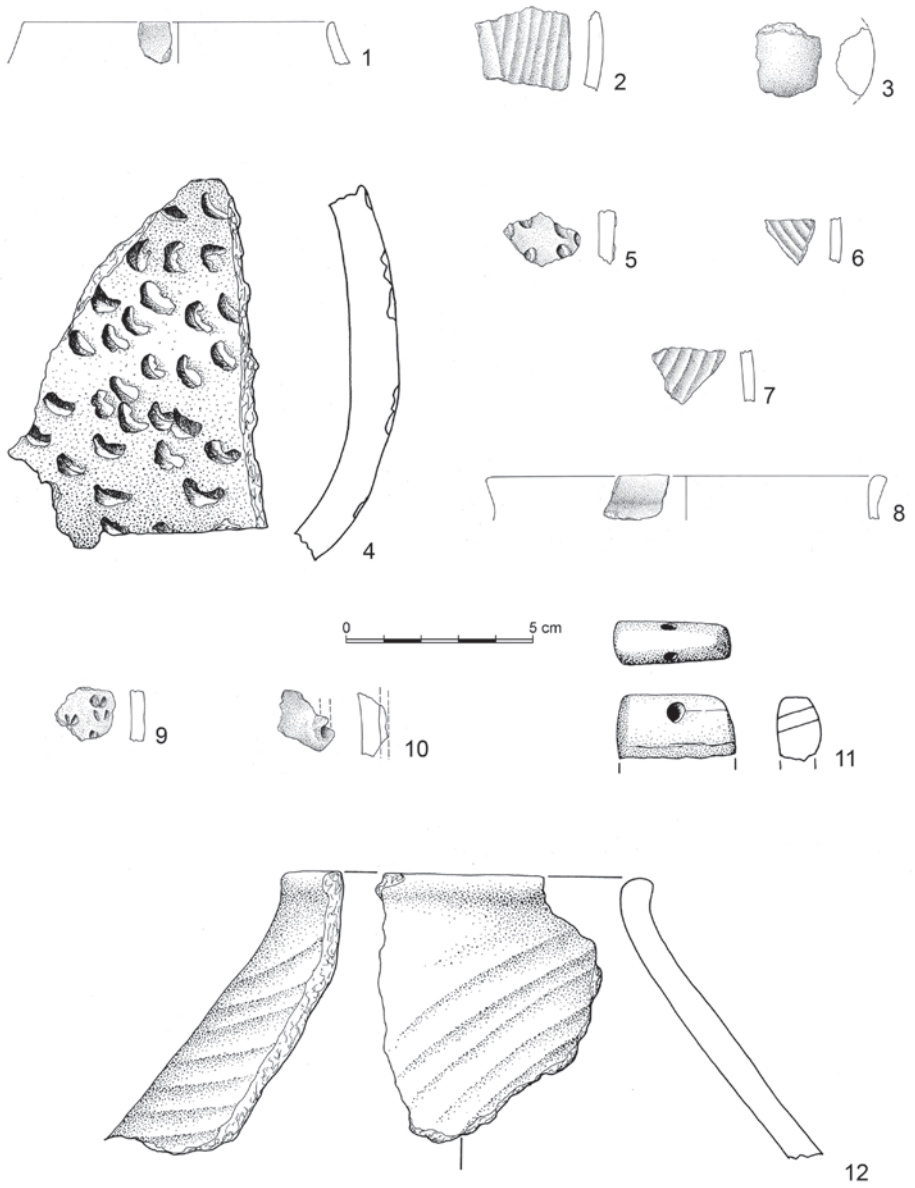


Fig. 115: Dzhulyunitsa IV. Ceramic finds (after Krauss et al. 2014, fig. 20).

bowl resting upon four small legs (already published by Popov) could, however, indicate a later chronological ascription parallel to Karanovo III, and thereby the Middle Neolithic (Popov 1925, fig. 10).

In terms of communication, the mound of Samovodene lies in a geographically opportune position, being located directly at the exit of the Yantra from the rock massifs of Veliko Tarnovo. Petar Stanev excavated the site between 1974 and 1994, and was able to isolate five individual settlement layers, namely A, A–B1, B1, B2, and B2–C (Stanev 2002a. – Stanev 2002b). The earliest find material from Samovodene A is particularly comparable to that of Ovcharovo-Gorata (Stanev 2002a, 190. – Stanev 2002b, 421). While individual forms are reminiscent of, for example, the beakers with band handles B2a, the bowls of type S2c and S3c, or the pot forms T1b, the material should more precisely be associated with the finds from Drinovo, and thus be dated slightly later. In particular, the deep-set narrow cups with a long conically tapering neck and inverted lips (Stanev 2002b, pls. 2/7; 3/5) find suitable counterparts in the forms from Drinovo. In Samovodene B1, high cylindrical cups with a huge tap-like handle, rounded in profile, are characteristic of Karanovo III. Carinated bowls may be found from Phase B2 until the end of the settlement; these represent the Late Neolithic in the manner of Karanovo IV.

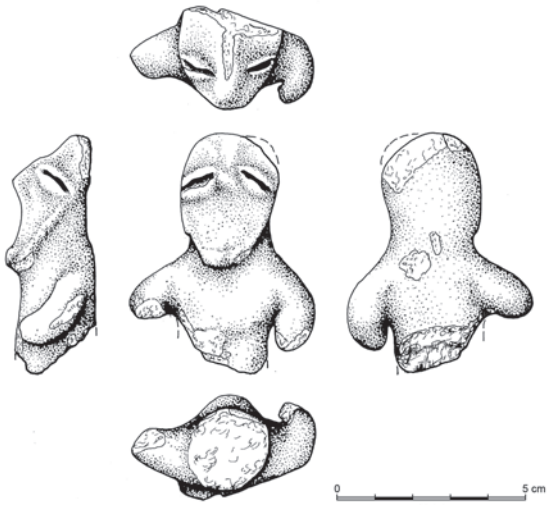


Fig. 116: Dzhulyunitsa I. Ceramic figurines (after Krauss et al. 2014, fig. 23).

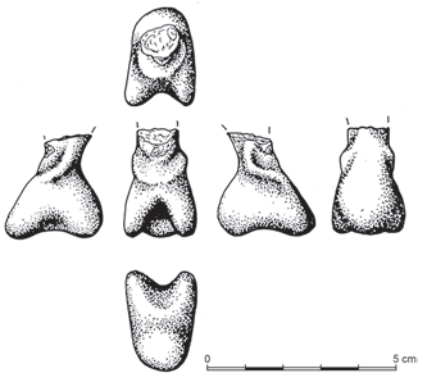


Fig. 117: Dzhulyunitsa I. Ceramic figurines (after Krauss et al. 2014, fig. 24).

At the foot of the Tash Bair near Novgrad, field surveys have provided evidence of an extensive settlement of the Late Neolithic (Krauss 2006, 146–155). Since 2018, this site has been investigated as part of a Bulgarian-German research project funded by the German Research Foundation, with Sven Conrad directing these investigations from German side. The settlement was heavily affected by later fortifications from the Iron Age and the Middle Ages. Pottery from the Vădastra group has been found at the site, but also materials from the local Bulgarian Late Neolithic and the Boian culture. So far, it is still largely unclear how these different find complexes are stratigraphically represented.

7.4. Ovcharovo-Gorata

From 1974 to 1979, archaeological excavations were carried out at Ovcharovo-Gorata by the Targovishte Regional Museum of History under the direction of Ilka Angelova. Twenty-seven years after the campaign's conclusion, the task of processing the excavation results was passed on to the present author by the excavation's scientific advisor, Henrieta Todorova, to be realised in collaboration with her son, Ivan Vaysov. In the spring of 2004, Targovishte was jointly visited by the present author and Vaysov for the first time in order to inspect the finds and excavation documents. With the support of the German Research Foundation (Deutsche Forschungsgemeinschaft), the project began on October 1st, 2005 under the auspices of the Eurasia Department of the German Archaeological Institute (Deutsches Archäologisches Institut, DAI). The digitalisation of the find inventory and old documents was completed in collaboration with Vaysov and students from the Freie Universität Berlin between March and April 2006. This inventory process (as well as all the work conducted on the older excavations) benefited from the extremely generous support of colleagues at the Regional Museum of History in Targovishte.

The results of the evaluation of the former excavations at Ovcharovo-Gorata were published in monograph form (Krauss 2014). This publication also contains the findings of an archaeoceramological study of the vessel pottery by Małgorzata Daszkiewicz, Gerwulf Schneider, and Ewa Bobryk, an appraisal of the silex artefacts by Nguyen Van Binh, the polished stone tools by Florian Klimscha, and the animal bone tools by Petăr Zidarov; it also includes remarks on the slaughtering refuse of the settlement by Norbert Benecke (partially based upon an earlier evaluation by Günter Nobis), and a general assessment of the use of the plant resources within northern Bulgaria during the Neolithic by Elena Marinova. Accordingly, only the most important results of the analysis of the structures uncovered and the ceramic finds need to be swiftly recounted here.

In the preliminary reports by Angelova, the structures uncovered in Ovcharovo-Gorata were introduced according to their ostensible settlement horizon, of which there are four. These horizons were numbered by stratigraphic sequence, ranging from the oldest (I) to the youngest (IV) respectively. Inasmuch as all subsequent publications employed their own respective stratigraphic naming systems, it was decided to use the original numbering for excavation documents, the uppermost settlement being thus Horizon I, the lowermost Horizon IV. The four settlement plans published by Angelova do not suggest any manner

of meaningful, systematic construction. In the plans for the uppermost settlement horizon, a double row of houses with post framework runs from the north-west to the south-east, with the main beams likewise oriented north-west to south-east. In contrast, the rows of post-frame houses in the north-east and south-east of the settlement tend to run from east to west. Furthermore, the plan for the latest settlement conspicuously does not feature any pits. Only the second settlement horizon reveals a row of pits inside and outside of the alleged post-frame construction. In the southern part of the settlement, however, there are nine oven platforms to which no post-frame structure could be assigned. Furthermore, yet another entirely different settlement organisation is indicated by the third settlement horizon, where multiple post-frame houses are grouped loosely around two open spaces in the south-western part of the settlement; nevertheless, only a few of the house layouts display a building entrance positioned in relation to these open spaces. The fourth, lowermost settlement horizon presents a fundamentally different pattern of construction encompassing the entire area of the settlement and (unlike the three postulated upper horizons) not limited to the area north-west of the canal. Instead of possessing solely post-frame houses as in the upper settlement horizons, exclusively pit-houses are documented. Indeed, the building plan for the settlement becomes altogether much more complex; this reflects the markedly better documentation accomplished during the final two years of the excavation.

A comparison of the plans published in the preliminary report and the original documentation revealed numerous manipulations of the architectural features. Thus, no wall trenches as suggested in the published building plans were actually detected among the post-frame constructions. Furthermore, the individual wall posts (often oriented precisely on the grid of the graph paper used for field documentation) were shifted from their exact linear alignment so as to appear more plausible in the publication. Similarly, other apparently superfluous posts were excluded from the published plans. Nevertheless, a different orientation for the construction can be clearly recognised among the fired-clay oven platforms documented in the north-east of the uppermost settlement horizon, this contradicting the east-west orientation of the post-frame houses in this area. Moreover, it is remarkable that many of the oven platforms within the first and second horizons come into precise vertical alignment. This would appear to indicate simple renovations to the oven platforms within one uninterrupted settlement, and yet the postulated post-frame houses stand in clear contradiction to this. It was even established that two post-frame houses from the first and second settlement horizons (one laying right on top of the other) possess fundamentally different orientations although they share the very same oven. The evaluation of the comprehensive photographic records from the excavation work revealed additional discrepancies between the finds actually present and the post-frame houses as previously arranged. Thus, rows of posts (aligned so straight that they might have been drawn along a ruler's edge) clearly cut right through the archaeological finds as visible in photographs. Moreover, some of the rooms indicated by the posts are much too small to be proportionate to the oven platforms positioned within. Additionally, it was revealed that other post-frame houses fit precisely into the 5 × 5 m quadrants indicated on the excavation grid. At many excavation sites in South-eastern Europe, exploratory ground probes are carried out, even to this day, with knives or stakes in order to locate loosely filled pits in the subsoil; this method has proven disastrous. Particularly in Ovcharovo-Gorata, where this method was carried out almost exclusively by school children with little to no archaeological background, the method has led to the creation of an image of the settlement corresponding in no way to the archaeological finds. Significantly, the adjusted finds around the post-frame houses of the third settlement horizon can be projected on to the pit-houses of the lowermost settlement plan without difficulty. For this reason, it has been concluded that the settlement at Ovcharovo-Gorata comprises gently sunken pit-houses recognised first at the outset of the excavation along the profile of the canal, and then again on a larger scale by qualified personnel in the final two years of the excavation. The post-frame houses documented in the intervening years did not withstand critical examination undertaken on the basis of excavation documentation.

In order to reconstruct the actual features, it does not suffice simply to dismiss the manipulated post-frame structures; there were clearly fired-clay platforms for ovens, and the ovens most certainly belonged to houses. The outlines of these houses, however, cannot, in most cases, be constructed based merely upon colourations in the ground. Additional findings such as grindstones and larger concentrations of finds permit distinct areas of use to be identified within the constructions. Indeed, the architectural structures become more apparent within the lowermost settlement stratum. Profile sections providing an idea of the shape of the constructions are available for some of the sunken pits. This most likely entails a building sunken from 0.5 m to a maximum of 1 m into the ground, the walls of which were likely constructed using a post and wattle-and-daub technique (Fig. 118). Remains of clay daub imprinted with wattle patterns have been documented. Parallels to this type of housing may be witnessed in the settlements of Aşağı Pınar and

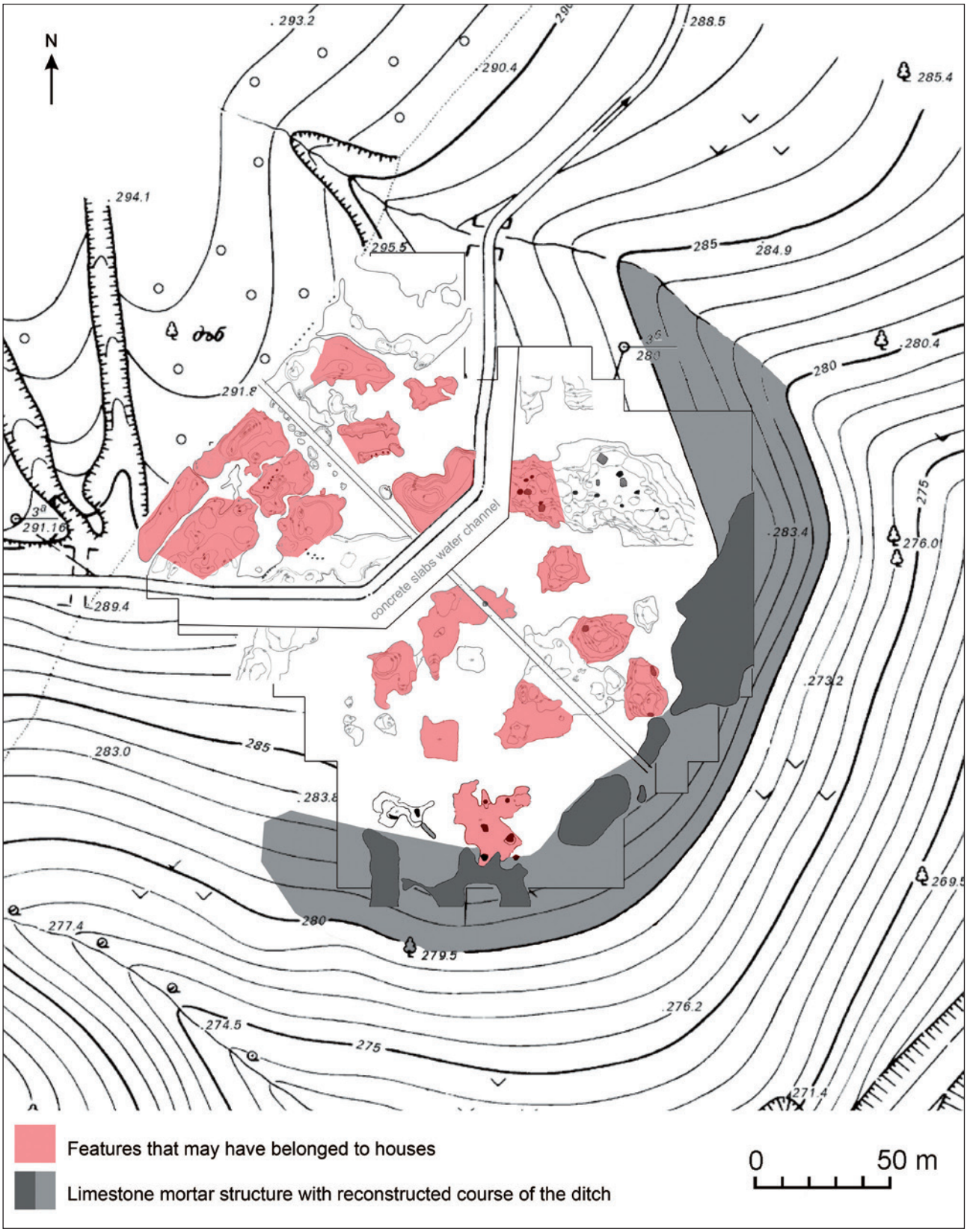


Fig. 118: Ovcharovo-Gorata. Reconstructed plan of the Early Neolithic settlement (after Krauss 2014, fig. 48).

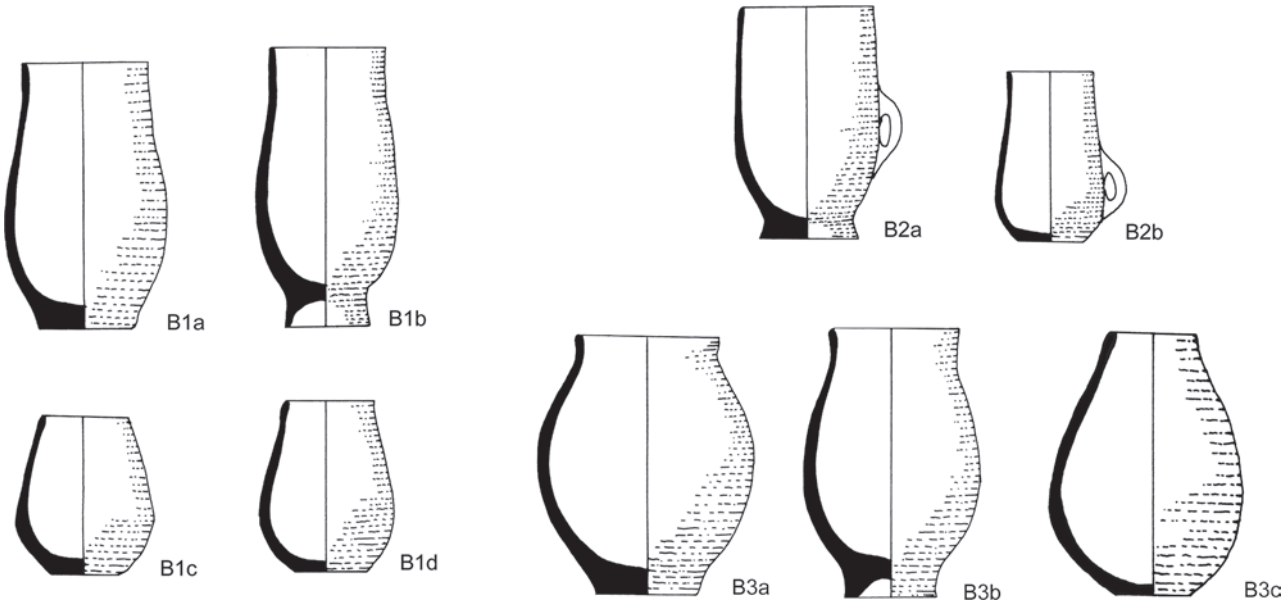


Fig. 119: Ovcharovo-Gorata. Main mug types (after Krauss 2014, fig. 54).

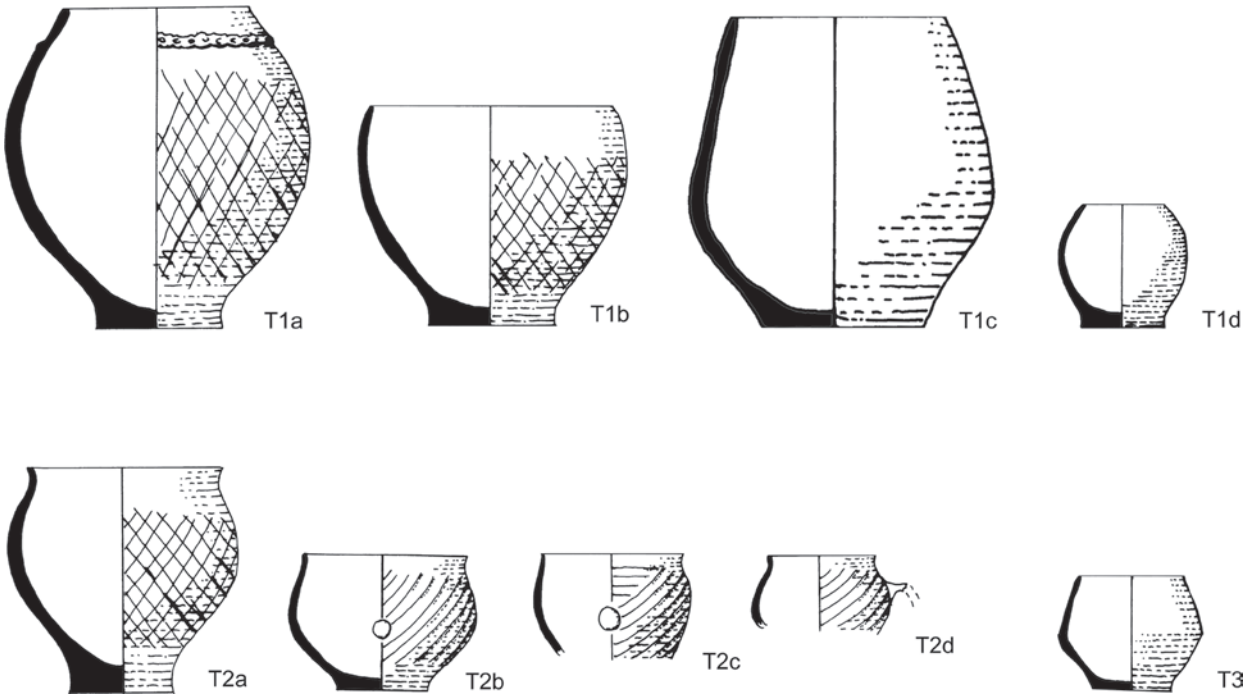


Fig. 120: Ovcharovo-Gorata. Main pot types (after Krauss 2014, fig. 55).

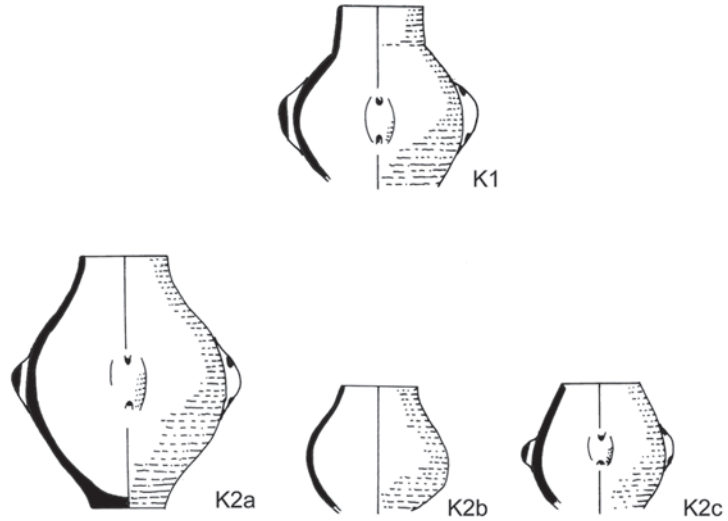


Fig. 121: Ovcharovo-Gorata. Main jug types (after Krauss 2014, fig. 56).

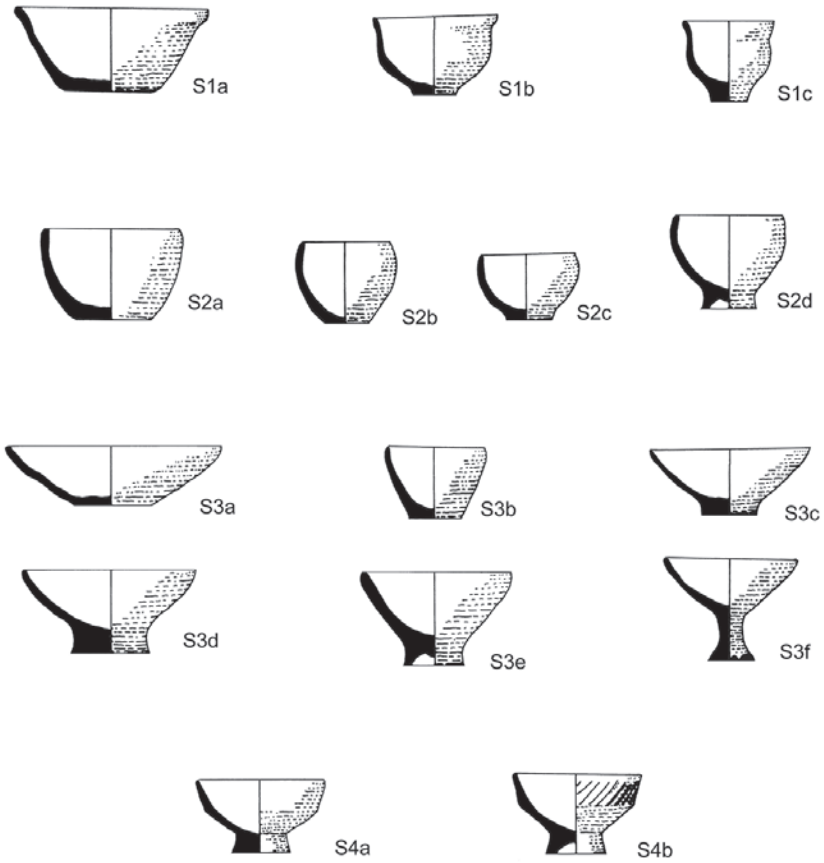


Fig. 122: Ovcharovo-Gorata. Main bowl types (after Krauss 2014, fig. 57).

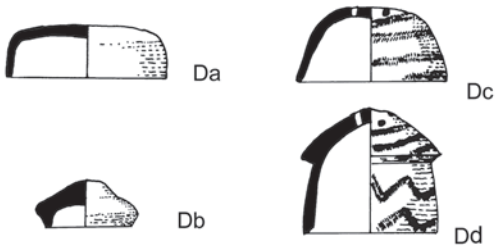


Fig. 123: Ovcharovo-Gorata. Main lid types (after Krauss 2014, fig. 58).

Horizon	Mugs and mug-like pots	Pots	Jug-like vessels	Bowls	Lids	Other vessels*	Unknown	Sum
I	0.23	6.68	0.27	1.72	0.01	0.01	3.57	**12.49**
II	0.13	5.03	0.22	1.07	0.02	0.00	5.80	**12.27**
III	0.24	7.50	0.29	1.90	0.02	0.01	10.34	**20.30**
IV	0.08	0.89	0.07	0.55	0.01	0.01	0.90	**2.51**
Unknown	0.45	17.48	0.51	3.12	0.06	0.05	30.68	**52.35**
Sum	**1.13**	**37.58**	**1.36**	**8.36**	**0.12**	**0.08**	**51.29**	100

Rounding error: 99.92

* Sieve vessels, cups and special shapes.

Fig. 124: Ovcharovo-Gorata. Distribution of vessel types to the postulated settlement horizons (in per cent) (after Krauss 2014, fig. 59).

Ilıpınar in Turkey. The linear structure partially uncovered in the south of Ovcharovo-Gorata during the final days of the excavation was interpreted as a rampart. While extremely important to the overall understanding of the settlement, this find was unfortunately insufficiently documented. An assessment of all available data allows for the possibility that this might simply represent the edges of a sunken area paved with the lime mortar-pebble stone mixture documented. As it is analogous to similar features at the aforementioned settlements in Turkey, the evidence more likely suggests that this feature should be understood as a paved trench facing the settlement, the lining of which was excavated as a raised structure. Precisely such trenches are particularly well attested at the settlement of Aktopraklık near Bursa. Moreover, evidence of just such a trench was also found in the Early Neolithic settlement of Golyamo Delchevo.

The ceramic forms identified included beakers and beaker-like pots (B), pot forms (T), jug-like vessels with conical, narrowed, or cylindrical necks (K), bowl forms (S), and lids (D) (Figs. 119–123). The edge and bottom forms were treated separately, as were the various vessel handles. In total, 23,744 vessel finds were catalogued, only 52.37% of which had been assigned to one of the postulated settlement horizons by the 1970s (Fig. 124). The distribution of the ceramic forms assigned to a particular settlement horizon does not suggest any significant concentration within the total development of the settlement. This should come as no surprise, however, in light of the aforementioned difficulties experienced during work on the construction of the settlement stratigraphy. Due to these problems, as well as the observations on the distribution of the vessel forms in the postulated settlement horizons, it was decided to present the find materials from Ovcharovo-Gorata as a whole, as any division of finds according to stratigraphic units would seem unjustifiable.

As for the horizontal distribution of the finds, a slightly higher concentration of ceramic finds was located northwest of a modern water channel that runs across the settlement. It has not been determined, however, if this concentration reflects the actual finds, or if it is simply a reflection of the selection of finds which reached the museum. Among the vessel forms, the pot forms are particularly numerous. Next (by a wide margin) come the bowl and beaker forms, as well as the jug-like vessels. All other forms appear only infrequently in relation to the total spectrum of forms at the settlement.

The decoration on the ceramics from Ovcharovo-Gorata is extremely varied (Figs. 125–129). Relief surface decoration is by far the most predominant form, including incised, impressed, and excised decoration on the rim and on the vessel base, as well as knobs and other relief decoration on the body of the vessel. The smaller pots and bowls, as well as nearly all of the beaker forms, are covered with fluting. Dark coloured paint has been detected on some of the fragments (Fig. 130).

The ceramics from Ovcharovo-Gorata suggest a single pottery workshop which made do without a specialised potter but was nevertheless oriented toward certain form traditions. Based on the broad spectrum of forms, we can surmise that each household produced its own dishes as needed, with the handiwork being determined more by convention than by changing fashions, the result being that the settlement's production as a whole appears to be quite cohesive today.

The miniature tables with recessed bowl (or so-called altars) appearing in the material from Ovcharovo-Gorata are (without exception) tripodal and feature triangular, dish-shaped indentations on their topsides as well (Fig. 131). Based on the fragments, the bulk of the tables were produced as one piece; no breakage pattern can be detected which would indicate that various parts were attached at a later point. We possess 115 surviving tripod tables (or fragments thereof) from the excavations. From a typological standpoint, they represent a relatively contained group. The height to side-length ratio is nearly always 1:2. The tripodal bases are produced, in most cases, as level extensions of the side surface, and are thus square-edged. From just two fragments, we also know of solid, rounded bases. One fragment with the remains of a ram protome is in existence; otherwise, the dish edges are always level. The sides of the dishes are decorated with various incised, impressed, and excised decorative techniques, although (for the most part) the chequerboard motif appears in variation throughout all examples. In contrast, incised chevron motifs and stamped out triangular motifs appear only infrequently (Fig. 132). Not unlike the other ceramic vessels, the distribution of the tripod tables does not reveal any particular concentration within the individual settlement horizons. On the basis of matching fragments from different horizons, it can even be demonstrated (independent of the stratigraphic observation) that the settlement strata were determined arbitrarily. In a superregional comparison, the miniature tables from Ovcharovo-Gorata can be placed in the broader group of triangular Neolithic altars, the distribution of which is centred within the eastern Balkans. These already appear in the horizon of Karanovo I, being produced throughout the entire Neolithic without significant changes to form or decoration. With regard to the typological development of this form at the tell of Karanovo, its relation to Horizon II is demonstrated once more. The tripod tables' extreme adherence to form and decorative motifs over the course of centuries reveals a pronounced conservatism in comparison with other settlement ceramics and is indicative of a distinctive function. At 0.48% of the total ceramic finds, they make up almost the same percentage as the three bowl subtypes (S1, S2, and S3) together. Despite this, tripod tables are not rare, and in terms of quantity they are significantly represented among the special forms. Their numbers remain, however, noticeably lower than the other surviving small ceramics from the settlement. The form of the objects clearly suggests a function involving specific contents, which, according to their position on the dish, would be uniformly presented. Characteristic elements of the table also include its triangular form, its tripodal base, the abstracted depiction of a ram's head documented on the corner of at least one example, and the preponderant decoration of the sides with chequerboard ornamentation. These are all characteristics which are not otherwise seen on any other surviving vessel group at Ovcharovo-Gorata. A clue as to the contents is offered by one example, a tripod table from Kachitsa, preserved in which are the remains of a seated figure affixed on top of it (Fig. 133).

A large number of anthropomorphic and zoomorphic figures come from the old excavation in Ovcharovo, of which 169 are still preserved in the Targovishte Museum. Among the clearly human-shaped figures, a type possessing a highly pronounced posterior and a narrow upper body dominates (Figs. 134–136). Most figures show a lower body decorated in relief, yet, at the same time, the nakedness of the statuettes is emphasised. In many cases, the arms are set off to the sides and presented as stumps. There is one figure offering an exception, with an arm resting at its side, upon the hip. Some statuettes even include anatomical details, such as a knee, an ankle joint, and toes. The faces, however, remain highly stylised. Due to their material, the two nephrite objects are standouts: a highly stylised anthropomorphic pendant, and a miniature axe that is drilled through from two sides at the neck (Fig. 137). On the basis of its form, the anthropomorphic pendant belongs to a larger find group comprising frog-like or anthropomorphic figures (see Chapter 11.3).

After the evaluation by Florian Klimscha, the inventory of the polished stone tools from Ovcharovo-Gorata is as follows. All of the axe blades examined are polished and imperforated, and can be divided into four main classes



Fig. 125: Ovcharovo-Gorata. Examples of plastic surface decorations on ceramics (after Krauss 2014, pl. 54).



Fig. 126: Ovcharovo-Gorata. Examples of bottom decorations, perforated rims and small humps on ceramics (after Krauss 2014, pl. 55).



Fig. 127: Ovcharovo-Gorata. Examples of ceramic fragments with fluting decorated and with a roughened surface (after Krauss 2014, pl. 56).



Fig. 128: Ovcharovo-Gorata. Examples of stitch and incised decorations on ceramics (after Krauss 2014, pl. 57).



Fig. 129: Ovcharovo-Gorata. Special forms of ornamentation on ceramics (after Krauss 2014, pl. 58).

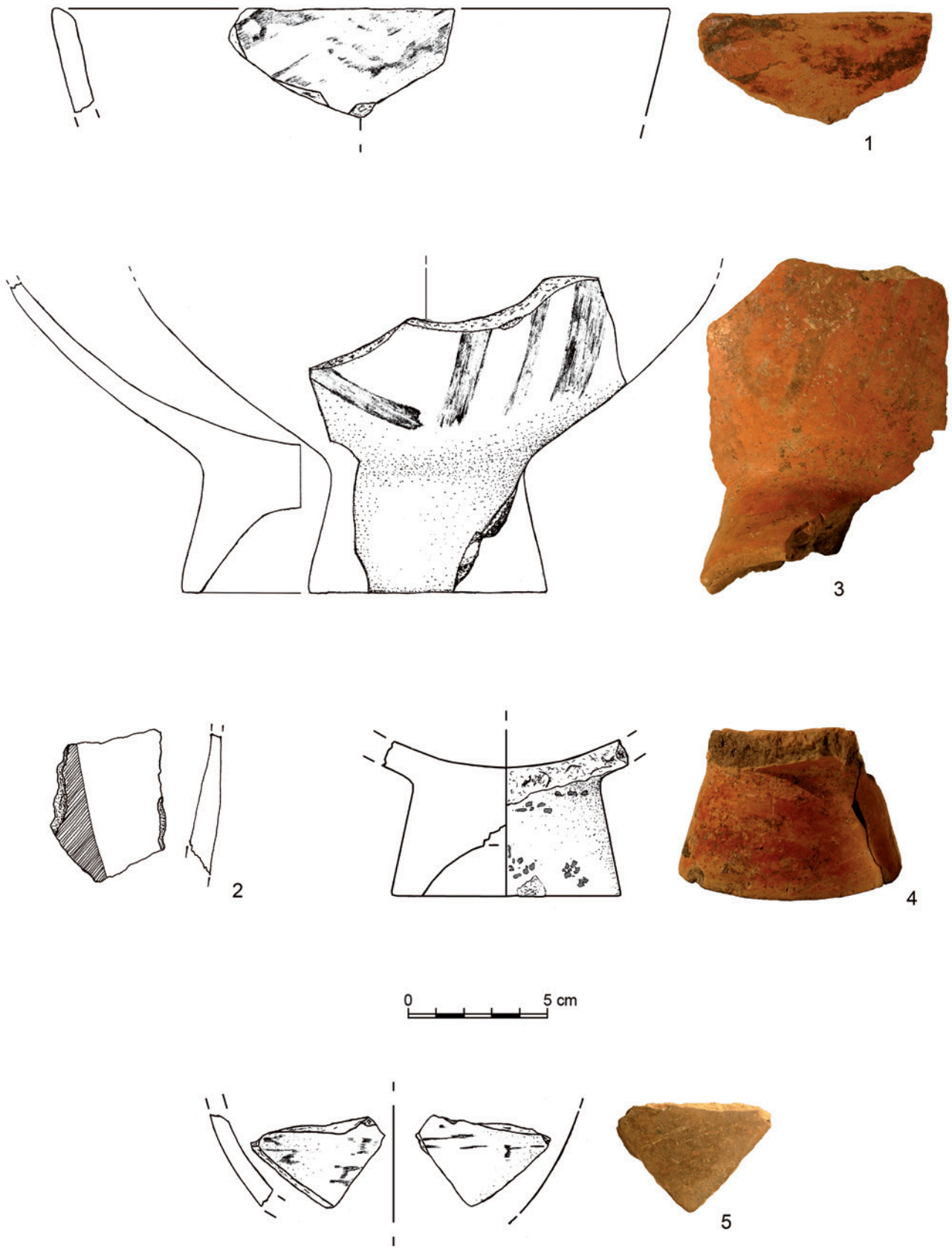


Fig. 130: Ovcharovo-Gorata. Painted sherds (after Krauss 2014, pl. 48).



Fig. 131: Ovcharovo-Gorata. Examples of tripod miniature tables (after Krauss 2014, fig. 80).



Fig. 132: Ovcharovo-Gorata. Types of decorations on tripod miniature tables (different scales) (after Krauss 2014, fig. 82).

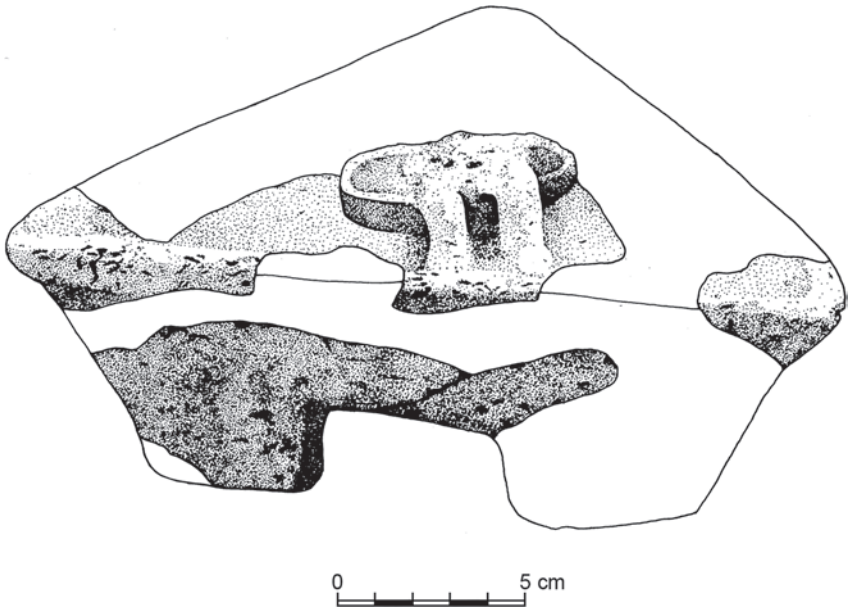


Fig. 133: Tripod miniature table from Late Neolithic Kachitsa with the lower part of a sitting figurine inside the bowl (after Krauss 2014, fig. 85).

(Figs. 138–139). Represented in the find inventory are two groups of small, chisel-like tools (Types A1–2), a very large, oversized and thick piece (Type D), and a group of smaller antler sleeve-hafted axe blades (Types B1–2), as well as four types of larger axe blades, each with different thickness and cross-section shapes (Types C1–4). It must be noted that some types are best explained as repurposed, formerly larger blades, and are thus a secondary product of the stone tool production.

In the Early Neolithic cultures of Greece, as well as in the Criş culture, some (to a certain extent) quite similar pieces could be accounted for, although differences in the overall picture of the axe industries do indeed exist. The perforated axes known from the Körös culture are not to be found in Ovcharovo-Gorata. Chipped flint axes are likewise missing from the find material. The antler sleeve- haft technique is, however, known; it can be traced to Anatolia, where a similar piece has been found in Ilıpınar. Large type D axe blades appear more frequently in Bulgaria, yet also occur in Turkish Thrace. Of particular interest is a series of pieces (roughly Types C3 and C4) that have solid parallels in the LBK and the Körös culture. Indeed, at the LBK find spots, only a selection of the types from Ovcharovo-Gorata appears. For example, the small axes and the corresponding antler sleeves are absent.

We also have a complete inventory of tools made from chipped stones from the old excavations at Ovcharovo-Gorata. The flint artefacts were processed by Nguyen Van Binh a short time after the conclusion of the excavations. In 1985, he submitted a dissertation with the title "Methodology for the Examination of the Prehistoric Flint Artefact Ensemble from the Late Pleistocene and Early Holocene on the Basis of Materials from North Bulgaria" to the Archaeological Institute of the Bulgarian Academy of Sciences.

Outstanding is the great variety of cores and blanks (Figs. 140–145). Structurally, the scraper and retouched flakes group dominates. Among the scrapers, the flake forms predominate (64%) (Figs. 146–153). The splinter form group is well-represented; burins, in contrast, are almost completely absent. The awl-like borers, most of which are atypically formed, are only weakly documented, as are the borers, the length and crosswise blunted tools, and serrated forms (5–7%) (Figs. 154–158). Also characteristic is the absence of the microlithic forms among the various types, with the exception of a few scrapers and retouched blades. Geometric microliths are completely absent. The existence of unretouched, semi-finished goods (lithic flakes and blades), as well as fragments of these goods, provides evidence of their deliberate employment in the production of tools. The technological-typological properties of the materials from Ovcharovo-Gorata have many parallels in the inventories of the Neolithic settlements of Usoe I and Podgoritsa.

7.5. Further Sites in the Ludgorie and the Catchment Area of the Golyama Kamchiya River

The region's earliest settlement was localised by Todorova east of Ovcharovo within the fields of Polyanitsa-Platoto

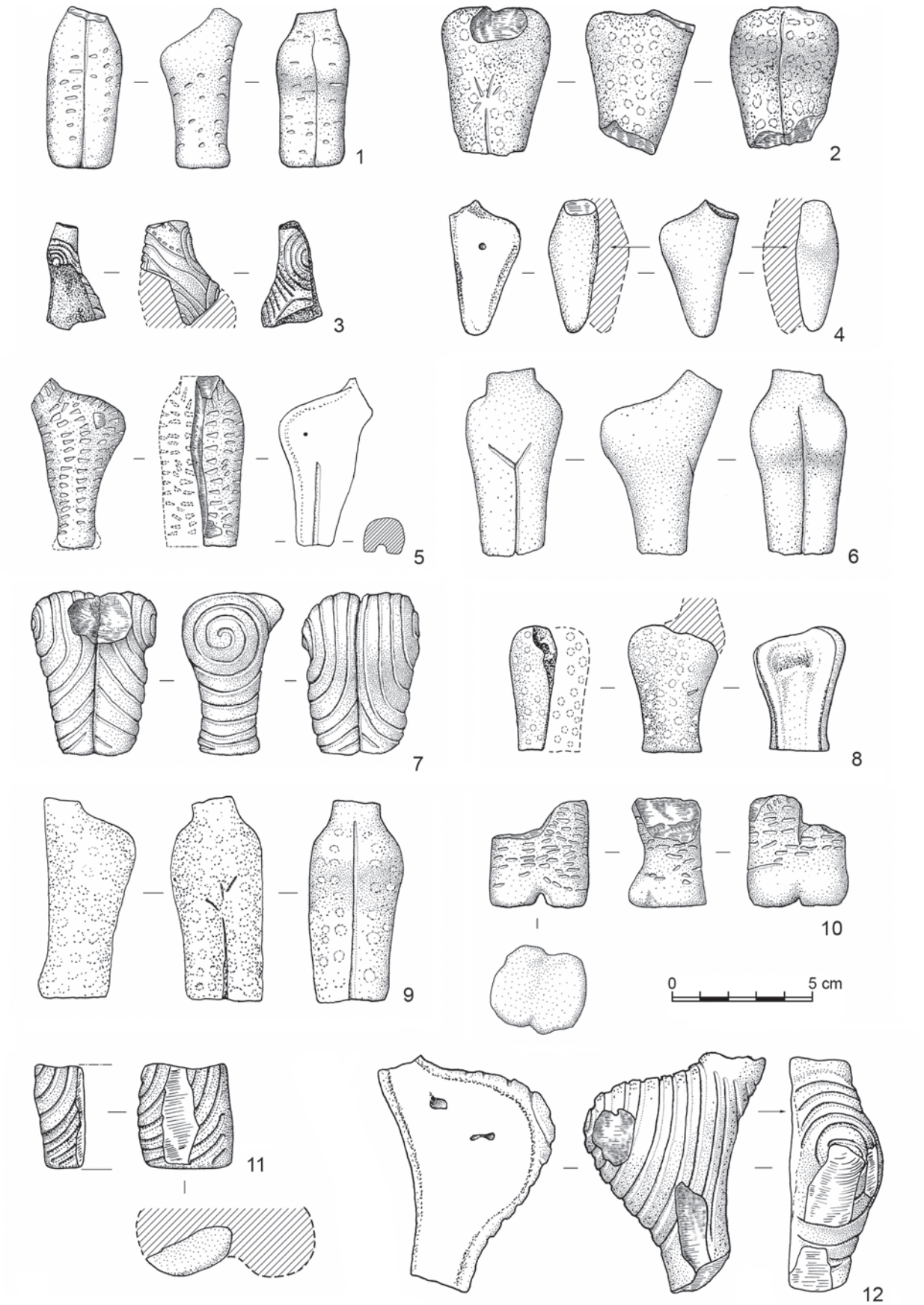


Fig. 134: Ovcharovo-Gorata. Selection of lower parts of anthropomorphic clay figurines (drawings: I. Vajsov) (after Krauss 2014, fig. 97).

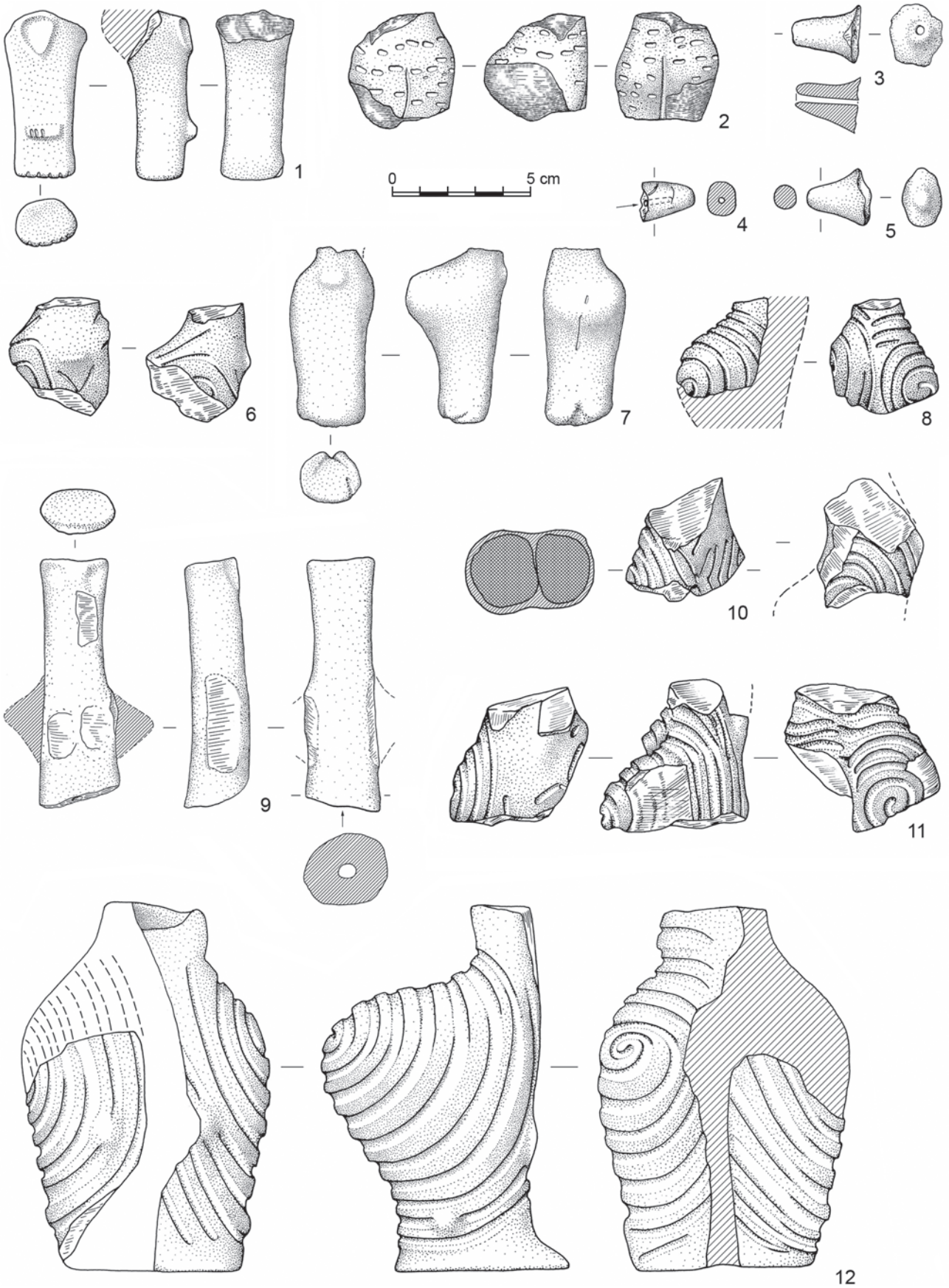


Fig. 135: Ovcharovo-Gorata. Selection of lower parts of anthropomorphic clay figurines and fragments of body parts (drawings: I. Vajsov) (after Krauss 2014, fig. 98).

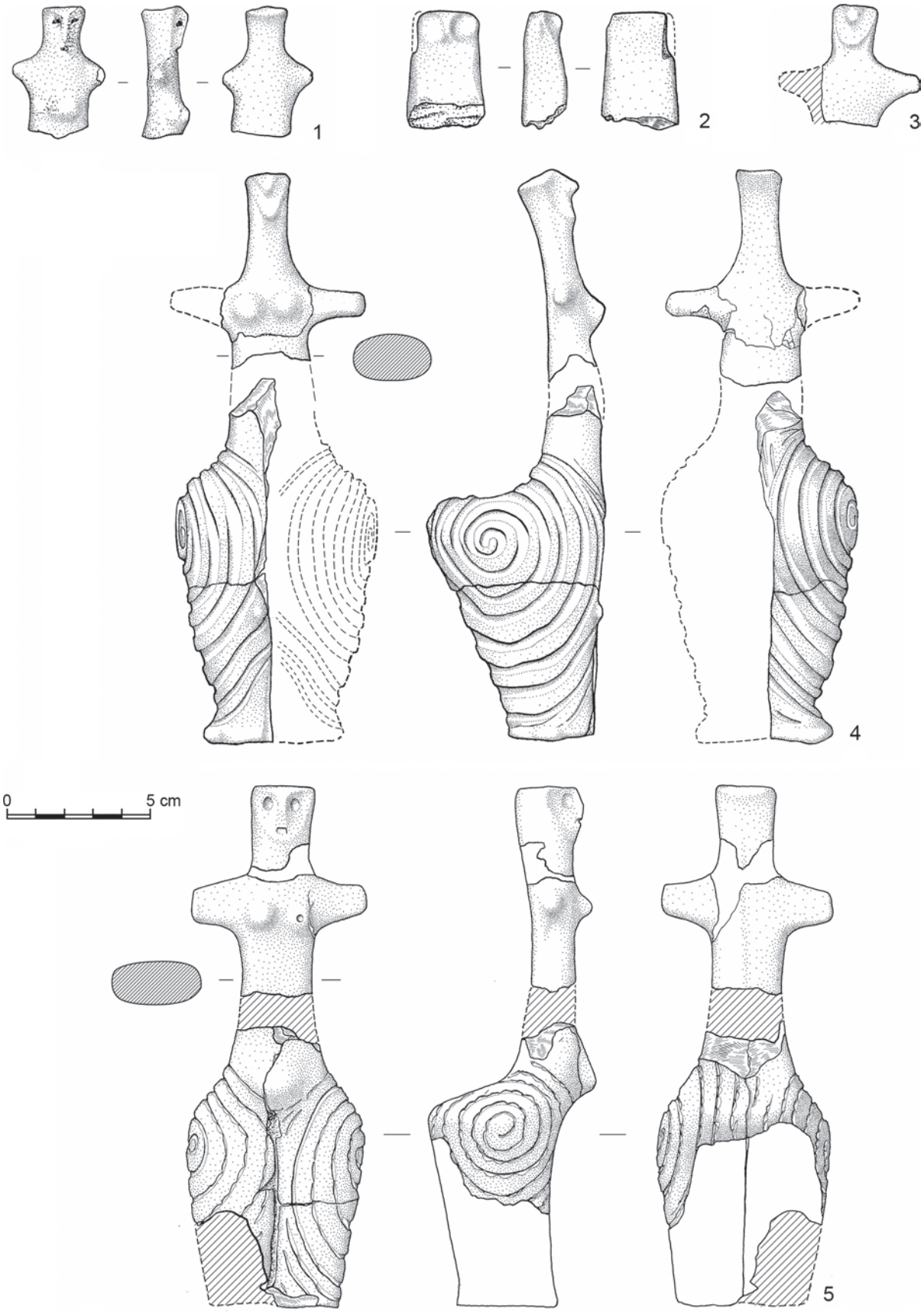


Fig. 136: Ovcharovo-Gorata. Selection of upper parts of anthropomorphic figurines and two idols composed of fragments (drawings: I. Vajsov) (after Krauss 2014, fig. 99).

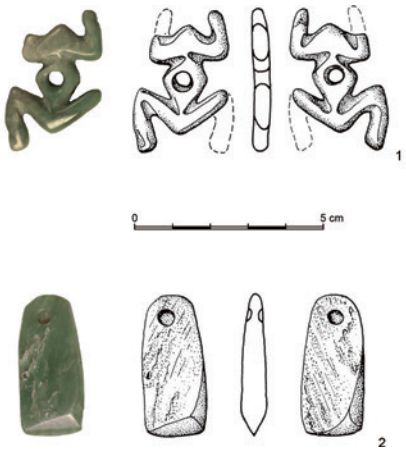


Fig. 137: Ovcharovo-Gorata. Anthropomorphic amulet and miniature axe of nephrite (after Krauss 2014, fig. 103).

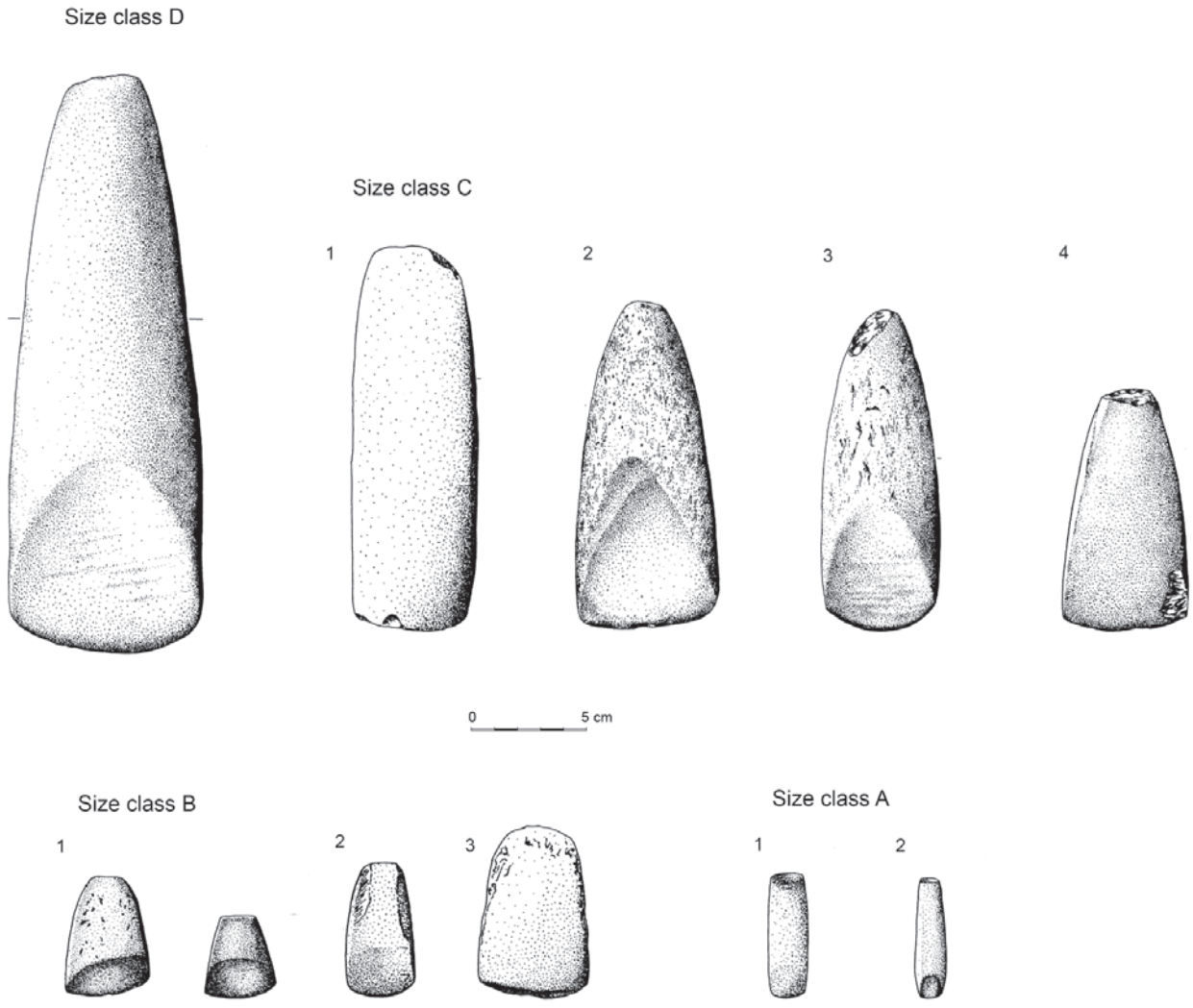


Fig. 138: Ovcharovo-Gorata. Size classes of polished stone axes (graphics: F. Klimscha) (after Krauss 2014, fig. 120).

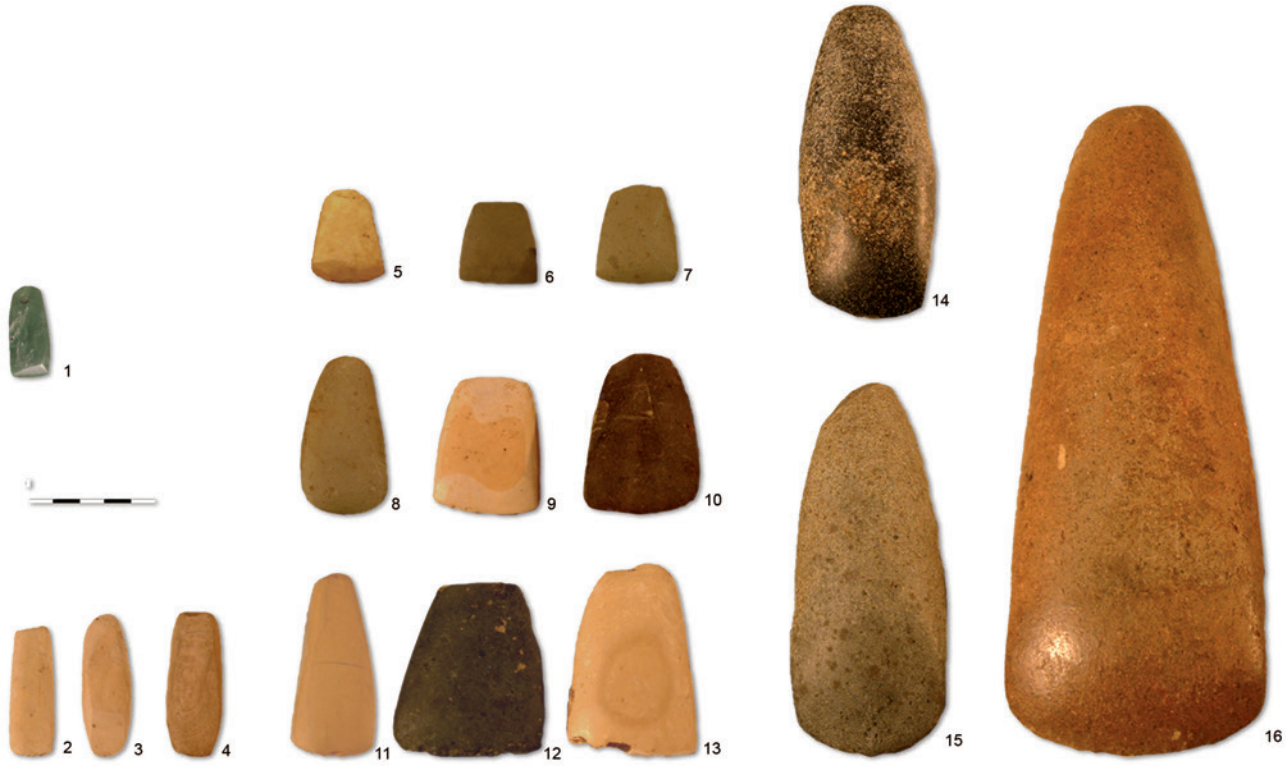


Fig. 139: Ovcharovo-Gorata. Examples of entirely preserved stone axes (after Krauss 2014, fig. 115).

(Todorova 1990. – Todorova, Vaysov 1993, 127–128. – Todorova 2003). Currently published from this settlement (identified in 1972) are seven vessels invariably cited as evidence of a 'monochrome' Neolithic in the region (Todorova 1990, fig. 2. – Todorova 2003, fig. 1). These consist of two half-spherical bowls on a massive foot adorned with notches and a further spherical bowl with a notched rim, together with two bowl-shaped pots with outcurved lips, a vessel with a narrow mouth and pierced lugs slightly underneath the belly, and an additional bowl with a straight wall which slightly projects. With the exception of the pots, all vessels are adorned with a red clay slip. The massive feet of the bowl forms may be deduced to be an archaism.

A selection of the pottery finds from Ovcharovo-Platoto was published together with the material from the excavation of the Chalcolithic tell of Ovcharovo (Todorova et al. 1983, pls. 1, 2A, 3, 5–6). The forms largely resemble the material from Ovcharovo-Gorata. Not only are the characteristic beaker forms B2a and B2b with strap handles and the handle-less beaker B1b with a massive foot present, but also the subtypes of the simple large pots T1 (cf. Chapter 7.4, Figs. 119–123). Finer pots with channels as represented by Group T2 also occur at Ovcharovo-Platoto. Only those types with a thin foot are present among the bowl forms, although these are present in almost every variant known from Ovcharovo-Gorata. These essentially consist of S-profiled bowls (S1b–c), spherical bowls (S2c), and bowls with straight walls (S3c–d). Only the carinated forms of the pots and bowls of Variant S4 are unattested, these admittedly also seldom occurring at Ovcharovo-Gorata. Equally absent are the jug-like vessels and characteristic lid forms adorned with impressions. Furthermore, the absence of high foot rims (which can be interpreted as indicating an earlier chronological position when considered in respect to the form trajectory in Thrace) is noticeable within the material from Ovcharovo-Platoto. If, indeed, the material from Ovcharovo-Platoto appears somewhat older than that of Ovcharovo-Gorata on the strength of these observations, then this should not be overstated. First and foremost, however, similarities between both find inventories prevail, this suggesting the coeval occupation of both settlements.

Only nine vessels from the field of Ovcharovo-Zemnika have been published as drawings (Todorova et al. 1983, pl. 2b). While, on the one hand, these are forms which are in the tradition of Ovcharovo-Gorata, on the other hand, they can be clearly distinguished from it with the introduction of new types. The unifying elements are the lid forms Dc



Fig 140: Ovcharovo-Gorata. Pre-cores (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 129).

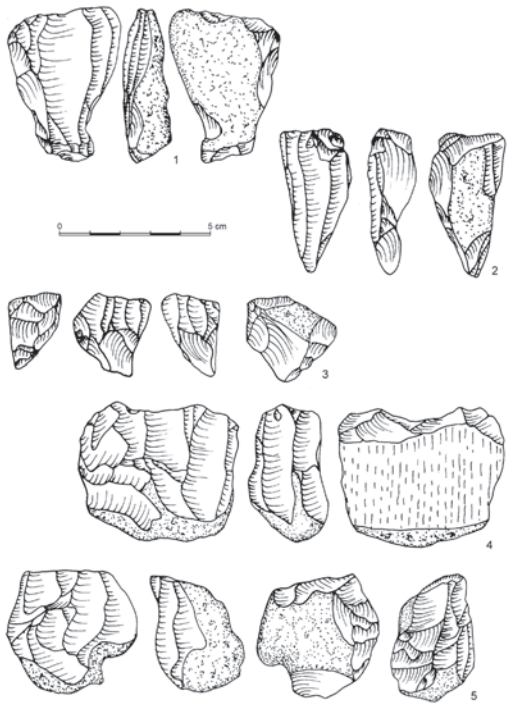


Fig. 141: Ovcharovo-Gorata. Cores (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 130).



Fig. 142: Ovcharovo-Gorata. Pre-cores (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 128).

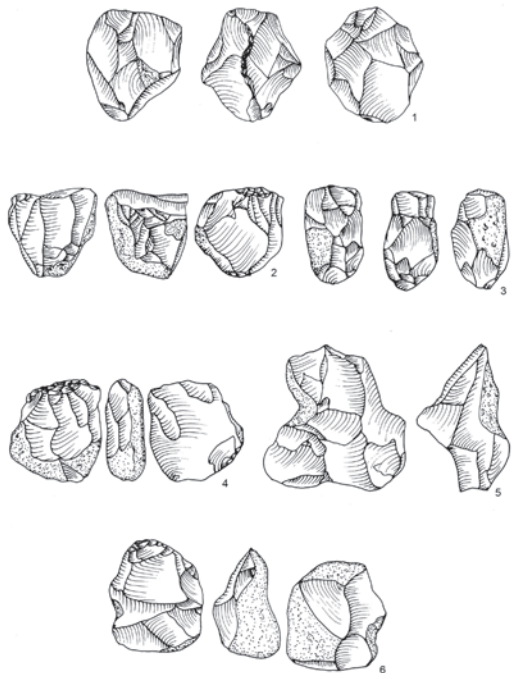


Fig. 143: Ovcharovo-Gorata. Cores and splintered cores (without scale; drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 132).

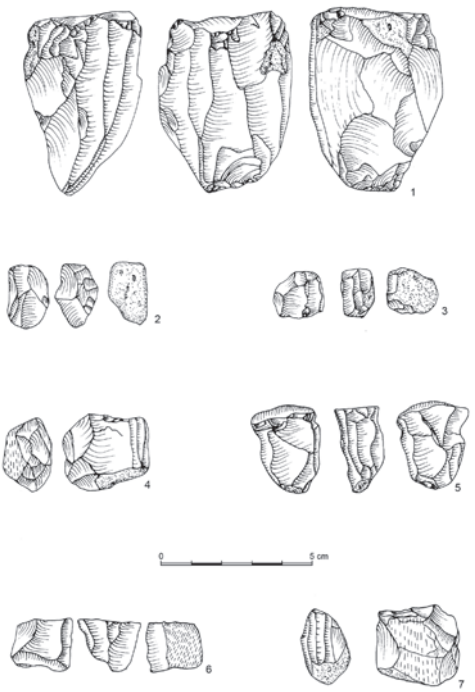


Fig. 144: Ovcharovo-Gorata. Cores from (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 135).

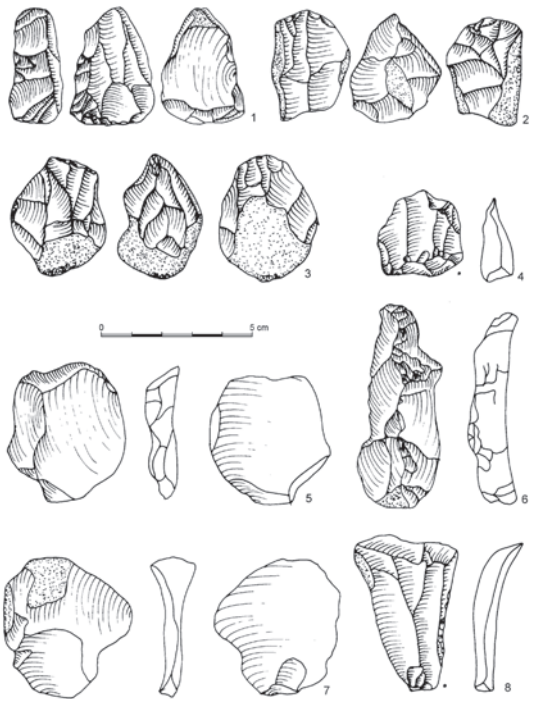


Fig. 145: Ovcharovo-Gorata. Cores and tools on flakes (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 138).

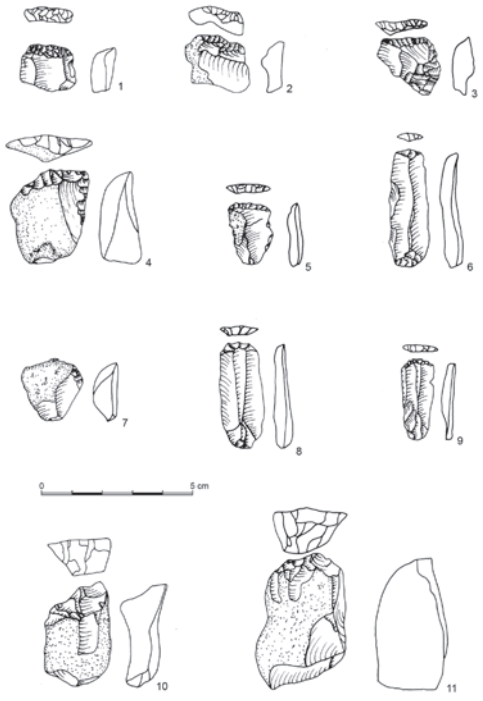


Fig. 146: Ovcharovo-Gorata. Scrapers (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 152).

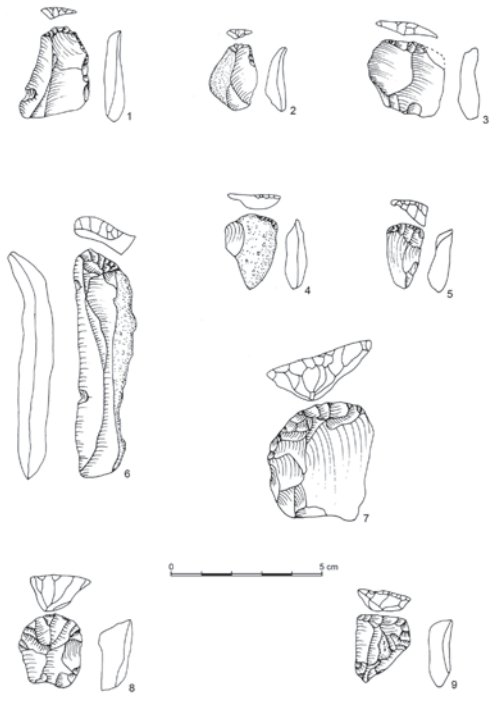


Fig. 147: Ovcharovo-Gorata. Scrapers (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 153).

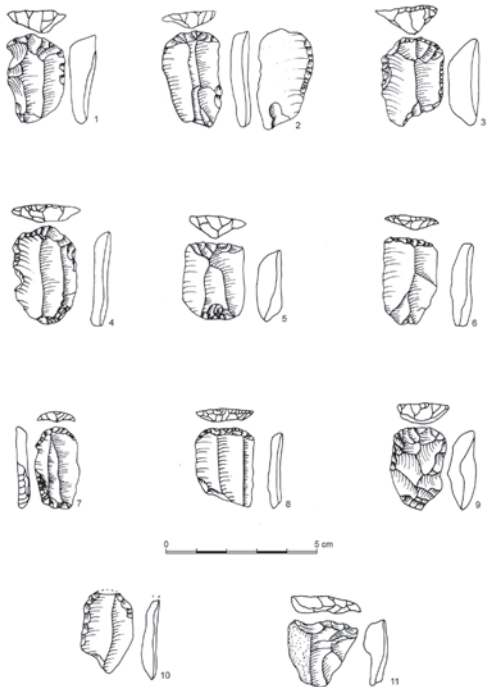


Fig. 148: Ovcharovo-Gorata. Unifacial scrapers (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 154).



Fig. 149: Ovcharovo-Gorata. Unifacial scrapers (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 155).

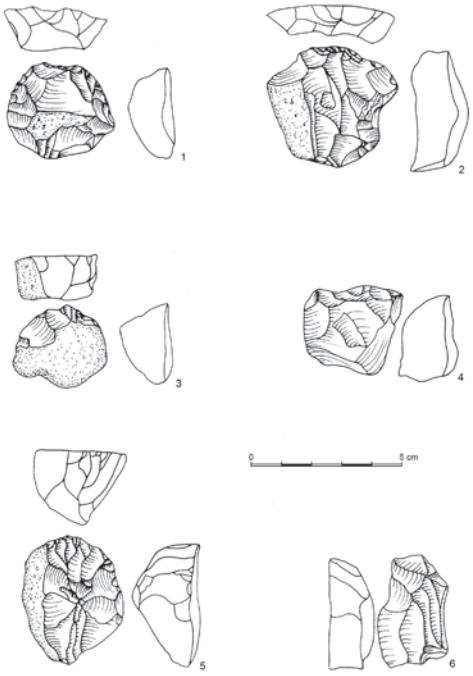


Fig. 150: Ovcharovo-Gorata. Round scrapers (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 156).

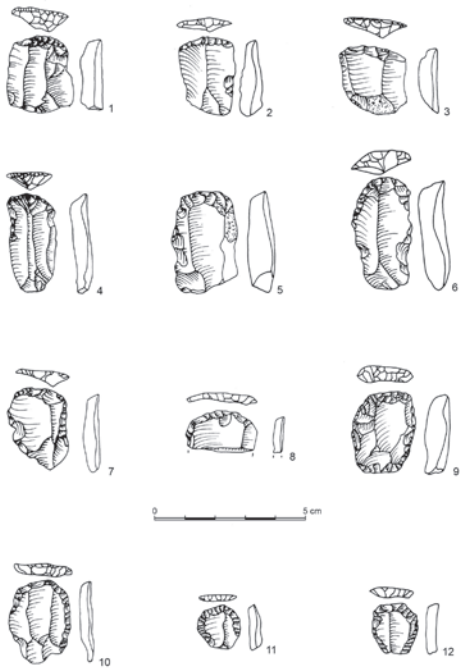


Fig. 151: Ovcharovo-Gorata. Scrapers (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 159).

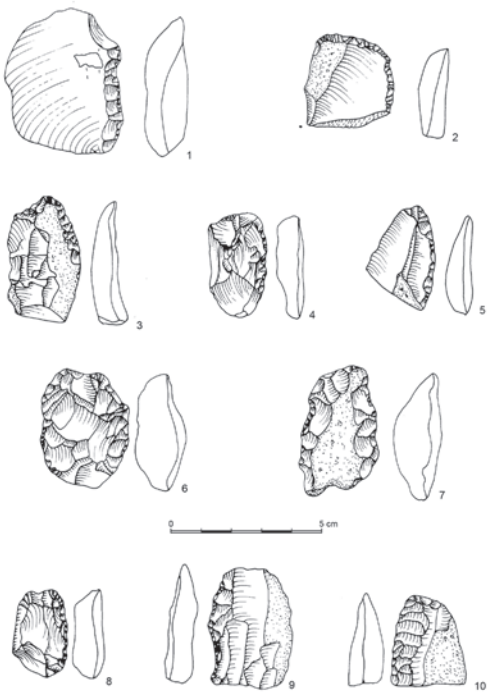


Fig. 152: Ovcharovo-Gorata. Scrapers (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 160).



Fig. 153: Ovcharovo-Gorata. Scrapers and backed blades (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 161).

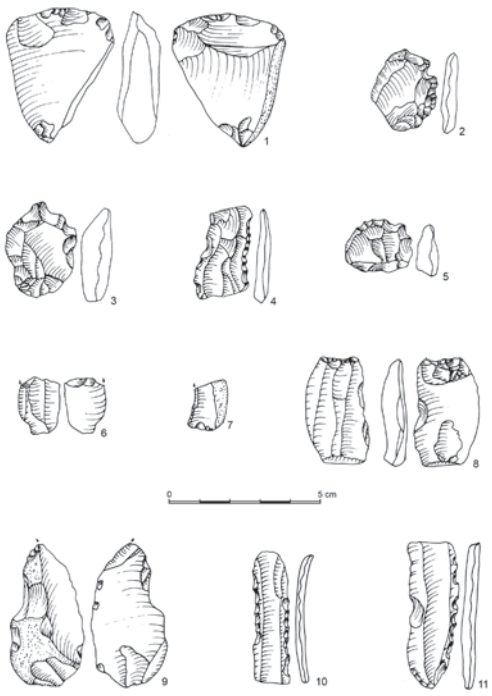


Fig. 154: Ovcharovo-Gorata. Silex tools (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 162).

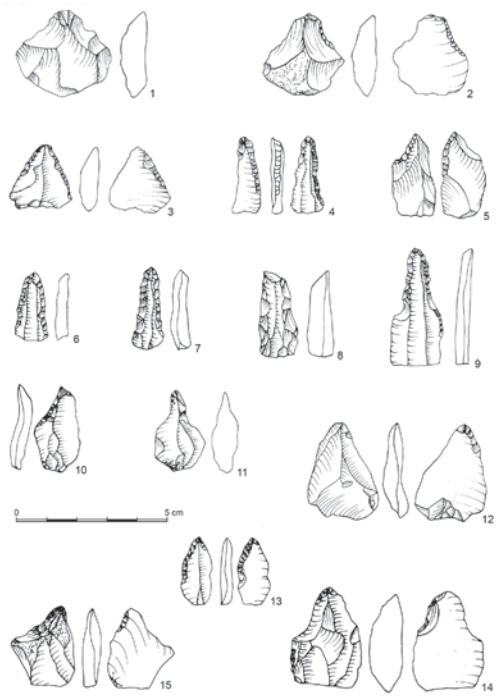


Fig. 155: Ovcharovo-Gorata. Points and borers (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 163).

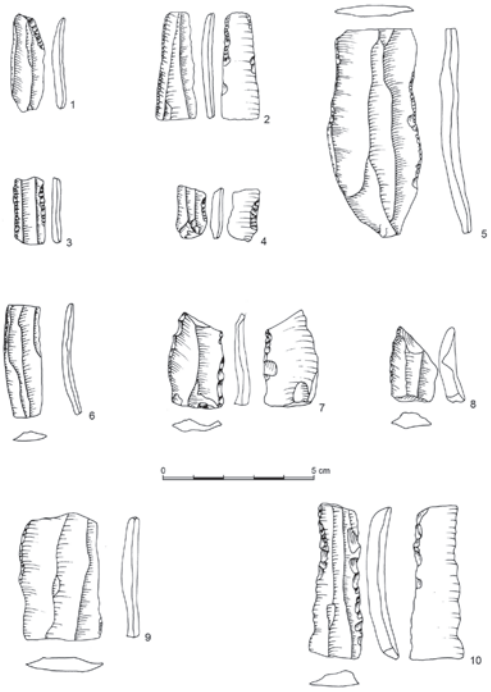


Fig. 156: Ovcharovo-Gorata. Retouched blades (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 171).

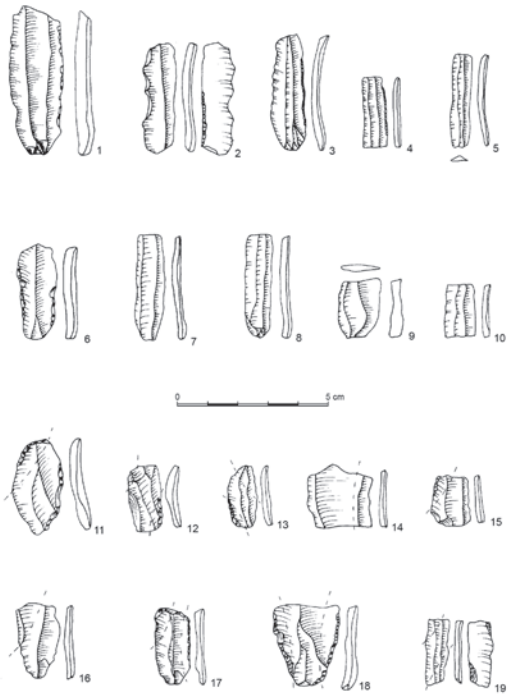


Fig. 157: Ovcharovo-Gorata. Blades (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 173).

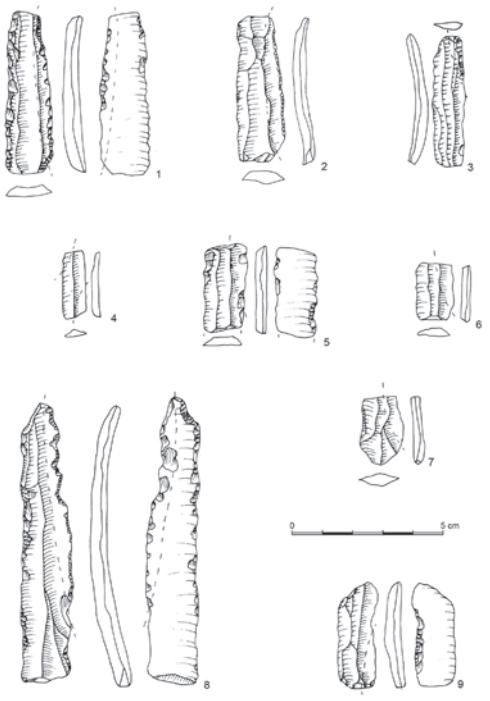


Fig. 158: Ovcharovo-Gorata. Blades with sickle gloss (drawings: N. Van Binh, adaptions: P. Nedelcheva) (after Krauss 2014, fig. 174).

(which continue the characteristic incised decoration) and a vessel with a narrow mouth and pierced lugs beneath the belly reminiscent of the jug-like forms from Ovcharovo-Gorata. A small channel-adorned barrel evidently bearing a very deep handle application is new, and may be understood as a further evolution of the beakers with strap handles without foot structures (B2b) on grounds of this peculiarity. Also only distantly related to the forms from Ovcharovo-Gorata is a large, half-round foot bowl with a channel decorated wall (Todorova et al. 1983, pls. 2b, 19). In order to understand the development of forms directly following Ovcharovo-Gorata, a larger corpus of material would be necessary.

Todorova also juxtaposes the finds from Zelena Morava with those from Ovcharovo-Gorata in the context of a form analysis (Todorova, Vaysov 1993, fig. 116/4–5). However, this ascription can be neither confirmed nor dismissed on the basis of a mere two sherds.

Only a slim selection of the finds from the excavations at Drinovo have also been published (Todorova, Vaysov 1993, fig. 117). Nevertheless, a larger collection of ceramic vessels is displayed in the Targovishte Museum, with these offering a good impression of the Middle Neolithic of the region. Here, the beaker forms had developed into high, thin vessels with a conically tapering wall. Retained in respect to

earlier exemplars was the strap handle on the lower half of the vessel. Among the bowl forms, more strongly profiled types such as carinated bowls now predominate, with these already intimating future developments during the Late Neolithic. New, in addition, are large, channelled cups with slightly funnel-shaped flared rims and a wide strap handle. Individual, very broad strap handles can now also be observed on the jug-like vessels. These forms with a widely protruding, often carinated wall and a narrow, cylindrical neck, are only distantly reminiscent of the narrow-mouthed forms from Ovcharovo-Gorata. Still commonplace are the basic decorative techniques of the Early Neolithic, such as incision, impression, and channel adornment, although the channels are now sunk deeper into the vessel surface and form wider gutters.

7.6. The Lower Course of the Kamchiya River and the Dobrudja

The lower course of the Kamchiya River entering the Black Sea's littoral displays an independent expression of Early Neolithic ceramics with a clear influence from the Hamangia culture located in the Dobrudja. In terms of environment, the Dobrudja is today a region with an arid climate providing no perennial river courses, while the adjoining region to the south is significantly better watered by the courses of the Provadiyska Reka and the Kamchiya. Both landscapes are open to the sea to the east, although a much greater extension of the inhabitable land during the Neolithic era is to be presumed on grounds of the constantly rising sea level since the end of the Pleistocene. Two Early Neolithic pottery complexes from Golyamo Delchevo and Dalgopol-Balkuzu may be discussed here. The early phase of the Hamangia culture (here serving as an interesting comparison to the Early Neolithic in the region's interior) is attested at the settlements of Durankulak-Nivata, Medgidia-Cocoaşă, and Cernavodă.

Beneath the deposits of the Chalcolithic tell of Golyamo Delchevo, an Early Neolithic settlement was unearthed; this represents the earliest levels, Phase I (Todorova et al. 1975, 15–20), ascribed by Todorova to the so-called Tsonevo culture (Todorova, Vaysov 1993, 142–147). Present in the find material are the bowl types S2c and S3c found in the type spectrum from Ovcharovo-Gorata (cf. Chapter 7.4, Figs. 119–123), although a slight outward turn of the lips reminiscent of the profiling of the bowls of Type S1b may be noted at Golyamo Delchevo. The large vessels with a narrowed mouth are certainly already very much different to those from Ovcharovo-Gorata inasmuch as the mouth projects out in a funnel shape, or the forms are wider. A similarity might be noted in a cup with lugs (Todorova et al. 1975, pl. 4.1) which finds a good counterpart in a vessel from Ovcharovo-Gorata, and in the many tall cylindrical pot stands. Lids do not yet occur within the material from Golyamo Delchevo I which might hint at an earlier chronological position. In light of these observations, the exact relationship with Ovcharovo-Gorata can accordingly only be roughly estimated. It is only with the arrival of Golyamo Delchevo II that multiple lid forms appear which admittedly already belong to the Early Chalcolithic Sava culture with which the actual tell formation begins at this site. Characteristic of this period are cylindrical forms, some of which are stackable within one another and possess a deeply excised decoration (Todorova et al. 1975, pls. 9–16). Whether this pertains to a later settlement in Ovcharovo-Gorata to be paralleled with Karanovo III, as Lichardus and Parzinger assume (cf. Lichardus, Iliev, Christov 2002, 360. – Parzinger 2005, 54), must therefore remain uncertain.

Further material from the Tsonevo culture has emerged from Dalgopol-Balkuzu (Todorova, Vaysov 1993, fig. 124). The selected vessel fragments published may also be neatly associated with Ovcharovo-Gorata. Bowl forms with half-rounded and straight walls of the type-groups S2 and S3 and pot forms on simple, flattened stands are attested. The surface of the vessels displays impressed or incised decoration and also the plastic application of small knobs or nipples. The characteristic channelling of fine wares is also attested.

Particularly striking within the material from Ovcharovo-Gorata are the profiled lid forms Dc and Dd and some of the vessels with cylindrical and conically elongated necks of the type-groups K1 and K2a, which are reminiscent of the Hamangia culture not only in their form but also (and most remarkably) in their highly specific impressed decoration. Despite this, connecting Hamangia with the developed Early Neolithic is no simple task, inasmuch as a general consensus exists as to the Late Neolithic, and thereby much later, chronological ascription of the Hamangia culture (Berciu 1966, 109–119. – Todorova, Vaysov 1993, 146–147. – Haşotti 1997, 19–23). The similarities to the Early Neolithic material from Ovcharovo-Gorata described, do, nevertheless, prompt the closer future study of this cultural grouping and, particularly, its early phase.

Among the fine ware of the settlement of Medgidia-Cocoaşă may be found a few pricked decorated vessel fragments which are directly comparable with Ovcharovo-Gorata (Haşotti 1997, fig. 30/3, 7–10). A wall fragment with three bands of rounded pricks arranged parallel to one another provides a good item for comparison (Haşotti 1997, fig. 30/3). Excellent parallels are also presented

by patterns composed of sharp, triangular pricks from Medgidia-Cocoaşă (Haşotti 1997, fig. 30/9–11). The very fine channelled decoration typical of some Hamangia pots, especially on the upper part of two-part bowls and pot forms (Haşotti 1997, fig. 29), is admittedly mostly found among beaker forms in Ovcharovo-Gorata, although individual bowls also occasionally display this specific decorative feature. Similarities among the coarse wares may also be demonstrated, as in the case of pot fragments with angular pricks below the lips of the rim (Haşotti 1997, fig. 31/2–3), or the very specific zigzag pattern (Haşotti 1997, figs. 31/6; 32/7) which very similarly occur at Ovcharovo-Gorata.

Even clearer parallels may be elicited from material from Durankulak-Nivata. A vessel lid with an offset brim (Dimov 1982, fig. 9e) not only corresponds to Type Dd from Ovcharovo-Gorata in form, but also in the manner of its decoration. The bands formed of sharp-edged pricks on bowls from Ovcharovo-Gorata may be recognised in Durankulak-Nivata as bands filled with channels (Dimov 1982, fig. 10/г, з, и). Despite this, the profiling of the bowls with their raised rims clearly differs from that at Ovcharovo-Gorata. The simple pot forms (Dimov 1982, fig. 11/в–ж) may nevertheless be juxtaposed without difficulty.

In light of the numerous similarities between the material from Ovcharovo-Gorata and the earliest Hamangia pottery, chronological proximity must be considered for both occurrences. That such a corresponding form spectrum might have developed entirely independently after centuries hardly seems possible. Therefore, it seems more likely that both cultural groups chronologically connect. Consequently, this would mean an earlier onset of the Hamangia culture, and thereby also a markedly earlier neolithisation of the Dobrudja, which possibly already began in the mid-6th millennium. Unfortunately, ^{14}C dates for the advent of the Hamangia culture are currently completely lacking.

The geographically isolated Early Neolithic settlement of Malak Preslavets is the only site lying directly on the steep southern bank of the Danube. Among the find material, some ceramic fragments painted with dark paint finding no correlate in the vicinity were published (Panayotov, Gatsov, Popova 1992). In terms of environment, the site lies on the periphery of the Dudeşti culture spread within Muntenia, which is nevertheless characterised by a very complex incised and plissé channelled pattern. The technology of the vessel painting places the situation at Malak Preslavets in an Early Neolithic context, although the nearest comparable finds originate from north-western Bulgaria or Thrace, such as at Tlachene, Chavdar, Rakitovo, or Kazanlak (cf. Nikolov 2002a). Lichardus and colleagues parallelise the finds with Karanovo I (Lichardus, Iliev, Christov 2002, 360), although without giving reasons for this. However, as the material from Malak Preslavets seems younger than the finds from Dzhulyunitsa I, this ascription can nevertheless be confirmed.

7.7. The Catchment Area of the Osam River

In comparison to the Early Neolithic sites in north-eastern and north-western Bulgaria, the region of central northern Bulgaria is astoundingly devoid of finds. This reality is only masked in synthetic studies by sheer circumstance; the prehistory of this huge area is invariably appended to either the north-east or the north-west of this broader area (cf. Nikolov B. 1992. – Todorova, Vaysov 1993, 127–142). In fact, however, the central Bulgarian lowlands with the catchment area of the Osam River and the Vit River forms a natural unit which, due to its flat relief only rising gently towards the main Balkan ridge, can be easily distinguished from the hilly Ludgorie in the east, and the narrow foreland of the western Balkans dissected by numerous river courses. Among the earliest discovered prehistoric sites in Bulgaria was Devetaki Cave in a rocky massif directly above the Osam (cf. Mikov 1933, 29). During the 1950s, Vassil Mikov and Nikolay Dzhambazov undertook systematic excavations, resumed thereafter in the 1990s by Ventsislav Gergov (Mikov, Dzhambazov 1960. – Nikolov 2002a, 86–87). Mikov and Dzhambazov published various Early Neolithic finds from the cave, still termed Middle Neolithic by them.[25] Seventy-four further fragments of a rough ware with characteristic incised and pricked adornments, and also entire pot forms on highly raised foot rims and narrow-necked vessels lend themselves to comparisons with the material from Ovcharovo-Gorata (cf. Mikov, Dzhambazov 1960, figs. 24/c–d; 26–27; 30). Some white-painted fragments and a number of bossed fragments can be situated among the earlier material from Dzhulyunitsa II and Koprivets, and thus belong to the period prior to Ovcharovo-Gorata (cf. Mikov, Dzhambazov 1960, figs. 24/a; 25; 29/c; 31 and pl. I). Other elements such as a five-limbed, raised, cross-shaped base or the numerous pierced knobs could belong to either

25. Admittedly, no earlier finds from the Neolithic were known from South-eastern Europe at the time. The designation of this occurrence as Middle Neolithic was born of the hypothesis that such fine ceramics could hardly have emerged from nowhere and have been disseminated throughout the entire central and eastern Balkan region. The pre-Karanovo-I-period find horizon was then still entirely unknown (cf. Mikov, Dzhambazov 1960, 42–43).

the cave's earlier or, indeed, later Early Neolithic settlement (cf. Mikov, Dzhambazov 1960, figs. 28; 29/a–b). From the typological comparison of the finds from Devetaki alone, the cave appears to have been settled from Karanovo I until the era of Ovcharovo-Gorata. Moreover, further Early Neolithic finds are only known from the vicinity of the nearby locality of Krushuna (Stoyanov 1997). A fragment with pierced knobs and a further example from a vessel with a foot rim generally afford a synchronisation with the Early Neolithic (Stoyanov 1997, 14 and fig. 1), albeit without being able to narrow down the chronology of the settlement.

7.8. North-western Bulgaria

That the state of research of a particular region might be heavily influenced by the individual personality of a researcher is demonstrated by the high density of sites discovered in north-western Bulgaria, practically all of these having been identified by means of the intensive field activities of Bogdan Nikolov. His periodisation of the Neolithic, secured by means of numerous stratigraphies (Nikolov B. 1992), can, in turn, also be adopted as a yardstick for neighbouring regions.

Based upon the settlement stratigraphy of Gradeshnitsa-Malo Pole, Nikolov assumes a three-phase trajectory for the Early Neolithic which he further divides into multiple stages. According to him, the earliest stages of the first phase are present only in the finds from Devetaki Cave and in material from the environs of the town of Byala preserved in the Museum at Ruse.[26] The later stages of the first phase of the Early Neolithic are represented by the finds of Level A of Gradeshnitsa-Malo Pole characterised by vessels painted white or black (Nikolov B. 1974, figs. 1–2. – Todorova, Vaysov 1993, fig. 95/1–5). The greater part of the vessels, nevertheless, remain unpainted (Nikolov B. 1992, 12). Comprehensive collections of finds are attested for the contemporaneous sites at Banitsa, Gorna Beshovitsa, Ohoden, Rebarkovo, and Zakonitsa. Despite the relatively sizeable distance, the find material and (most prominently) the different decorative techniques of these sites lend themselves to comparisons with Ovcharovo-Gorata. Some plastically-formed blossoms and bow motifs on the coarse ware from Beshovitsa and Ohoden find their best counterparts there (cf. Nikolov B. 1992, figs. 2–3). An applied spiral motif is known from Rebarkovo (Nikolov B. 1992, fig. 4, second row from top, middle) which might be likened to comparable motifs from Ovcharovo-Gorata. More generally, the black painting, which is best known from Banitsa (cf. Nikolov B. 1992, fig. 1), may be considered a unifying feature. The channelling of fine wares is, nevertheless, not very common in north-western Bulgaria in this period, which permits a clear demarcation of the eastern Balkan Neolithic, where this manner of decoration is widespread and appears in large proportions within the vessel spectrum.

In 2002, Georgi Ganetsovski resumed excavations at Ohoden in the field of Valoga, and published further Early Neolithic finds which he places prior to Phase A at Gradeshnitsa-Malo Pole and parallelises them with Proto-Starčevo (Ganetsovski 2007. – Ganetsovski 2008). These consisted of red- or red-brown-slipped vessels which are unpainted and solely on the strength of this absence of painting are ascribed to the so-called 'monochrome ceramic' horizon (Dzhulyunitsa I). Some of the forms published such as the carinated bowls and the very high vessel feet accord much better with the developed Early Neolithic such as the phase of Karanovo II, and, ultimately, also with Ovcharovo-Gorata (Ganetsovski 2007, pls. 6/3; 11). Some of the fragments with cordons probably also belong to this chronological context (Ganetsovski 2007, pls. 15–16). Only later was the pit with the three deer antlers discovered, which we can now determine as Mesolithic on the basis of the ^{14}C data (see Chapter 2.4); yet, this find has nothing to do with the Mesolithic structures.

The chronologically subsequent development during the second phase of the Early Neolithic is attested in Level B of Gradeshnitsa-Malo Pole (cf. Nikolov B. 1974, figs. 6–7. – Todorova, Vaysov 1993, fig. 97). With this, polychrome vessel painting begins with the colours white, black, and red on a background somewhat lighter than that of the preceding first phase. This generally comprises more strongly profiled forms, some of these on thin, high feet with embouched bodies, and vessels with long, elongated, cylindrical necks. Possessing a total of four levels, the settlement of Tlachene belongs entirely to this phase (Nikolov B. 1992, 13). Within the ceramic inventory, the survival of the coarse wares decorated with incisions and impressions is demonstrable. Despite this, the more marked profiling of the vessels can be noted as the proportion of carinated and S-profiled forms clearly increases (Nikolov B. 1992, fig. 6). Among the jug-like vessels, the pierced lugs now lie somewhat above the widest extent of the vessel's belly and the finger-impressed barbotine may be noted with greater frequency. In contrast to the previously common simple unstructured incisions, the development of a structured incised decoration also begins in this

26. This probably means the finds from Koprivets, which were only discovered in 1990.

phase (Nikolov B. 1992, 13), which would come to be the dominant decorative form in the Late Neolithic.

The final, third phase of the Early Neolithic is presently only attested within Level C of Gradeshnitsa-Malo Pole (Nikolov B. 1992, 14–15). The development of forms may be inferred from the preceding second phase, demonstrating all but no change. Nevertheless, the carinated forms now predominate among the coarse wares (Nikolov B. 1992, 15). Among the decorative modes of the coarse ware, the finger-impressed barbotine plays a greater role (cf. Nikolov B. 1974, fig. 12). The vessel painting on fine ware continues to be polychrome, although the entire vessel body is frequently coated with a single colour, with the painting realised on top of this (cf. Nikolov B. 1974, figs. 14–15). Complex meander bends nested within each another and spirals appear as motifs.

The subsequent development during the Middle Neolithic is attested in the neighbouring plain of Gradeshnitsa-Lukanovo Darvo. The stratigraphic sequence is certain in this case as the earliest level of Lukanovo Darvo on the edge of the settlement overlays the latest level of Malo Pole (Nikolov B. 1992, 17). Characteristic forms of the early Middle Neolithic are carinated bowls and bowls with pronounced, inverted rims and high, also lightly carinated pots with narrowing necks (Nikolov B. 1974, figs. 19, 21–23. – Nikolov B. 1992, figs. 8–9). The painting of vessels is no longer attested and an extensive, ornamental incised decoration assumes its place (Nikolov B. 1992, fig. 10). The motifs are still reminiscent of the spiraloid painted pattern from the close of the Early Neolithic, but are supplemented by stepped meander and checkerboard motifs (otherwise exclusively attested on the miniature tables during the Early Neolithic period). Moreover, large tap-like handles with rounded cross-sections now appear for the first time (Nikolov B. 1992, fig. 8, above left), with these demonstrating a connection with Karanovo II/III and III in Thrace. Also belonging to this chronological horizon is a bowl on four long legs (Nikolov B. 1992, fig. 9, second row from below, right). Nikolov ascribes a further site at Komarevo to this initial phase of the Middle Neolithic. There, a twin vessel composed of two carinated pots affixed together appears as a new form (Nikolov B. 1992, fig. 11, below left).

For the later phase of the Middle Neolithic, Nikolov presented material from the sites of Altimir, Devene, and Byala Slatina, which, nevertheless, provides only a few complete forms (Nikolov B. 1992, 18 and figs. 12–14). These largely pertain to carinated forms decorated with incisions. It is in the developed Middle Neolithic, i.e. in the period of Karanovo III, that channelled pottery might first be expected in north-western Bulgaria. This decorative technology is even then still rare, and of a fundamentally different type, inasmuch as it is executed in a greater width than is known from the Early Neolithic of the eastern Balkans (cf. Nikolov B. 1992, fig. 14, below right).

7.9. Muntenia

Largely lacking from Greater Wallachia are finds from the onset of the Early Neolithic which would reflect those from Koprivets and Dzhulyunitsa I to III or the white-painted phase south of the Danube. It is only from one site near Dulceana in the Județ Teleorman that a few fragments painted white or black are assigned to the Starčevo III Phase by Eugen Comșa (Comșa 1995). Beyond these fragments, no material comparable to that of Ovcharovo-Gorata is known from Muntenia. While this absence of finds is certainly interesting, it may well be explained by the sedimentation of the relatively flat regions from the discharge of the Danube's northern tributaries.

A small but very well-studied selection of Early Neolithic finds originates from the site of Măgura Buduiasca (Jud. Teleorman) (Thissen 2012). Occupation there begins roughly coeval to the horizon of Dzhulyunitsa II. From 2505 ceramic fragments studied, 79 of them (or 3.15%) were painted. This painting always occurred upon a red-slipped surface created by means of the oxidised burning of a micaceous red ochre pigment (Thissen 2012, 12–13). The later Neolithic material may be attributed to the Dudești and Vădastra cultures. Remarkable are various fragments of painted ceramics with a darker colour on a red background which find their best counterparts in material from Malak Preslavets on the southern bank of the Danube.

Numerous sites are thereafter identifiable for the chronological horizon of the Dudești culture. The fundamental division of this occurrence into the phases of Malu Roșu, Fundeni, and Cernica is derived from Comșa (Comșa 1971. – Comșa 1974, 10). The entire trajectory of the cultural group was considered by him to be parallel to Karanovo III. At the eponymous site of Dudești, two levels could be evidenced, one overlying the other (Comșa's phases of Malu Roșu and Fundeni), the earlier of which Parzinger parallelised with the developed Karanovo II, the Fundeni Phase thereafter thus serving as the first reflection of Karanovo III. This corresponds to the synchronisation of Lichardus which connects Malu Roșu with Karanovo II/III, Fundeni with Karanovo IIIa, and Cernica with Karanovo IIIb respectively (Lichardus, Iliev, Christov 2002, tab. 3). Most decisive for him are the similarities between the material from Drăghiceanu and the pottery from Drama-Gerena B which he, in turn, parallelises with Karanovo IIIb. Nevertheless,

the question remains as to when the older material from Dudeşti (especially the Malu Roşu Phase) might begin. Already in the initial publication of Drăghiceanu, Alexandru Păunescu discusses two stratigraphically superimposed levels, the find material of which he nevertheless presented together (Păunescu 1964). Notable within the ceramic material are a sherd decorated with nipples (Păunescu 1964, fig. 3/13), and also impressed and incised pots with notched rims (Păunescu 1964, figs. 2/2, 9; 3/1–3, 5) which might just as well be associated with the Early Neolithic south of the Danube. Seemingly foreign from a southern perspective are the complex pattern of incisions composed of bands of meanders nestled within each another running vertically down the vessel's body which are so characteristic of the developed Dudeşti phases (Păunescu 1964, figs. 2/4, 6–8, 11; 3/4). Also to be ascribed to the later material is a vessel with a cylindrical neck and a fine channelled decoration which already resembles a classical Toptepe jug on grounds of form, and thus is first to be dated to the Late Neolithic (Păunescu 1964, fig. 2/1). Beyond formal similarities among the coarse ware, no vessel finds in Muntenia may currently be found which might be directly associated with Ovcharovo-Gorata.

7.10. Oltenia

From 1971 onwards, Marin Nica studied two settlement sites at Cîrcea in the Judeţ Dolj (Nica 1976. – Nica 1977). One of these was a site in the field of La Hanuri at which a three-phase trajectory may be attested, the other a location with the toponym of "Viaduct" representing a continuation of La Hanuri's trajectory. The stratigraphy at Cîrcea-La Hanuri allowed the differentiation of a total of five settlement levels, of which the lowermost three pertain to the Early Neolithic. At Cîrcea-Viaduct, a total of four settlement layers could be evidenced, of which the lowest two concern the Early Neolithic. By means of the material unearthed there, the earlier of these levels can be associated with the uppermost Early Neolithic layer at La Hanuri. The lowest stratum of La Hanuri (Cîrcea I) yielded (among other examples) spherical pots on a lightly offset straight foot rim, dome-shaped bowls on high footrims, and vessels on a cross-shaped base (Nica 1976, fig. 7). A smaller portion of the sherds is decorated with impressions or incisions (Nica 1976, fig. 8). In addition to the monochrome-slipped vessels (overwhelmingly with a red coating) which constituted the majority of the vessels, a few examples are additionally decorated with white paint (Nica 1976, figs. 1–4. – Nica 1977, fig. 2). Attested among the painted motifs are mainly linear patterns of parallel lines, crosshatched bands, and zigzag motifs, as well as dotted patterns. The type spectrum of the overlaying level (Cîrcea A II) can scarcely be distinguished from that of the level preceding it. Significant transformations may be evidenced in the painting now extensively covering the vessel surface. Still commonplace is the use of white paint. Polychrome painting is additionally attested in the colours of white, red, and brown (Nica 1976, figs. 10–13). Little material resembling the lowest stratum of Viaduct has been published from the uppermost Early Neolithic level of La Hanuri (Cîrcea III). Here, the slipping of the vessels with barbotine decoration can now first be attested (Parzinger 1993, 85). Polychrome painting in the colours of red and brown upon a barely tangibly altered vessel spectrum continue to be commonplace. Clear differences are first evident within Cîrcea IV, a late period only attested at Viaduct. Characteristic are bowls with sharp breaks and pots with S-profiled rims. Cups with tap-like applications on the handles appear for the first time. The painted vessels display an extensive, spiral-formed pattern overwhelmingly in the colours of ochre-yellow, red, and brown. Over the course of Cîrcea I to IV, a general reduction in red burnished wares in favour of simple, smoothed wares may be deduced (Parzinger 1993, fig. 5). A statistical evaluation of the pottery by Parzinger according to the highly detailed information from Nica demonstrates how complex the ceramic trajectory was, inasmuch as the different forms of surface treatment are not typical for any sole phase, but rather merely shift in their percentages in relation to each another (Parzinger 1993, 85–86 and fig. 5). With respect to Ovcharovo-Gorata, the greatest similarities are with Cîrcea III. In addition to a general similarity of the fundamental vessel forms, the vessels on a high foot and the vessels with tap-like handles and, finally, the vessel painting with brown paint on a reddish-slipped background are all decisive (cf. Nica 1977, figs. 17, 19). The large quantity of carinated forms seems to be a local peculiarity, although similar vessels such as the pot and bowl forms T3 and S4a–b are also evidenced at Ovcharovo-Gorata (cf. Chapter 7.4, Figs. 119–123). Numerous similarities may also be found among the coarse wares of Cîrcea-Viaduct's upper level (cf. Nica 1977, fig. 20), although the polychrome vessel painting and (most importantly) the barbotine slip suggest an advanced stage of the Early Neolithic (cf. Nica 1977, figs. 21, 23–28).

The preceding development (to be parallelised with Cîrcea I and II) is also attested at Grădinile-La Islaz (Nica 1992. – Nica 1995). Most of the published forms are of the fine ware displaying an extensive painting with white paint on a red-brown-slipped background (Nica 1992, figs. 1/1, 2, 4–5; 2/1–8). Expansive bowls on low foot rims and S-profiled, spherical bowls, some with a flat, rounded stud on the belly are attested (Nica 1992, figs. 1/2, 6–7; 2/3, 7).

7.11. The Problem of Early Neolithic Domestic Architecture

The detailed evaluation of the houses discovered at Ovcharovo-Gorata reveals the dilemma of the absence of trustworthy information regarding Neolithic domestic architecture in the eastern Balkans. Were the preliminary report of the excavations to be trusted (Angelova 1992), then the impression would have been gained of a development from unshapely pit-houses to rectangular post-houses over the course of the Early Neolithic. The stratigraphy of Ovcharovo-Gorata can neither be reconstructed from the excavation documentation, nor from the evaluation of the find material; thus, all information regarding the chronological depth of the postulated development of the houses is lacking. In terms of the domestic contexts themselves, it could be demonstrated that they had already been manipulated on the surface. The methodically better documented architectural discoveries at Dzhulyunitsa demonstrate that pits dug into the ground may, in fact, be presumed for the earliest Neolithic structures, although these nevertheless only represent substructions or storage pits within the houses.

Marion Lichardus-Itten evaluated the negative features in Kovachevo as drainage pits, and also noted a methodological problem in the interpretation of the shapeless settlement structures from the Early Neolithic settlement (Lichardus-Itten 2010, 14–15). The published settlement plan of the earliest level from Golyamo Delchevo must probably also be approached in such a manner (Todorova 1975, figs. 3, 5–6). The huts over the pit structures reconstructed by Todorova (Todorova et al. 1975, fig. 4) are also less than convincing.

The present author assumes thereby right-angled buildings which have left negligible trace below ground due to their specific mode of construction, for example as houses upon stilts or blocks. It is only with the arrival of the chronological horizon of Dzhulyunitsa IV that reliable data exists indicating a type of post-house constructed with the wattle-and-daub technique. The settlement of Ovcharovo-Gorata would also have consisted of such dwellings. The foundations published in the preliminary report cannot be meaningfully combined with the oven platforms unearthed, whose positioning within the archaeological record is the only evidence which might truly be considered authentic. The house types of the earliest Neolithic settlement within the Danubian lowlands seem to have differed thereby very markedly from those of the Struma Valley and North Macedonia, and do not permit any comparison with the solid architecture of the neolithisation's departure point in the Aegean sphere. It is conceivable that the wish to entrench houses somewhat deeper in the ground may have been a reaction of the early farmers in adapting to the continental climate of the region. Nevertheless, this can only be presumed, given the present state of research.

7.12. Summary of the Neolithisation on the Lower Danube

The earliest ceramic find material from the Lower Danubian lowlands is already so technically well executed that an extended period of prior technological gestation in the more southerly regions must be presumed. Regardless, no indication of an independent development of pottery production cant be found within this region. The connections to the ceramic trajectory within the central portion of western Anatolia are also more than apparent. A terminus post quem for the entry of this pottery into the Balkans may be established there by means of the stratigraphically secure development of the vessel pottery with its two characteristic innovative elements of red-slipped and impresso ceramics. Red-slipped and impresso pottery alike appear as the earliest pottery within the region of the Lower Danube. These ceramics are the most archaeologically visible part of a fully developed Neolithic economic package arriving in the north. Within the well-researched material from Dzhulyunitsa, further finds can be mentioned originating from the western Anatolian conceptual world, including stone rubbing plates, clay amulets in the form of stylised bucrania, the so-called 'labrets' (see Chapter 11.6), and a specific type of seated female statuette. It follows that various aspects of intellectual culture might have travelled with the Neolithic package from its region of origin to the Balkan region; the aforementioned objects are merely the direct evidence of this.

As a result of the research of Elena Marinova, comprehensive information about the environment of the Bulgarian Danubian lowlands into which the early farmers penetrated is now available. Indeed, that a genuine immigration of an already fully neolithised population is to be expected for the lowlands of the Danube is beyond doubt in light of this complex cultural packet. Emmer, einkorn, and barley along with lentils, peas, and bitter vetch are the usual domesticated plants which first appear in the region of the Lower Danube in connection with the Neolithic. These were also cultivated much earlier in the areas southeast of the Balkans. The most likely region of departure for the transference into the area of the Lower Danube would once again be western Anatolia (with perhaps Thessaly also to be further considered), in all of which regions these cultivars had previously already occurred.

Studies of the animal bone material from Dzhulyunitsa by Canan Çakırlar and Petăr Zidarov were able to demonstrate that domesticated cattle and sheep/goat already

heavily predominate within the refuse layers of the earliest settlement. This image only alters in its nuances with the advent of the developed Early Neolithic. Beyond the aforementioned ungulates, large proportions of domesticated pig may be found among the animal bones from Ovcharovo-Gorata and hunting seems to have played a larger role than at the beginning of the Early Neolithic. Regarding the question as to the direction from which the Neolithic penetrated the Lower Danube, only the Macedonian region presents itself as a viable option. No sites this early are known from Thrace to the south and the premise of a neolithisation from the east by means of the Black Sea lacks any basis in appropriate sites. As it will be sought to be demonstrated below, the Neolithic of the north-western Pontic steppes also begins markedly later. The topography of the landscape only offers two routes from the Macedonian region to that of the Lower Danube, both of which are presently equally viable paths for the neolithisation. One of these is the direct way through the Struma Valley over the plain of Sofia and via the passage of the Iskar through the Balkans. The other is the longer route via the river valley of the Axios/Vardar, then through the Southern Morava and finally into the Danubian lowlands by means of the Danube Gorges. Due to much earlier sites being as yet lacking within north-eastern Bulgaria, the former path via the Sofia Plateau is currently rendered more likely. Each newly discovered site between the Struma Valley and north-western Bulgaria, on the one hand, and the Vardar region and the Danube Gorges, on the other, will certainly modify this route, but the ultimate departure point of the Lower Danube's neolithisation from the Macedonian region will remain unchanged.

8. Neolithisation Processes in the Carpathian Basin

Already from its infancy, research into the advent of the Neolithic in Europe displayed a focus upon the Carpathian Basin. Initially, this was exemplified by the excavations at Starčevo (Fewkes, Goldman, Ehrich 1933) in the southern Banat, soon to be eponymous for the regional expression of the Early Neolithic within the entire central Balkan region and in the Banat (Arandjelović-Garašanin 1954). At the northern end of the Carpathian Basin, it was research in Hungary (Kutzián 1944. – Kutzián 1947) which addressed this period. Thus, the Early Neolithic in the extended region roughly between Pančevo and Debrecen, essentially the entire Vojvodina, the Romanian and Hungarian Banat, Transylvania, and the southern Alföld would remain principally unresearched (cf. Milojčić 1949, 70–94). While this situation tangibly altered within the Serbian portion of the Carpathian Basin in the wake of the Second World War, the Banat continued to be uninvestigated with the exception of the zone immediately along the banks of the Danube. Gheorghe Lazarovici's portrayal of the state of research up to the 1970s very clearly highlights this state of affairs (Lazarovici 1979). He only had recourse to the results of archaeological excavations for the zone along the Danube Gorges. For the territories north of there, he could only evaluate documentation from amateur researchers and small ethnographic collections. His information is accordingly patchy and false in places, should it be examined in detail. This only became clear to the present author upon undertaking his own research project in the northern Banat, a region which had not been investigated in the slightest for Early Neolithic settlement. The most recent register of sites compiled within the Jagiellonian University of Kraków's publication series *The First Neolithic Sites in Central/South-East European Transect* also evidences the discrepancy between, on the one hand, well-researched Transylvania and the region of the southern Banat along the Danube Gorges and, on the other, the few sites within the lowland Banat. In addition to the passage of the Olt, the valley of the Mureș seems to have been of some significance in the neolithisation of the inner-Carpathian regions, as is attested by a concentration of the earliest sites along the river course. The trajectory of the Neolithic within Transylvania has already been the subject of various summarising works (Berciu 1961. – Vlassa 1966. – Lazarovici 1984. – Maxim 1999), and has been specifically treated by Marius-Mihai Ciută not long ago with a focus upon the Early Neolithic, integrating the more recent excavations (Ciută 2005). The discovery of new sites with overwhelmingly monochrome and some white-painted pottery permitted Iuliu Paul to dismantle the Starčevo-Criș culture, a four-stage system developed by Lazarovici on the strength of the sites in the Banat and ultimately based upon divisions made by Vladimir Milojčić (Paul 1995. – cf. Milojčić 1949, 70–71. – Lazarovici 1979, 15–25. – Lazarovici 1984). Paul and (very much in the same vein) Ciută assume as their point of departure an older, so-called "Pre-Criș culture" as the earliest appearance of the Neolithic presaging the actual Criș culture within the Carpathian Basin (Ciută 2000. – Ciută 2005, 26–42). This corresponds to the level Starčevo-Criș I following Lazarovici, and is synchronised with Proto-Starčevo (Ciută 2005, 18). An organic evolution of the 'Pre-Criș' materials to actual Criș pottery is stratigraphically attested at multiple sites and not only at the usual examples, but also at the aforementioned sites in Oltenia, as a result of which, this division comes across as rather

artificial. Certainly, pre-Starčevo-I-period sites were only first discovered in former Yugoslavia following the publication of Milojčić's periodisation, with this providing a sensible rationale for discussion of a Proto-Starčevo phase. For the Romanian Carpathians, such a distinction between 'Pre-Criș' and Criș seems far less meaningful, inasmuch as the earliest so-called 'Pre-Criș' sites number among those longest known.

8.1. The Southern Banat, Bačka, and Srem

The Early Neolithic of the Pannonian Basin displays only weak connections to the north-eastern Bulgarian region, but (conversely) stronger ties to the central Balkans. The four-level division of the Starčevo culture into Stages I–IV first undertaken by Milojčić (Milojčić 1949, 70-81) was thereafter consequently adopted and further substantiated with finds for Yugoslavia by Draga and Milutin Garašanin (Garašanin 1973, 36–42) and for Romania by Lazarovici (Lazarovici 1979, 15–69). To this was later added the Proto-Starčevo culture, a term coined by Dragoslav Srejović on the basis of the finds from Lepenski Vir (Srejović 1971).

The transition from Proto-Starčevo to Starčevo was already stratigraphically understood by Sergej Karmanski at Donja Branjevina in the 1960s (Karmanski 1979. – Karmanski 2005). Three levels were attested there, the lowest of which contained exclusively impression-adorned coarse pottery and a red-slipped fine ware. Following this is a stratum with white-painted pottery which might be parallelised with the earliest material from Gura Baciului (and thereby the phase of Starčevo-Criș I) by means of its spotted motifs and lattice patterns. The latest level at Donja Branjevina displays linear, dark-painted pottery associated by Schubert with Gura Baciului III (Schubert 1999, 86–87). Further supporting this synchronisation are the high foot rims of some of the bowls, which appear from Starčevo-Criș III onwards, although enduring into Stage IV (cf. Lazarovici, Maxim 1995, figs. 45/4; 47/5).

For Lazarovici, fundamental to the subdivision of the later Starčevo-Criș phases of III and IV particularly were the settlement stratigraphies of Dubova-Cuina Turcului, of the Danubian island of Ostrovul Golu, his excavations at Gornea, and, indeed, the typological division of the Criș-period finds from Schela Cladovei from the Romanian side of the Danube Gorges.

The stratigraphies of Gornea and Cuina Turcului already begin in their Phase IIb, of which flat-bottomed vessels such as simple bowls with straight or slightly rounded walls, pots with offset straight edges or with a flaring profile, or narrow-necked, bulbous vessels are typical (cf. Lazarovici 1979, pl. V/A1–12, 14–29).

In clear contradistinction to this, vessels with tall standrings occur from Phase IIIa onwards and the further roughening of the surfaces of the coarse wares with impressed barbotines and crude impressions markedly increases (cf. Lazarovici 1979, pl. VI/A–C). Any development in the painting of vessels is (by means of contrast) hardly perceptible, as a result of which Schubert has his classical Starčevo II encompassed both phases (Schubert 1999, 86–87). A dark painting inventory composed of hashed triangular motives, parallel lines, and hatched bands is attested in both Starčevo-Criș IIb and IIIa (cf. Lazarovici 1979, pls. V/B; VI/B43–46). Nevertheless, the division between these two phases is of vital relevance to the present study as the elements first appearing in Starčevo-Criș IIIa such as high foot rims and crude impression-adornment also occur in the material from Ovcharovo-Gorata, thereby permitting a comparison with the western Pontus for the first time. Lazarovici ascribes the finds from Ostrovul Golu I, Cuina Turcului II, and Schela Cladovei, and the earlier material from Gornea to this stage (cf. Lazarovici 1979, pl. VI/A–B).

Even more striking overlaps in form spectrum result from the finds of Phase Starčevo-Criș IIIb, if (in addition to the aforementioned forms) vessels with small feet, an incised decoration combined with plastic cordons, and numerous ornaments applied to the vessel surface are also considered (see Lazarovici 1979, pl. VII/C22, E–F). Hence, the strongest similarities are displayed with Ostrovul Golu II, Cuina Turcului III, and the later Criș material from Gornea. Comparison of the painted motifs is of little additional aid, as only a very general connection between Ovcharovo-Gorata and phases Starčevo-Criș IIb to IVa may be evidenced in the Banat (cf. Schubert 1999, 86–88).

Also to be associated with Starčevo-Criș III are the finds from Giulvăz already discussed by Lazarovici, which he assigns to his phases of Starčevo-Criș IIIa to IIIb (Lazarovici 1979, 47–49. – Lazarovici 2006, fig. 20). At this juncture, the pottery no longer displays a red slip. Dimples in the lips of vessels, however, are as frequent as before; on the Lower Danube, these might be considered an indication of a very early chronological ascription. In the Banat, this adornment technique seems, nevertheless, to have endured much longer, and thus cannot be assumed to be emblematic of an earlier date. Quite evidently, two levels could be identified within the excavations of the 1960s, of which only a selection of finds from Horizon I has, nevertheless, been presented by Lazarovici (Lazarovici 1979, pl. VII/B6–14, D1–2, F37–45). With their dark-brown linear and spiraloid painting, the vessels to be found there are to be associated with the latest material from Donja Branjevina I and Gura Baciului III according to Schubert, which generally corresponds

to Lazarovici's Starčevo-Criș III phase (Schubert 1999, 86–87. – cf. Lazarovici 2006, fig. 20). To be added to this are the finds from a settlement site at Golokut in the Sremska Gora, south of Novi Sad (Petrović 2006). There, settlement pottery replicating the type spectrum from Donja Branjevina I and Gura Baciului III was unearthed from multiple irregularly formed pits. Coarse vessels adorned with barbotine and impressed adornments, and fine pottery on high foot rims are characteristic. Spiral motifs accomplished with dark pigment on a light background are be found most prominently among the painted wares (Petrović 2006, pls. I–II).

While various previously developed elements endure during the phase of Starčevo-Criș IVa (attested at Ostrovul Golu III and Gornea), the appearance of biconic forms offers a clear typological criterion for delineation. The plastic technique of adornment with incisions, impressions, and appliqué motifs first clearly experiences a floruit at this time, and it is, accordingly, hardly surprising that individual forms among the rich wealth of motifs lend themselves to comparison with those of Ovcharovo-Gorata (cf. Lazarovici 1979, pl. VIII/E–F). Nevertheless, comparison over such great distances based purely upon forms always remains fraught with certain difficulties. In light of the much more pronounced affinity of the material from Ovcharovo-Gorata and Dzhulyunitsa IV with the material from Transylvania and (in particular) Moldavia, a chronological connection with the phase of Starčevo-Criș IIIb in the Banat seems far more likely.

Sharply profiled forms with multiple limbs are characteristic of the phase of Starčevo-Criș IVb as contained in Ostrovul Golu IV, which already point to the Middle Neolithic and must possibly be considered in connection with the Vinča A Complex (Lazarovici 1979, pl. IX/A–C). The forms may clearly be distinguished from earlier examples. A somewhat comparable vessel structure is displayed by layers A–B1 and B2 at Samovodene (Stanev 2002b, pls. 5–10) and Karanovo III (cf. Nikolov 1998, pls. 11–13), this confirming the posterity of this find horizon in comparison to finds from Ovcharovo-Gorata.

8.2. Parța, Tell II

The present author's research in the Romanian Banat is connected to that of the Museum of Banat directed by Florin Drașovean and Dan Ciobotaru. There has been collaboration between the latter and the Eberhard Karls University Tübingen since 2008. Central to this work is the question as to how the Balkan Early Neolithic displays itself in its north-western expansion, and which local expressions occur within this specific environment. Further pertinent is how this concept (developed initially in the Mediterranean) might have developed in respect to the preconditions in that parts of the Banat region with its continental climate and a very precise situation in terms of resources, i.e. possessing good soils but with no sources of stone.

The prehistoric settlements at Parța are to be found to the south-west of Timișoara, only some 16 km from the centre, on the northern bank of the Timiș/Temesh River. Immediately north-west, neighbouring the famous Middle and Late Neolithic settlement of Parța (Tell I) (Lazarovici, Drașovean, Maxim 2001), may be found an Early Neolithic settlement of enormous extent, but with a markedly lower accumulation of levels in comparison to the levels of Tell I. This site was also intensively visited within the context of Lazarovici's excavations on Tell I, and surface finds collected. As yet, excavation has not occurred here. The collection finds are stored in the Museum of Banat, Timișoara.

In August 2009, three strips of land were measured geomagnetically by the company Eastern Atlas, two of which lay on the south-eastern slope of the tell (c. 1 ha), and one on the plain north of the tell (0.2 ha) (Fig. 159). As the field forming the largest part of the tell was planted with maize, and only half of a working day was available for the investigations, the results of the geomagnetic mapping provided only a narrow insight into the expected archaeological structures. The two strips on the southern slope of the settlement (c. 200 m long and 27 m wide) display wildly differing distributions of archaeologically relevant magnetic anomalies. While the northern of these lies almost completely within a settled area and evidences numerous archaeological structures such as pit-houses and ovens, its southern counterpart only tangentially encounters the tell's core area in its westernmost part. The areas with higher concentrations of settlement remains were evidently enclosed by a succession of ditches. Whether these ditches are interrelated, and whether they surround the same tell cannot be deduced from the data on grounds of the limited surface area investigated. The northern strip, some 200 m north of the two southern swathes, displays a marked division into two: in its southern part, relatively strong magnetic anomalies indicating settlement pits might be noted, much as in the other two strips. By means of contrast, the northern portion is marked merely by weak anomalies which (while they may equally be potentially caused by pits) either lie beneath a considerable colluvial accumulation or have been largely destroyed by agricultural landscaping. The former seems more likely as the relief to the north slopes gently. It might thus be assumed that the previously more steeply sloped tell was gradually levelled by agricultural work, with this ultimately causing the differences in the archaeologically relevant magnetic anomalies



Fig. 159: Parța II. Geomagnetic mapping of the northern and southern edge of the Early Neolithic settlement area (Eastern Atlas, Berlin).

along the northern slope. Evidence of graves could not be found in the north.

The relatively small-scale geomagnetic measurements upon the already partially archaeologically investigated Tell II of Parța (Lazarovici, Drașovean, Maxim 2001, 58–59) hardly permit the drawing of any extensive conclusions. Nevertheless, the data demonstrate that the areas settled during prehistory may be distinguished from those likely unsettled. Yet, it must also be noted that transformations in the landscape as a result of agriculture might complicate the interpretation of the geomagnetic data. Additionally, earth removal and levelling can be expected in the vicinity of the dyke construction along the Timiș, as a result of which the utility of geophysical investigations regarding the site's archaeological character must be understood to be further limited.

In addition to Early Neolithic ceramics, surface finds could be identified from the chronological horizon of Vinča C and from the Banat's Late Neolithic Foeni Group (Luca 2006, 192). The geophysically mapped structures may accordingly only be assigned to a specific epoch with difficulty. Decisive for the selection of an alternate area for excavation was ultimately (and most importantly) the destruction in the centre of the suspected prehistoric settlement by a concrete bunker, and the enormous extent of the settlement, which can be estimated at about 18 ha from the geophysical measurements. How large an area of this relates to the Early Neolithic settlement could not be established on the strength of the distribution of surface finds alone.

The find material from Parța II was assigned by Lazarovici to his levels of Starčevo-Criș IIb to IIIb without explanation (most recently Lazarovici 2006, 116, fig. 20). Three ^{14}C dates commissioned by Ciobotaru are decisive here. It may generally be stated that the values of GrN-28460 (6860±60 BP), GrN-28877 (6800±50 BP), and GrN-28459 (6660±60 BP) lie very closely to one another and fall within the period of the first half of the 6th millennium BCE, which is to be expected on grounds of typological considerations in respect of the pottery. This comprises forms from the developed Early Neolithic which cannot be attributed any more precisely for want of closer analysis. The present author was only able to examine a portion of the find material in the depot of the Museum of Banat in 2007.

8.3. Foeni Sălaș and Foeni Gaz

The village of Foeni lies between the Timiș/Temesh River and the recently canalised Bega, some 45 km south of Timișoara. The present author's investigations were focused upon an area north-west of the village at Foeni Stația de Gaz (in short Foeni Gaz) from whence Early Neolithic finds have been known since 1993 (El Susi 2001. – Spataro 2003). Prior to this, excavations had already occurred from 1992 to 1994 at a site 3 km north-west of the locality, immediately by the road to Ionel/Johanisfeld in the field of Sălaș, under the direction of Haskel Greenfield and Florin Drașovean. Various preliminary reports with a geomagnetic mapping of the site by Jean-Michel Maillol exist for the excavation (Greenfield, Drașovean 1994. – Drașovean 2007).

The find material of the excavations at Foeni Sălaș may be attributed to the phases of Starčevo-Criș IIa–b, standing thus at the very beginning of the Neolithic settlement of the plains of Banat. The two presently published ^{14}C dates, GrN-28455 (7510±60 BP) and GrN-28454 (7080±50 BP), indicate the last two centuries prior to 6000 calBC (Biagi, Shennan, Spataro 2005). Some surface finds from Foeni Gaz are typologically comparable to the material from Foeni Sălaș, which is the reason why this site came under academic scrutiny after the conclusion of excavations at Sălaș.

The site of Foeni Gaz lies 2.2 km north-west of the village as the crow flies, only 2.5 km away from the Serbian border. The site received its name from a natural gas extraction installation (Stația de Gaz), whose aboveground structure encompasses some 1.2 ha. Earlier, now silenced extraction facilities originate from the Socialist era. Following the political upheaval of the early 1990s, a new station some 2800 m² in extent was established within the west of the area which continues to be in use today.

From 1998 to 2001, Ciobotaru excavated two sondage trenches immediately east and west of the modern pumping station. These investigations yielded Early Neolithic material from the Starčevo-Criș culture which might be ascribed to Phase IIb within Lazarovici's system (Spataro 2003). Some 20 m north and 150 m west of the natural gas station may also be found two tumuli of presently indeterminable chronological ascription.

In the summer of 2009, we were able to carry out a surface survey and a short excavation campaign at Foeni Gaz in cooperation with the Museum of Banat, the results of which were then published (Krauss, Ciobotaru 2014).

The more precise delineation of the Early Neolithic settlement area was initially accomplished by the Eastern Atlas company through the geomagnetic prospection of two large areas north and east of the natural gas station (Fig. 160). Accessible were two strips, one north (1.95 ha) and the other east (1.3 ha) of the gas installation's access road. The industrial complex demanded a necessary limitation of the geophysical prospections to these surfaces. The area to the north is enclosed by a row of closely-spaced pylons to the east and south interfering with geomagnetic measurements.

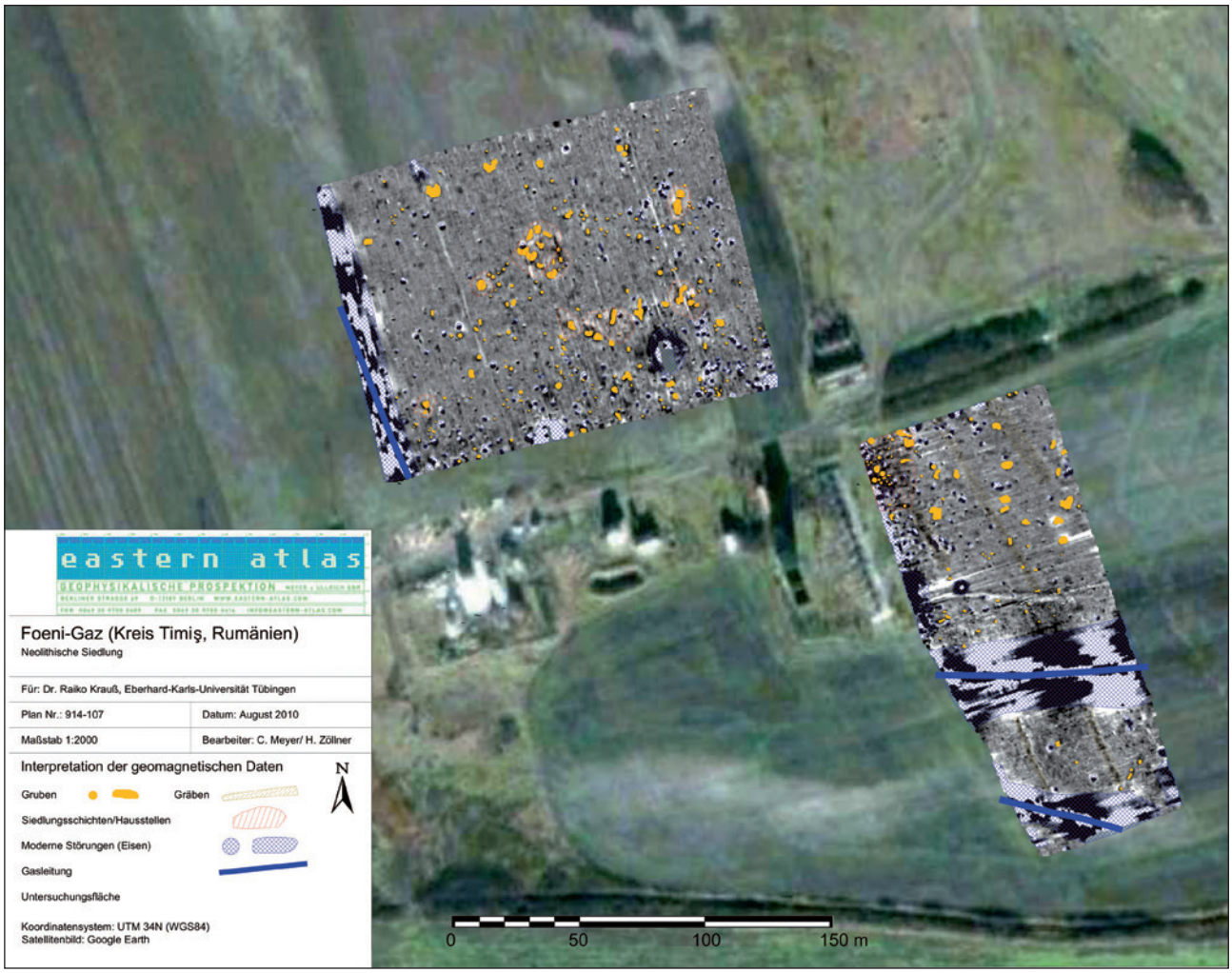


Fig. 160: Foeni Gaz. Geomagnetic mapping of the Early Neolithic settlement area (Eastern Atlas, Berlin).

When, in addition, a strong disturbance caused by a subterranean gas pipe was displayed, the measurements were attuned to the height of the northern tumulus. Also, as a result of the second tumulus, it could hardly be hoped that the earlier levels might be depicted in the geomagnetic mapping to the west. It was also to be expected that the entire southern area would be heavily disturbed by gas pipes, a fact ultimately confirmed by measurements in the area bordering to the east.

In the northern measurement area, the strong disturbances are confined to the westernmost edge and a strip of some 30 m in breadth along the field path. According to the archaeological map, the area should only cover the eastern edge of the site, but many positive magnetic anomalies indicating settlement pits could also be noted outside of the presumed limits of the settlement. In part, the pits are dispersed relatively unevenly across the area, but do form groups suggesting more intensive settlement activities, most noticeably at the centre of the surface measured. There, most of the positive anomalies are clustered within confined zones of weak negative magneticity (between 75 and 300 m² in size) the latter of which could be attributed to thin deposits from the debris of pit-houses, thus marking the sites of prehistoric houses. In the immediate vicinity of the presumed houses may also be found linear and (in part) all but right-angled configurations of smaller positive anomalies which probably originate from rows of postholes.

The large number of finds to be encountered particularly in the vicinity of the subterranean gas pipes nevertheless implies that the trenches dug for these directly cut the prehistoric settlement. In order to encompass a settlement boundary potentially running alongside a gas line, this area was systematically investigated for surface finds within an area of some 3650 m² composed of a grid of 5 × 5 m squares. Somewhat surprising was not only the quantities of finds but also (most noticeably) their diversity. In addition to



Fig. 161: Foeni Gaz. Distribution of Early Neolithic ceramic ware according to the results of the surface survey (R. Krauß/Eastern Atlas, Berlin).

Early Neolithic sherds (Starčevo-Criș), material from the Late Chalcolithic (Baden), the Early and Late Bronze Age (Makó, Nagyrév, Cruceni-Belegiš), the Early Iron Age, and Middle Ages was also recorded. Hence, it became evident that the Early Neolithic features had not only been heavily disturbed by modern incursions into the earth, but also overlaid by the numerous settlement levels of later prehistoric periods. As drastic as the trench cut for the gas lines is, the Neolithic finds would, notwithstanding, never have been visible without this deep incursion into the ground. Quite evidently, the Early Neolithic levels (at the very least) are overlain by a thick colluvium; the regularly recurring flooding from the tributaries of the Tisza must have left sizeable quantities of sediment upon the flat Banat plains before these waters were dyked. Moreover, the overlaying of the Early Neolithic levels by the occupation of later epochs must also be considered in this context (Fig. 161). A small sondage excavation of 3 × 5 m yielded a settlement feature of the late Baden culture cut by an Early Bronze Age well (Krauss, Ciobotaru 2013).

8.4. The Landscape of the Northern Banat

The landscape in the northernmost part of the Romanian Banat is a flat loess plain divided between strongly meandering

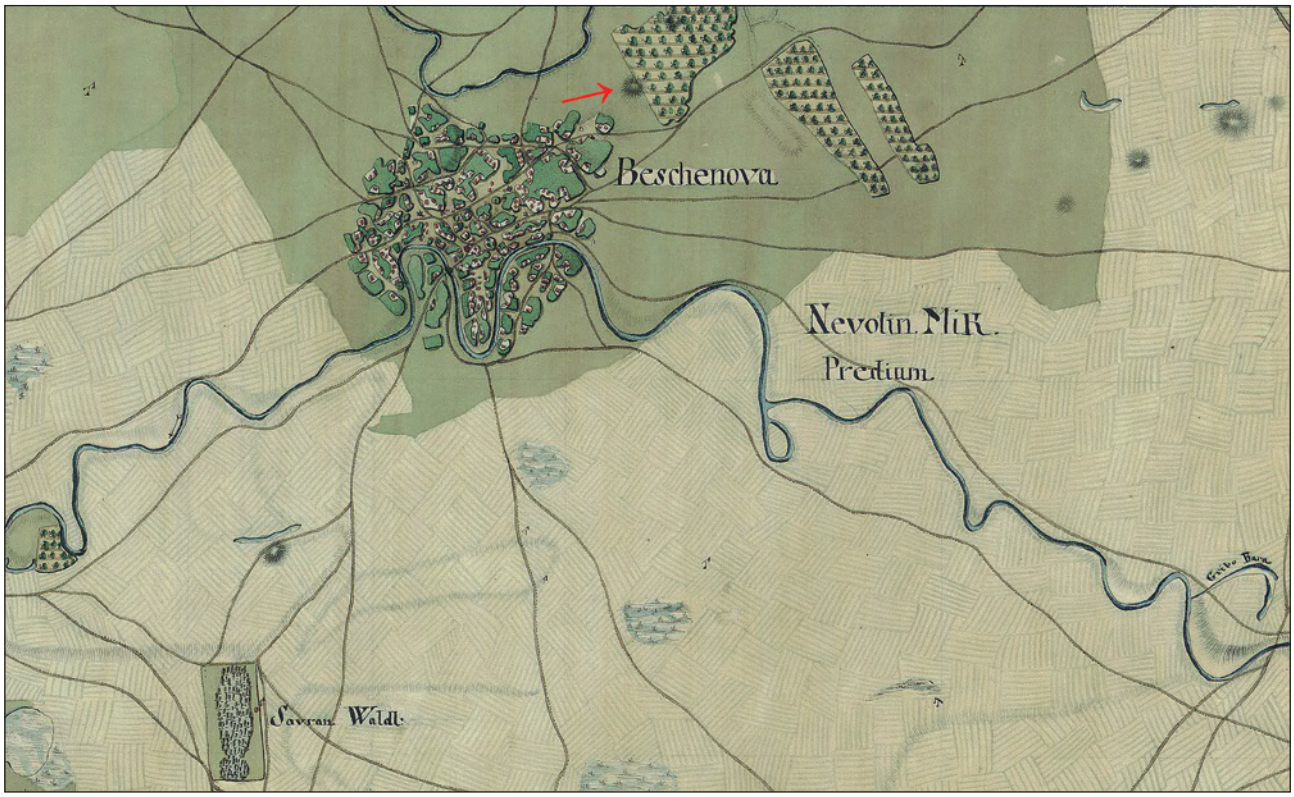


Fig. 162: A bigger settlement or burial mound on the Josephine map from 1769–1772 next to the village of Beschenova (today's Dudeştii Vechi).

river courses converging to the west within the Tisza. The northern edge of the Banat is formed by the Mureş/Maros/Maroš which forms a broad delta prior to its damming with dykes. The current, largely dry landscape was first engendered by its incorporation into the Austrian Danubian Monarchy from the 18th century onwards. As might be noted from historical maps, the delta extended from the present-day estuary of the Mureş into the Tisza at Szeged some 40 km further to the south. The small, present-day river of the Aranka/Zlatica roughly marked its southern boundary. The villages of Sânnicolau Mare, Dudeştii Vechi, and Vălcani may be found on the Aranka's course before the river flows into the Tisza on the Serbian side at Padej. Until the dyking and straightening of the river courses, the landscape between the Aranka and the present course of the Mureş was an extended damp biotope with numerous swamps and woods interspersed with many small bodies of water barely separated from one another. Of the many flowing watercourses only the Ciganska Aranka still transports water for any long distance. It flows north of Sânnicolau Mare up to Dudeştii Vechi, where it joins with the actual Aranka. Until the 18th century, it was only south of the Aranka that the steppe-like landscape which marks the entire region up to the Mureş today actually began. As a result, a transitional zone was presented to the first farmers, yielding optimal conditions for agriculture and good pasturage in its south, with aquatic resources and game (together with ample wood for construction and fuel) in its north. This general image of the landscape is primarily gained from the evaluation of the copious material from historical maps. Diagnostic illustrations are provided most prominently by a 1680 map from Amsterdam by Joannis Janssoni, a map of Hungary made by Thomas Bowles and Robert Sayer from the 18th century, the military map by Reinier and Iasué Ottens from 1740, the *Tabula Bannatus Temesiensis* by Franciscus Griselini from 1776, and, finally, (and most precisely of all) the Josephine land survey compiled in the years 1769–1772.

The transitional zone on the southern edge of the delta estuary of the Mureş also offered settlement conditions following the Neolithic period, which is evident from the striking density of archaeological sites along the Aranka. Most noticeably, numerous mounds still protrude pronouncedly from the flat plain. Between 1903 and 1908, the Hungarian Gyula Kisléghi Nagy undertook field surveys and occasionally excavations at various sites between Óbessenyő/Star Bišnov/Bessenova/Beşenova Veche (today Dudeştii Vechi)

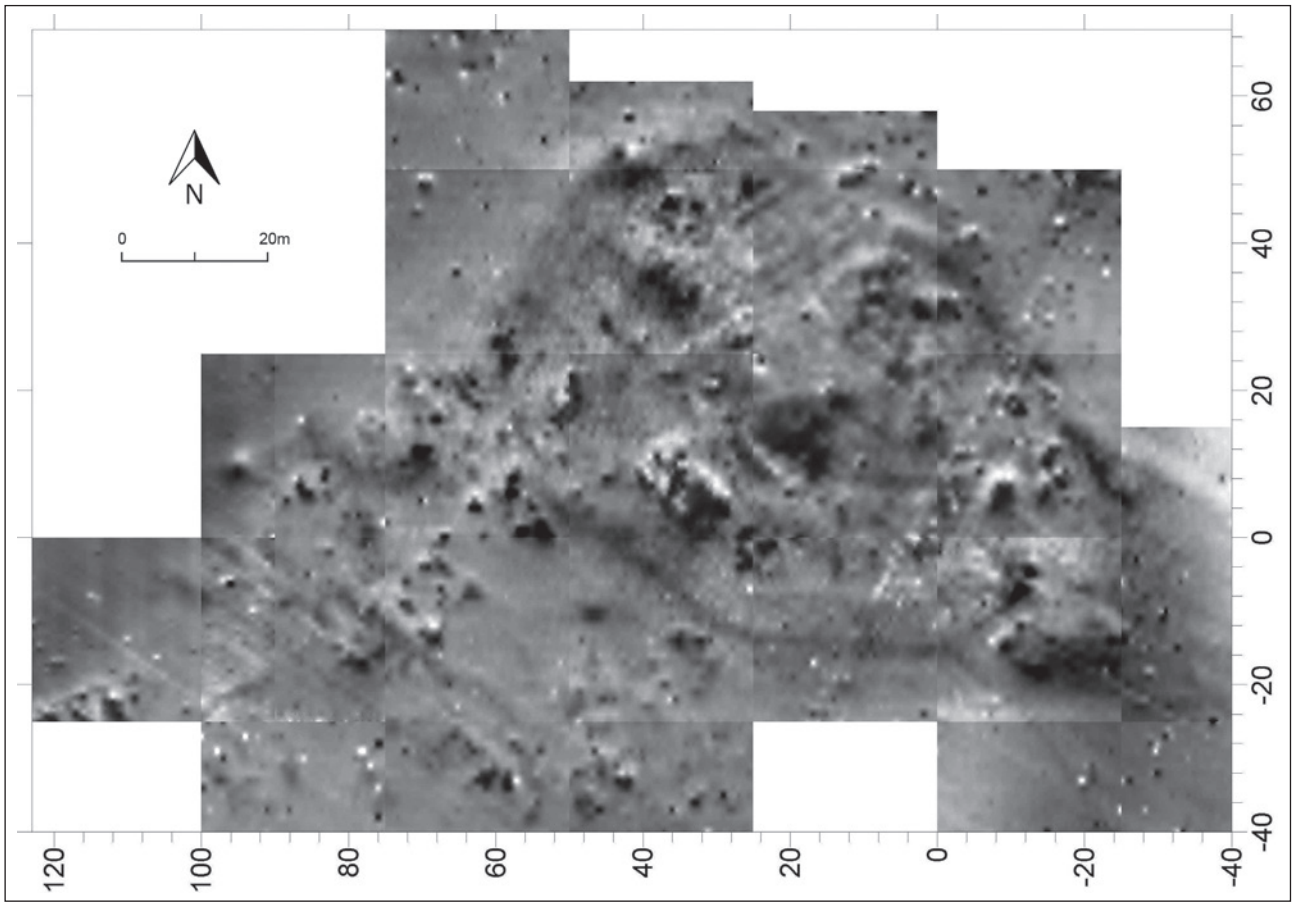


Fig. 163: Movila lui Deciov. Geomagnetic mapping of the Early Neolithic settlement surrounded by a ditch (J.-M. Maillol).

and Nagyszentmiklós/Groß Sankt Nikolaus (today Sânnicolau Mare) (Kisléghi 1907. – Kisléghi 1909. – Gáll, Ciubotariu, Tănase 2010). The first systematic registration of all archaeological sites visible at the time within the region (and most importantly the mounds) may be attributed to him. He recorded 13 sites in the environs of Óbessenyő alone, to which he accorded Roman numerals following the order of his visit or ascribed local toponyms known to him (Gáll, Ciubotariu, Tănase 2010, 147–148). Most importantly, it was between Óbessenyő and Nagyszentmiklós, on the Bukova Puszta (today Bucova Pusta), north of the street connecting the two villages, that he recorded eleven visible mounds (Gáll, Ciubotariu, Tănase 2010, 145). He also numbered these sites with Roman numerals running from I to IX. In addition to these sites, an abandoned village and a La Tène-period cemetery in the vicinity of his mound of Bucova Pusta III should be mentioned.

8.5. Movila lui Deciov/Dečova Mogila

The Movila lui Deciov (Deciov's mound) consists of the largest (and only genuine) settlement mound in the district of the village of Dudeştii Vechi. The tell lies on the northwesternmost edge of the locale, directly north of the road to Cheglevici (Porumbeşti/Keglewitschhausen/Keglevichháza). Within academic literature, the site is often merely referred to generally by the name of Dudeştii Vechi, which is misleading in light of the village's frequent change of names (see above), and the existence of various other archaeological sites in the district. Considering its prominent appearance, its marked visibility within the level plain, and, in turn, its proximity to the village itself, it must be assumed that the local population already understood that the hill was an archaeological site in the wake of the settlement of Catholic Bulgarians (Paulicians) in Óbessenyő in 1738. However, a larger hill indicated on the Josephine map between the village of Beschenova and a small patch of woodland does not seem to be this settlement (Fig. 162). For this area, the map is not orientated towards north, but rather towards the northwest. In the first decade of the 20th century, Kisléghi registered the site under the name of Óbessenyői őstelep, and published the initial finds which he had largely found within private collections held by the local population. Quite

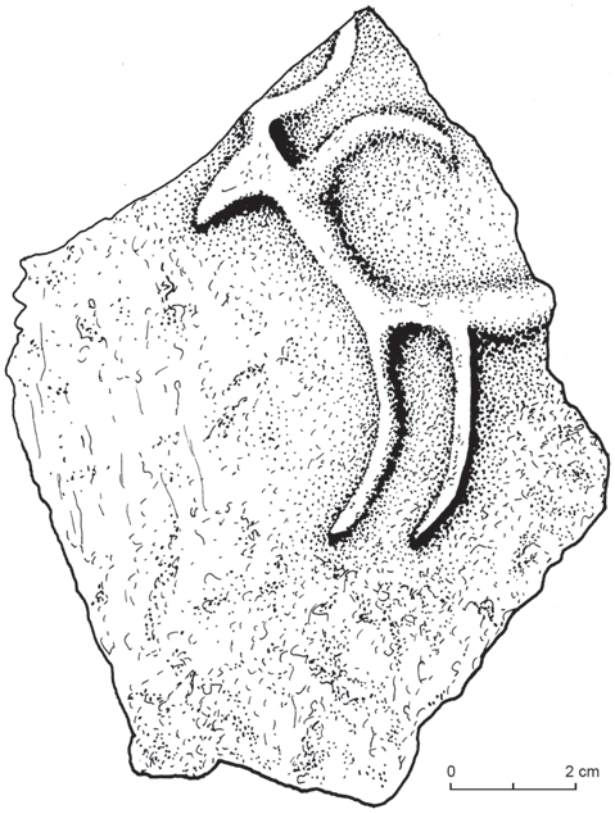


Fig. 164: Movila lui Deciov. Sherd of a big storage vessel with relief decoration of a bovid from the old excavations of Kisléghi Nagy Gyula (redrawing M. Möck).

evidently, he also undertook his own excavations (Kisléghi 1907. – Kisléghi 1909. – Gáll, Ciubotariu, Tănase 2010, 148). Lazarovici was unclear about the location of the individual sites around Dudeştii Vechi. The material from the Kisléghi Collection stored in the Timişoara Museum was registered by him under the name of Beşenova-Sat (Lazarovici 1979, 25). The information has been copied from there time and again, and up until the present day the finds have been referred to within academic literature under the heading of Dudeştii Vechi (or Beşenova). At some juncture following Kisléghi's investigations, the land came into the possession of a farmer named Dečov (Rom. Deciov), from whose name the site's present appellation derives.

In the 1980s, Konstantin Kalcsov, a history teacher at the local high school of St Cyril and Methodius, undertook his own excavations at the site with his students, incorporating the finds into the school's exhibits. In the 1990s, the school's collection was dispersed and discarded. Parts of this returned to Kalcsov's possession by way of alarmed pupils, but these were, in turn, confiscated along with many other archaeological finds in the 2000s, largely finding their way to the Museum of Banat. In 2000 and 2001, Dan Ciobotaru carried out regular excavations on the Movila lui Deciov, although with Kalcsov's participation; the results of these are presently unpublished. Only the findings of concomitant geophysical measurements by Jean-Michel Maillol have appeared within a preliminary report (Maillol, Ciobotaru, Moravetz 2004). The finds from these excavations largely arrived at the Museum of Banat. A small selection of whole vessels is also preserved within the small local historical collection of Dudeştii Vechi.

Ciobotaru's sondage excavations were able to confirm that the hill is largely formed from cultural deposits, and that this is accordingly a genuine tell containing evidence of the greater part of the Early Neolithic trajectory of the region. The geomagnetic measurements demonstrate that the entire hill is enclosed by a simple ditch (Fig. 163). This encompasses a surface of some 3750 m², this, in turn, distinguishing it from all other Early Neolithic sites within the region.

Lazarovici assigned the Kisléghi finds to his periods Starčevo-Criş IIb to IVa (Lazarovici 1979, tab. 5). In the region of the northern Banat, the Neolithic settlement generally only appears to begin with Starčevo-Criş II, inasmuch as earlier finds remain presently unattested. Only the settlement at Foeni Sălaş begins somewhat earlier, already in Starčevo-Criş IIa (see above). To be ascribed to the early material of the Movila lui Deciov is the body sherd of a large vessel with a depiction of a horned animal applied in relief on the upper surface (Fig. 164). This piece hails from Kisléghi's excavations (Kisléghi 1907, 275 and fig. I/2), and is today to be found in the Museum of Banat. The late phase of the development of the tell is marked by a dark-painted sherd with linear motifs which might be compared on a superregional level with the material of the phase of Anzabegovo-Vršnik II in the southern Balkans (Garašanin 1998, 36–37). The material from excavations in 2000 and 2001 under the direction of Ciobotaru, including the old finds from Kisléghi, was the subject of a doctoral dissertation by Andreea Jozsa at the University of Sibiu (Jozsa 2013). By means of a detailed evaluation of the finds, she was able to limit the settlement's occupation of the Movila lui Deciov to the phases Starčevo-Criş from IIa to IIIa (Figs. 165–167).

In 2018, the present author initiated new excavations on the Movila lui Deciov in cooperation with the Museum of Banat. There, a 4.60 × 10.10 m excavation trench was opened on a large geomagnetic signal in the east of the delimited settlement area. Two Early Neolithic settlement layers are clearly visible, which date to around 5800 and 5700 calBC according to the evaluation of the first data series. Additionally, this area contains relocated Middle Neolithic finds

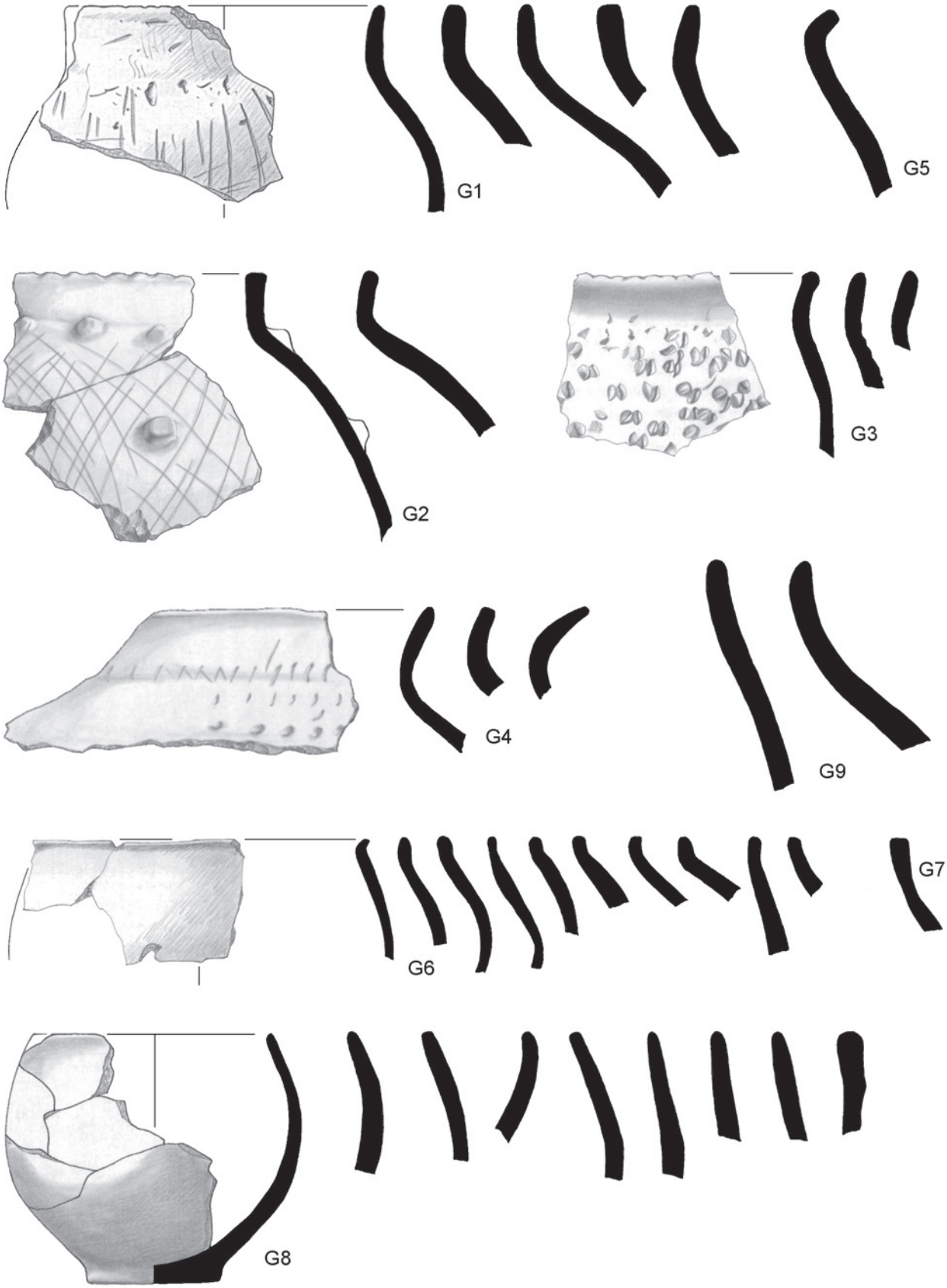


Fig. 165: Movila lui Deciov. Typology of closed ceramic vessels (A. Josza).

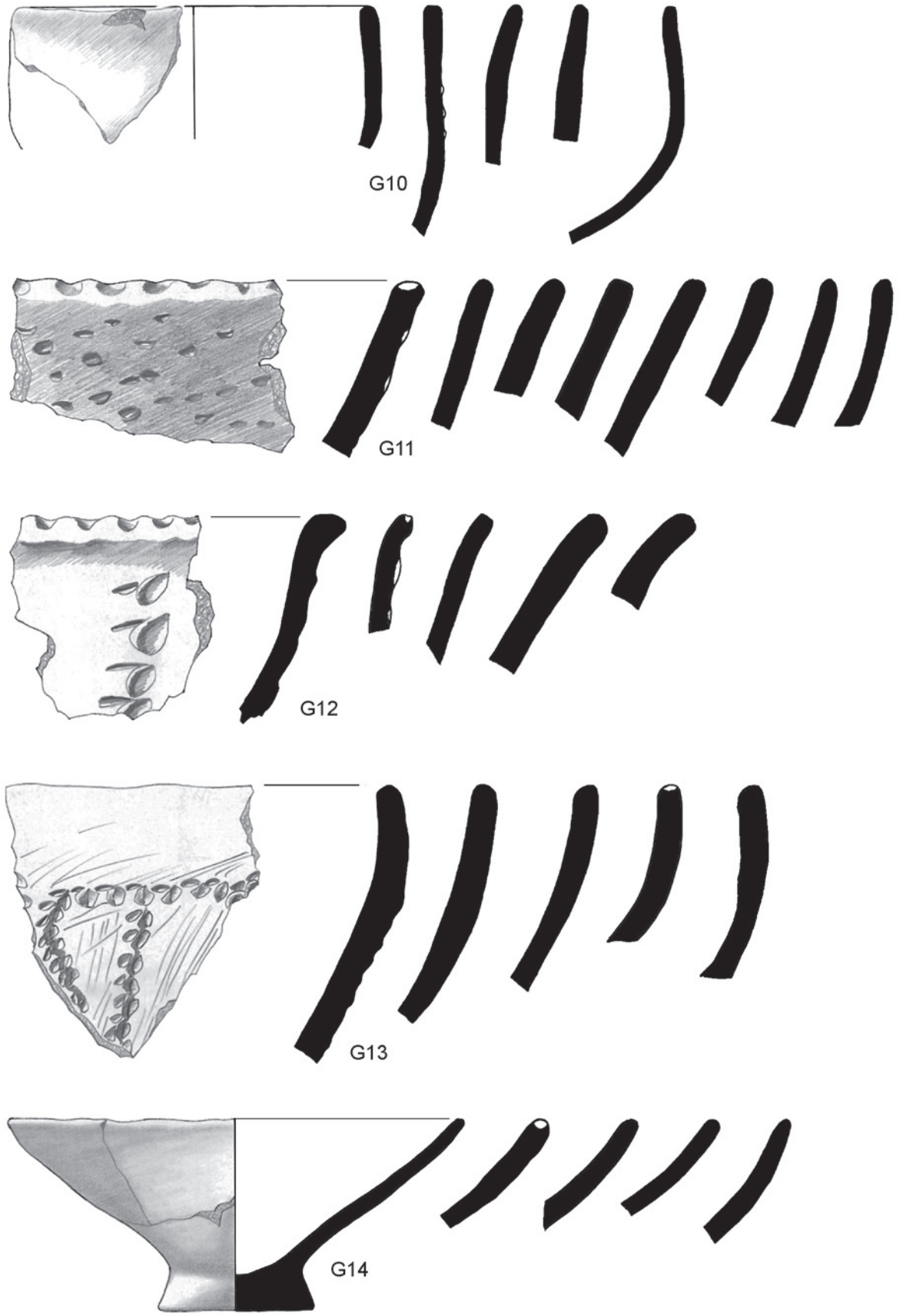


Fig. 166: Movila lui Deciov. Typology of open ceramic vessels (A. Josza).

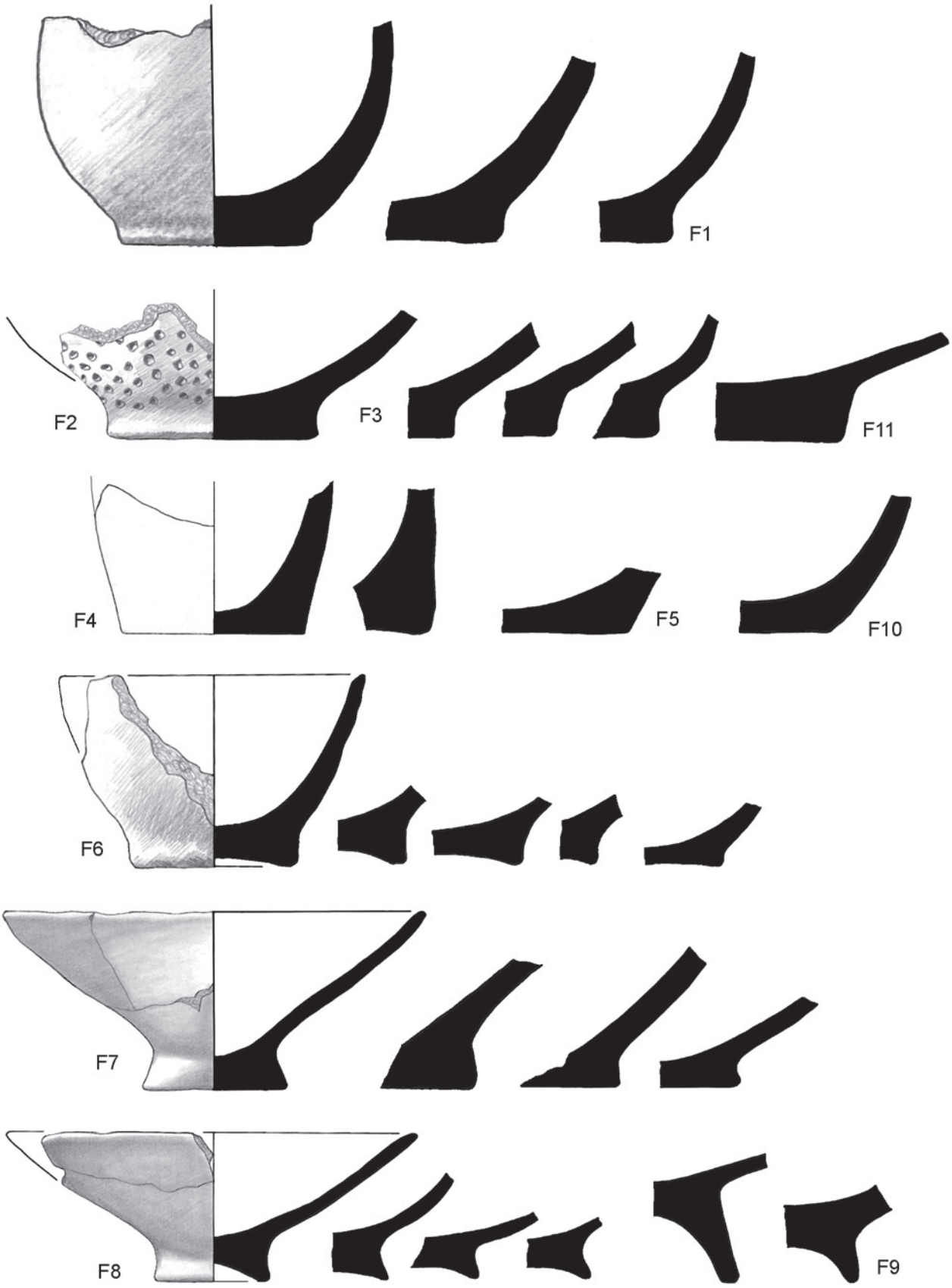


Fig. 167: Movila lui Deciov. Typology of ceramic vessels' feet (A. Josza).

from the period around 5600 calBC. However, clear contextual features from this period are presently missing.

For the older Early Neolithic settlement horizon, we were able to document larger parts of a post-and-beam dwelling in the excavation section. From the evaluation of the radiocarbon data, this feature should be approximately contemporaneous with the settlement's enclosure ditch. In the second Early Neolithic settlement phase, several very large pits were excavated from the upper layer, which penetrated the lower settlement horizon. The largest pit feature so far has a diameter of 6 m in the sections but still continues across the east-northeast profile. The backfill consists of laminated layers which can be macroscopically determined as ash bands, charcoal layers, and strata with burnt clay. Apparently, these pits were repeatedly used for pyrotechnic activities. It is possible that they were very large earth ovens, used, for example, for firing large, relief-decorated storage vessels, of which larger fragments were found in the fill sediment. The largest pit at the Movila lui Deciov is about 2.50 m deep. In addition to numerous pottery and bone finds, charred plant remains, fish bones, and snail and mussel shells were found in the pit fill. Sunk into the Early Neolithic layer were Chalcolithic crouched burials which might be safely attributed to the early Tiszapolgár culture on the strength of their ceramic grave goods, and the burial of a mediaeval mounted warrior with some of his armaments and the fragmentary burial of a horse. That the Early Neolithic find layer in this area is heavily disturbed is the result of not only these later inhumations, but also various animal burrows.



Fig. 168: Kalcsov I. Location of the tumulus "Na Pesaka" and the site on the Google Earth satellite image (R. Krauß).

8.6. Kalcsov I

One and a half kilometres east of the signpost for Dudeștii Vechi, immediately north of the road to Sânnicolau Mare, Kalcsov was able to localise a small Early Neolithic site unrecognised by Kisléghi. An extended hollow representing a currently desiccated secondary arm of the Aranka is easily identifiable in the ploughed field. Within the bow of this former river branch, a large quantity of sand had been deposited, elevating it above the otherwise rather clay-like soil, which is why the field is called "Na Pesaka" (on the sand). Emerging from the midst of this sandbar is a tumulus, the numbering of which within Kisléghi's system remains obscure. Kalcsov doubtless noted this burial mound, as it can already be discerned from the flat plain and the lighter surrounding sand from some distance. The centre of the Early Neolithic site (to be termed here 'Kalcsov I' after its discoverer for the sake of ease) lies 300 m south of the tumulus' crest (Fig. 168). The find scatter extends for some 250 m in an eastwesterly direction and 150 m in a northsoutherly direction, and is bisected into northern and southern parts roughly in its middle by a field path. Approached from the west, the settlement area may be discerned from its slight elevation above the former river course. This must be the result of a natural river terrace as the find accrual is too little to have engendered such a hill from settlement activities alone.

In the summer of 2013, the site was geomagnetically prospected over a surface area of c. 0.71 ha by the company Eastern Atlas (Fig. 169). Within the geophysical mapping, numerous positive magnetic anomalies could be identified, most noticeably in the region south of the path through the fields. Some of the rectangular to quadratic structures may well pertain to house remains spread very unevenly over the area. The northern sector has been heavily furrowed from deep ploughs (swales). Nevertheless, magnetic anomalies may also be distinguished in the north-eastern area which might be deemed structures of a settlement. A linear feature in this sector might well belong to a ditch system as known from the Movila lui Deciov. It was not expected from the find dispersal that the settlement would extend so far to the north-west. By contrast, the east-west extension seems to be much smaller. Here, the find dispersal alone is somewhat less indicative, as a growth of young wheat covered the northern surface, while the southern surface was conversely ploughed and free of undergrowth. From the results of the geomagnetic survey, a settlement size of less than 1 ha is to be presumed.

The surface find material corresponds to the developed Early Neolithic of the region. The vessel forms to be reconstructed from the ceramic fragments largely reflect



Fig. 169: Kalcsov I. Geomagnetic mapping of the area where Early Neolithic surface finds occur (Eastern Atlas, Berlin).

those from the Bucova Pusta IV. Nevertheless, among the decorated pottery fragments are some pieces with intersecting incised lines indicating a tendentially somewhat later date for the material in comparison to that of Bucova Pusta IV. In order to shed light upon the stratigraphic situation, a small-scale sondage was made. This was positioned

immediately south of a field path bisecting the site in an east-westerly direction, occupying an area of 5 × 5 m. It was first at a depth of 30–40 cm that finds unaffected by ploughing were encountered. In turn, the undisturbed contexts proved to be entirely Iron Age in date. Despite this, large amounts of Early Neolithic pottery (Starčevo-Criș) were to be found in secondary contexts. The distribution of the surface finds indicates that the centre of the Early Neolithic settlement must clearly be localised to the north of the trench excavated.

8.7. Bucova Pusta IV

The naming of this field somewhat halfway between Dudeștii Vechi and Sânnicolau Mare (north of the road connecting these two places) as Bucova Pusta stems from the Catholic Bulgarian settlers who settled in the Banat under Austrian rule in the first half of the 18th century. In contrast to the otherwise open landscape, a hornbeam forest stood here at the time of their arrival. Today, the hornbeam trees have completely vanished, and only individually isolated poplar trees line the way through the fields, these being the remains of a planting of an alley of trees still extant until recently. The microtopography of the landscape was permanently altered once again during the Socialist era by means of the establishment of a linear network of irrigation canals and paths within the fields. The rationale behind this was the collectivisation of agriculture under massive political pressure, and thereby also the agglomeration of previously privately cultivated land into large unified units.

The precise localisation of the hill upon the Bucova Pusta described by Kisléghi also originates from Kalcsov as no map is preserved within Kisléghi's records, and the site was not visited by any of the archaeologists consulting his information thereafter. As a result of modern agricultural activities, Bucova Pusta IV may only be observed as a modest rise within the relief of the terrain. This low hill lies 1.4 km north-east of the 'Bucova Pusta' sheep farm, immediately south of the meander of a desiccated former branch of the Ciganska Aranka (Fig. 170). Today, the stream flows some 1.5 km north-west of the site until it arrives north of Dudeștii Vechi, where it has been dammed into multiple fishing ponds. A kilometre south-west may be found the highest hill of the Bucova Pusta, Hunca Mare (or Bucova Pusta IX according to Kisléghi's notation). Administratively, the western part of the Bucova Pusta (upon which Hill IV also lies) already belongs to Sânnicolau Mare. Despite this, Bucova Pusta IV was erroneously entered into the archaeological find registers under Dudeștii Vechi (Luca 2006, 98–100), which stems from Lazarovici's assignment of it (Lazarovici 1979, 187). Lazarovici noted



Fig. 170: Bucova Pusta IV. Location of the site on the Google Earth satellite image (R. Krauß).

only tersely that Bucova Pusta IV could be found between Dudeștii Vechi, Sânnicolau Mare, and Cenad, a description doubtlessly applicable to the entire Pusta.

In 1904, Kisléghi investigated the hill itself with multiple sondage trenches within a quadratic expanse of 484 m². During these excavations, he encountered mediaeval graves sunk into the surface of an Early Neolithic settlement (Gáll, Ciubotariu, Tănase 2010, 85–98). As his central interest was in these graves, the evidence of the Neolithic settlement was merely noted in the diary, but no comprehensive documentation was undertaken there. According to his records, he must nevertheless have uncovered large portions of the Early Neolithic settlement. He was also able thereby to unearth entire vessels preserved today in the Museum of Banat. No further excavations occurred at this site in the wake of those of Kisléghi; Bucova Pusta was first revisited quite recently in conjunction with Ciobotaru's excavations at the Movila lui Deciov (Maillol, Ciobotaru, Moravetz 2004).

Various individual surfaces around the hill of Bucova Pusta IV with a total extent of c. 5.66 ha were geomagnetically prospected by the company Eastern Atlas in the years 2009, 2012, and 2013 (Fig. 171). Within the area of the hill itself, notable disturbances and anomalies can be found; these were caused by the backfilled trenches of Kisléghi's excavations. The chief structures of the site are well represented within the data. On the one hand, the actual hill may be recognised in concentrically organised positive anomalies. The centre of the tumulus is marked by overlaid strongly positive and negative anomalies which are probably derived



Fig. 171: Bucova Pusta IV. Geomagnetic mapping of the tumulus and the underlying Early Neolithic settlement. The numerous old river meanders between which the settlement was founded are clearly visible (Eastern Atlas, Berlin).

from the backfilling of the former excavations. Between these, positive anomalies might be recognised which can be interpreted as the remains of the Early Neolithic settlement. South of the tumulus, a weakly negative magnetic structure running from west-south-west to east-south-east could be found, continuing northwards within the satellite image as a bow-shaped discolouration in the ground. An arm of this structure branches off in a north-westerly direction at a fork south of the hill. These weak magnetic anomalies represent former river courses, although there need not necessarily be any temporal correlation between the archaeological site and these river channels. It is only in the case of the river meander running south of the hill through the midst of the archaeological structures that it might be assumed that it already existed before the establishment of the settlement. A further extinct arm of the river borders the settlement area to the north. This channel may still clearly be distinguished in both the landscape and satellite imagery alike as a linear depression in a wide bend. Within certain stretches west of the site, the presence of bushes and reeds evidently denote the former meander of this body of water. Final clarity as to the chronological context and succession of the individual river branches can nevertheless only be achieved by means of the dating of wood charcoal, plant remains, or artefacts from coring within the river sediments. Further traces of human settlement activities may be particularly evidenced north-east and south-west of the hill. Especially significant is an extended settlement area lying in the western sector of the site, enclosed to the east, north, and west by the meander of the middle of the three old branches of the Aranka. Small magnetic anomalies are also visible north of the Bucova Pusta IV all the way to the northern erstwhile channel, these denoting settlement pits. Despite this, the surface finds within this sector indicate settlement activities during the Late Bronze Age and Early Iron Age.

Accordingly, the Early Neolithic settlement seems to be organised into two areas of occupation on the old bend of a river. A larger part lies to the west within a meander in the river course, and a smaller portion to the east in the area of the hill of Bucova Pusta IV. To the south, the geomagnetically visible structures are linearly bordered by a further river course. Our preliminary interpretation is that this water body is younger and has eroded the settlement in this area.

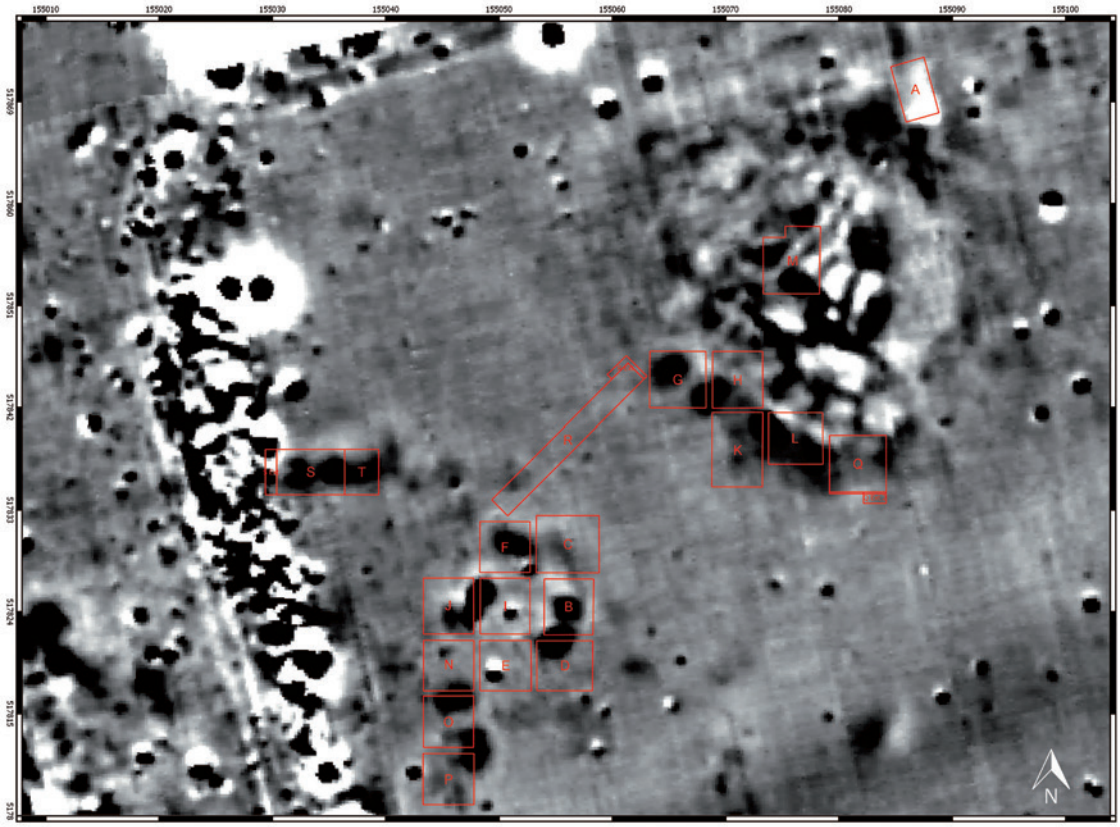


Fig. 172: Bucova Pusta IV. Position of all excavation trenches on the geomagnetic mapping (Eastern Atlas, Berlin, D. Matzig, R. Krauß).

The present author's excavations at Bucova Pusta IV began in summer 2010 with a preliminary campaign and were carried out regularly in summer campaigns from 2012 to 2015. The work was financed first by the University of Tübingen's programme for early-career researchers, and from 2012 onwards by the German Research Foundation. Several trenches named with letters from A to T with a total area of 458.59 m² were opened (Fig. 172). If possible, the features were emptied negatively and numbered within the sections. When necessary, larger features were broken down into artificial spits, each of which was then given its own report number. If required, intermediate plana and profiles were also created.

Among the most surprising discoveries was the one made while studying the stratigraphy of the hill; it was revealed that its formation was largely natural. While the Neolithic settlement had certainly contributed somewhat to the terrain's elevation, this had nevertheless occurred upon a pre-existing rise. The Medieval graves were thus simply sunk into a pre-existing hill.

Within the north-western quarter of Trench G, a strong anomaly within the geomagnetic mapping was excavated. This proved to contain the unusual feature of a single standing oven with dimensions of some 3.4 m in length and 2.8 m in width, oriented in a north-easterly to south-westerly direction (Fig. 173). The oven was entirely formed from earth in situ. First, a work-pit was excavated to the south-east within the loess lying there; from this, a hollow chamber was excavated sideways in the shape of a domed oven. The chamber created thereby was subsequently subjected to firing so as to harden it. The bottom of the oven is very even, and clear traces of the hollowing out of the floor by means of chisel-like, pointed instruments (possibly composed of wood) are identifiable in the walls and what remains of the dome. Within (but most significantly in front of) the oven, ash deposits riven with particles of wood charcoal could still be found. In addition to various ceramic fragments, the find material unearthed from the fill also contained animal bones, among these numerous bones from large fish and the shells of freshwater snails and mussels (Fig. 174). Large earthen ovens may already be attested from the emergence of the LBK in the Carpathian Basin. Free-standing ovens comparable to that from Bucova Pusta IV may also be found, for example, at Alsónyék-Bátaszék in southern Transdanubia



Fig. 173: Bucova Pusta IV. A large dugout earth oven (feature G 7/10) (Team Bucova Pusta IV).



Fig. 174: Bucova Pusta IV. A concentration of snail and mussel shells in front of the oven (feature G 7/10) (Team Bucova Pusta IV).



Fig. 175: Bucova Pusta IV. A freestanding earth oven (feature K 12) (Team Bucova Pusta IV).

(Bánffy, Marton, Osztás 2010, figs. 6–7). These features date to the late Starčevo period.

Another oven in Trench K presents a very good impression of its structure (Fig. 175). This oven was also negatively excavated from the natural soil. The formerly semi-circular dome has collapsed due to earth pressure, but still displays a chimney with a round cross-section in its upper part. This oven cannot be assigned to a house structure either. It is a free-standing structure outside the residential buildings.

Installed parallel to the oven in Trench G, a structure embedded into the ground similarly to the oven was also documented in the south-eastern part, extending into the south-western portion of Trench H (Figs. 176–177). An elongated hole was also initially dug, from which the work proceeded sideways within the standing earth. Nevertheless, the side-on hollowing out was not executed as far as to have formed a proper dome; instead, something more akin to a sheltered earthen hollow was produced. At its base, this feature appeared as kidney-shaped (Fig. 178). The feature also displayed no evidence of any prolonged firing, and the finds themselves intimated an alternate function. This structure is evidently too small to reflect a housing feature. The pit's fill was riddled with abundant settlement refuse, beneath which was found a complete vessel which had already been crumpled while in a leather-like state and thereafter fired until the clay had hardened entirely. This signifies a classic case of misfiring, attesting additionally to the production of pottery on site. The neighbouring oven potentially also served to produce ceramics, although the present author is hesitant to ascribe this as its primary function, inasmuch as scarce indications for this could be found in its surroundings and fill. Furthermore, the cone of a very large bullhorn was found in the pit between Trenches G and H. The form of the feature is reminiscent of a clay extraction pit subsequently filled with settlement refuse. Potentially the pit was also alternatively employed (for example as a storage pit) subsequent to its excavation but prior to its final filling. The highly cohesive loess-soil can be used not only as a building material, but also for the production of pottery vessels. Insofar, it is hardly surprising that an extraction pit might be found in a settlement context. Striking, most certainly, is the feature's kidney-like shape, indicating a specific form of use. Another reniform pit is known from Maroslele-Pana,[27] on the floor of which

27. Earlier, the site was known by the detailed spelling of the name Maroslele-Panahát. Since the monographic publication by Tibor Paluch, however, the short variant Maroslele-Pana has become established (Paluch 2011).



Fig. 176: Bucova Pusta IV. The uppermost filling of the subterranean feature G/H 10 with burned clay chunks and misfired ceramic vessels (Team Bucova Pusta IV).

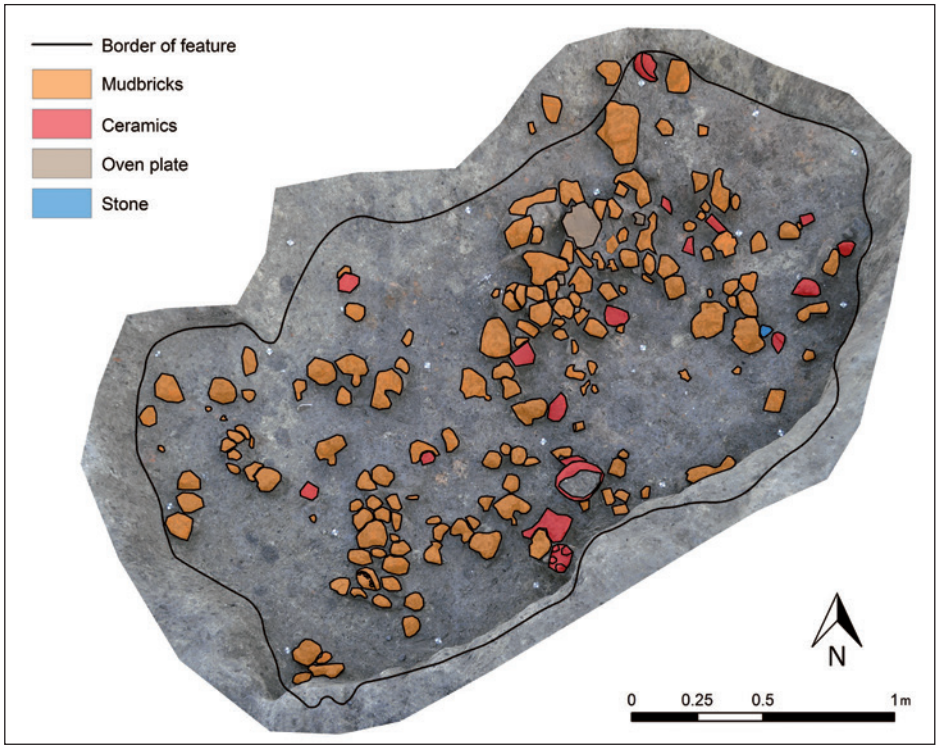


Fig. 177: Bucova Pusta IV. Redrawing of the uppermost layers in feature G/H 10 (D. Matzig).



Fig. 178: Bucova Pusta IV. The emptied feature G/H 10. A kidney-shaped subterranean feature, possibly for clay extraction (Team Bucova Pusta IV).

a pair of horns from an aurochs were additionally found (Paluch 2010, fig. 5). Although this feature may already be dated to the Middle Neolithic (Vinča A2–A3), a structural connection with the present find may be presumed. At only 25 km apart, the geographical distance between these two sites is minimal. Maroslele-Pana and Bucova Pusta IV lie on either side of the former confluence of the Mureș delta into the Tisza.

In the case of Trench S-T, a 6 × 4 m large trench was first created in the north-western part of the site. Its purpose was to examine structures appearing as large black shadows on the geomagnetic scan. At a depth of 60 cm, many Early Neolithic structures already appeared, continuing to the east. For this reason, the decision was made to extend this trench with another 5 × 5 m trench to the east, this new extension being dubbed Trench T. From a depth of 60 cm downwards, two larger settlement-structures sunk into sterile soil were documented (Fig. 179). The eastern of these turned out to be a pit-house containing two ovens (Fig. 180). These ovens were from the western wall dug into the surrounding natural grown soil. The northern example (S07) possessed a collapsed dome, and could only be documented in the field. The other (S06) was in a very good condition and had a chimney within the structure of its dome. This oven was block-lifted, and has been stored since in Dudeștii Vechi's museum for further examination under laboratory conditions. Another pit-house was found west of the first, this also possessing two ovens in its western part. In contrast to the others, these were not dug into the natural soil, but were instead erected as dome structures. In the trench's far west (west of the second pit-house), a north-southerly-orientated child-burial was excavated (Fig. 181). This comprised a westward-facing crouched burial placed above a deposit of over 60

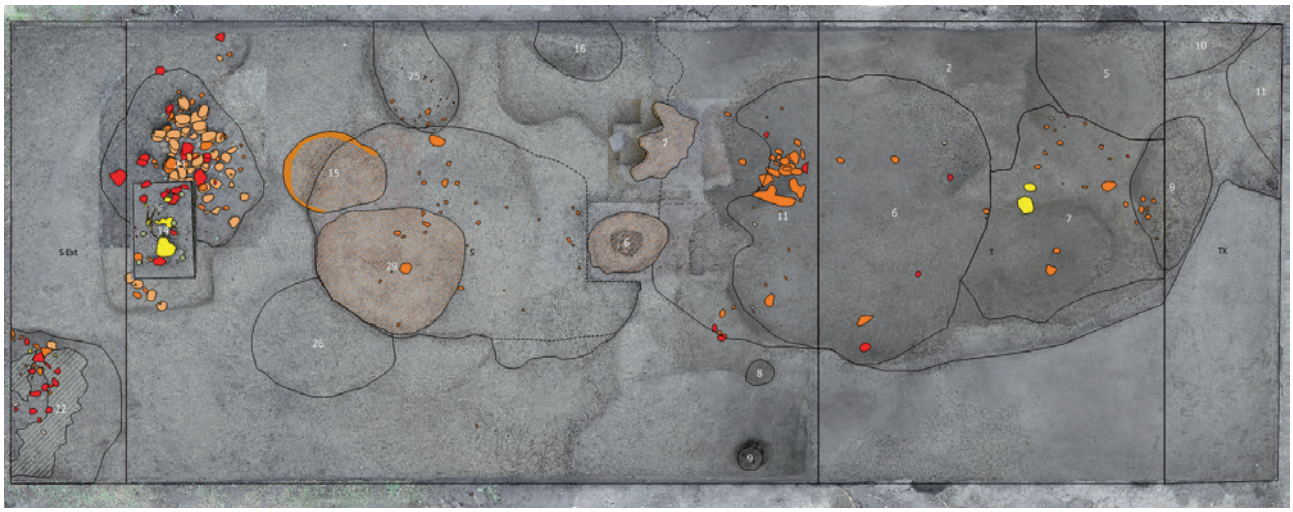


Fig. 179: Bucova Pusta IV. Settlement features in trenches S and T (D. Matzig).



Fig. 180: Bucova Pusta IV. Two ovens with chimneys in trench S (Team Bucova Pusta IV).

Early-Neolithic clay weights (Figs. 182–183). The sediment filling of the grave also contained only Early-Neolithic finds. Two samples were taken in order to perform a ^{14}C-dating. One sample was taken from the child's long bone (Poz-77263: 6700±50 BP) and another one from an animal bone (Poz-76963: 6665±35 BP) found in the burial's sediment filling. A combined calibration gives a date of 5657–5536 calBC in the 2-sigma range. After preliminary studies of the fieldwork, all of Trench S-T's features seem to date to the Early Neolithic.

The ceramic find material presently recovered already permits some statements to be made about the relative chronological placement of the site and the general character of the settlement. This largely comprises coarse wares



Fig. 181: Bucova Pusta IV. Early Neolithic child's burial in trench S above a collection of clay weights (feature S 24) (Team Bucova Pusta IV).

prepared from a clay mixture with many particles of crude organic temper. Whole remains of grain spelt are recognisable within the sherds' breaks; these must have either been added to the clay as remnants of the threshing process, or have indirectly entered the form's mixture by means of animal manure. Only a few vessels were made of a finer ware with only macroscopically visible organic temper particles. In many cases, the surface treatment presents a slip coating and careful smoothing, but no verifiable traces of burnishing. The plastic surface adornment occurs in many forms. These vary from simple incised and impressed decoration to plastic applications of cordons or floral motifs. Identifiable as a chronological marker are elongated vessel feet, which first occur in the developed Balkan Early Neolithic (Karanovo II/Ovcharovo-Gorata, Starčevo II–III) (Figs. 184–185). Remains of painting could be evidenced on two bulbous bowls on slightly offset bases. In both cases, these comprise of a broadly applied wave or zigzag band wound around the vessel body. The original colouration of the paint daubed must clearly have been more striking, as the marked encrustation of the vessel surface hardly permits recognition of the painting traces against the equally faint clay background. The painted motifs may be effortlessly ascribed to Garašanin's horizon of Starčevo III (Garašanin 1998). The undulations and dimples in the mouth represent an archaic detail of adornment. Within the southern and eastern Balkans, comparable plastic modelling of vessel lips may only be found in the earliest phase of the Neolithic (Proto-Starčevo, Pre-Karanovo I). Nevertheless, this manner of adornment may be evidenced for the entire Early Neolithic within the Banat.

In structural terms, the region of the Banat seems not to have received any further impetus from the southern regions following the actual neolithisation, and most certainly not from Anatolian or Aegean quarters. A resultant repercussion is that the general tendencies within the ceramic trajectory which might be noted (such as the heightening of the vessel feet or other fashions identifiable within the Balkans,



Fig. 182: Bucova Pusta IV. The concentration of clay weights under the child's burial (feature S 24) (Team Bucova Pusta IV).



Fig. 183: Bucova Pusta IV. Overview of the cleaned clay weights from feature S 24 IV (R. Krauß).

such as the complex development of painted pottery and, ultimately, also the development of channelled decoration) are all unattested there. Conversely, the time-honoured method of adorning the mouths of vessels with dimples continues in this region. The character of the vessel pottery here also seems to be limited to functionality, should the almost complete absence of representative fine ceramics be considered. The vessel forms reflect a household spectrum of drinking, eating, and storage crockery. Only a few forms such as miniature vessels and fragments of small four-footed tables (Fig. 186) hint at the realms of representation or ritual. Moreover, with only a few anthropomorphic and animal figures, the proportion of figurines is far too low for an Early Neolithic settlement in comparison to the usual find occurrences (Fig. 187). The activities which might be inferred from this are largely confined to the economic sphere within the ecotope between river, woodland, open landscape, and the domestic sphere in the restricted sense.

Striking within the settlement features are multiple large clay weights of varying forms which may well have served as construction elements within structures or as weights. The necessity to fashion these weights is already evident in the fact that the broad loess plains south of the Mureș do not evidence any naturally transported stone at all; even simple weights had to be formed from the standing loess soil. The clay weights may be roughly divided into three categories: trifoliate, cylindrical with finger impressions, and conical (Fig. 188). The latter possess the form of classic loom weights. While visiting the Tübingen excavations during the summer of 2013, a Bulgarian colleague, Kalin Dimitrov, provided an interesting interpretation of the former two categories: the large and strongly profiled weights would be well-suited to weighing down nets, although they would swiftly become bogged down in the morass of slow-flowing waters. For the capturing of large fish (the vertebrae of which were encountered here in vast quantities), rod angling would regardless have been employed over net fishing. Dimitrov considers the objects' forms to be ideal weights for fishing, whose organically-fashioned hooks must have been held just above the waters' bed.

The striking lack of stone is further evident in the tools. The silex artefacts encountered upon Bucova Pusta IV over the course of three field campaigns (Fig. 189) are far too few in comparison to the quantities found in other settlements of the South-eastern European Early Neolithic. As, in turn, no knapping waste has currently been found within the settlement, but instead only finished stone working products, an external production might be assumed. A broad exchange network can be reconstructed by means of the localisation of stone deposits. For example, the nearest deposit for obsidian is first to be found in the northern arc of the Carpathians, in southern Slovakia and the region of Tokaj. In the vast majority of cases, the flint tools are also heavily worn down, in some cases to the very exhaustion of the material. This indicates the economic use of these very few available blades until thoroughly worn out.

We have so far been able to recover several stone axes in different size classes, and fragments of ground stone tools (Fig. 190). Strikingly, all of the pieces were manufactured from precisely the same raw material, a very thick, white-grey limestone. It is also noteworthy here that only two whole pieces with little in the way of traces from work were found. All others were used until they were utterly worn out.

The results from excavations hitherto permit the following preliminary observations on the settlement structure of Bucova Pusta IV: the character of the settlement was determined by its placement within a complex system of currently dried-up tributaries of the Mureș. The settlement was evidently placed on the opposite bank of a watercourse, the resources of which were fundamental to the settlement's economy. With the alteration of the river course and the desiccation of the channel passing through the settlement, its most crucial locational factor also evaporated, this likely explaining the brief period of occupation at the site. It is most probable that the settlement was merely relocated within this small area. Many potential sites have been identified which might represent its preceding or, indeed, succeeding settlements. Somewhat earlier, for example, is the settlement on the Movila lui Deciov, while that at Kalcsov I is probably a little later. The structure of the settlement displays a larger region to the west following the loop of the former river course, and has currently only been excavated at its easternmost extreme, together with a smaller settlement area in the vicinity of the actual mound of Bucova Pusta IV. The realisation that this elevation is probably of natural origin considerably alters perspectives on the microtopography of the site in the Neolithic. Previously, it had been assumed that the elevation postdated the Neolithic. Accordingly, the question now presents itself as to what function this elevated area had within the settlement as a whole. The features currently unearthed at the foot of the low rise and on the bank of the former waterway indicate the site's economic function. Preliminary observations of the animal bone material and plant remains evidence a high proportion of cattle among the domesticated animals, and a prominent role for hunting. Already in the Early Neolithic settlements of the southern Banat, the predominance of cattle among domesticated animals is remarkable, as may also be noted at the settlements of

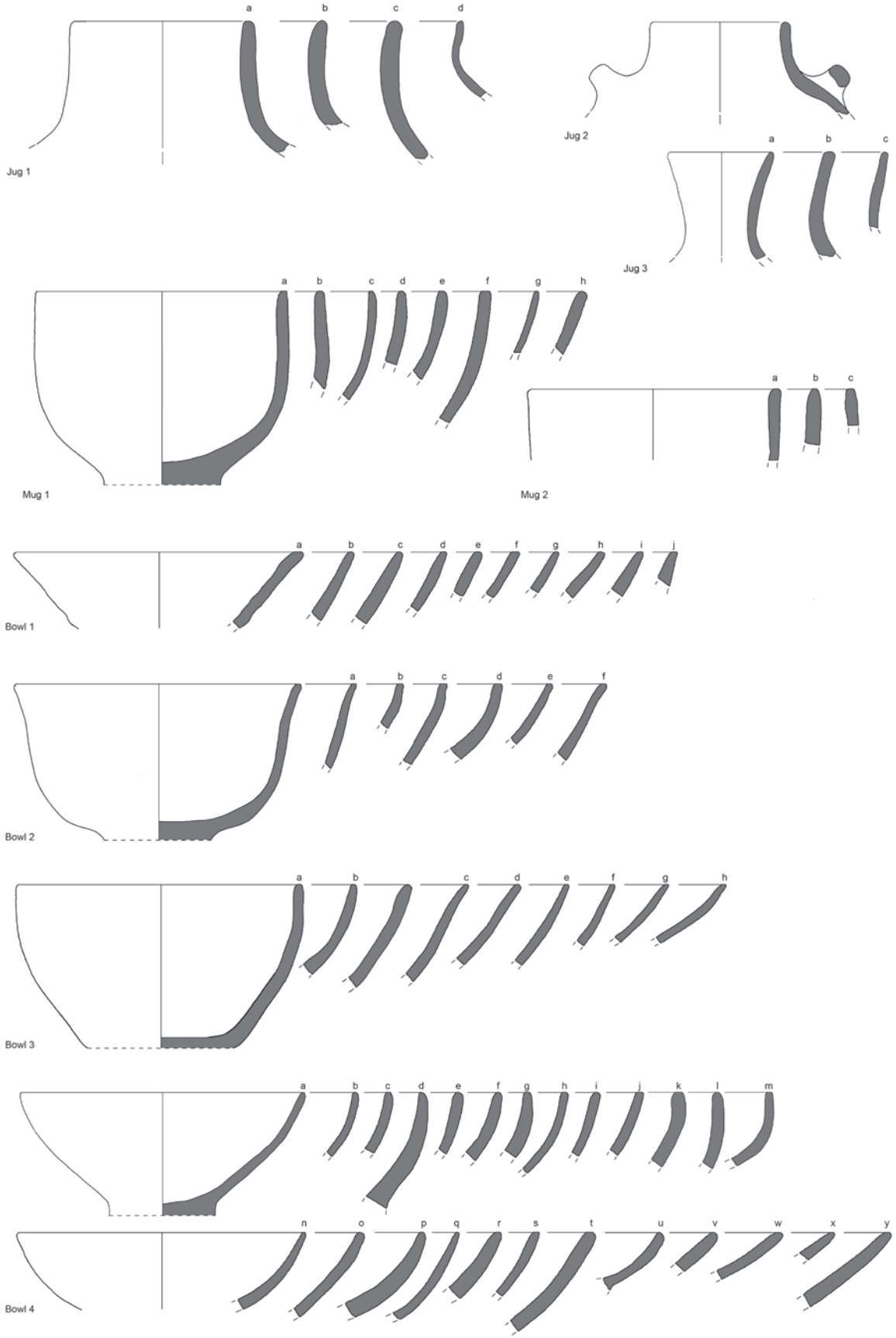


Fig. 184: Bucova Pusta IV. Typology of Early Neolithic jugs, mugs and bowls (R. Krauß).

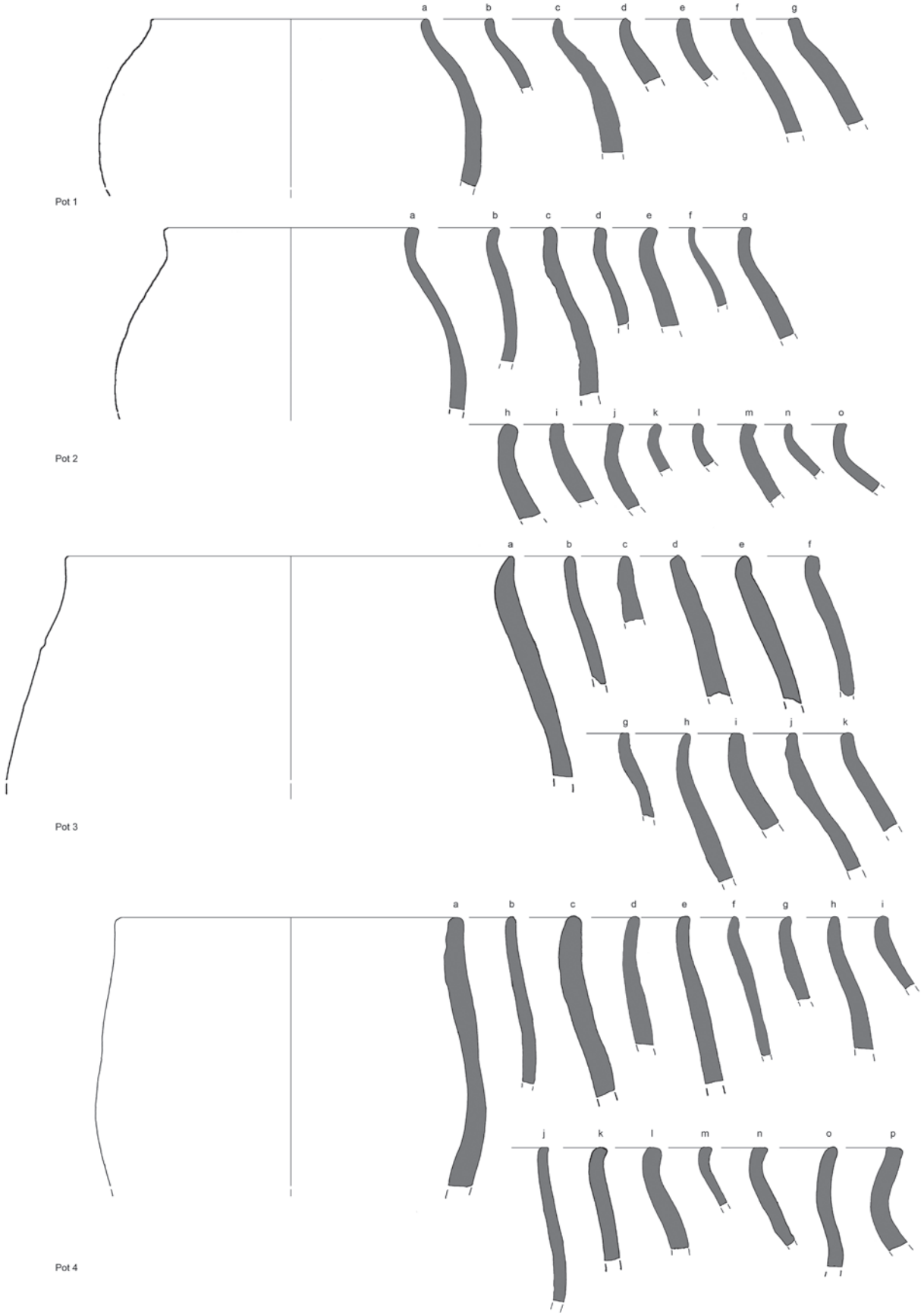


Fig. 185: Bucova Pusta IV. Typology of Early Neolithic pots (R. Krauß).

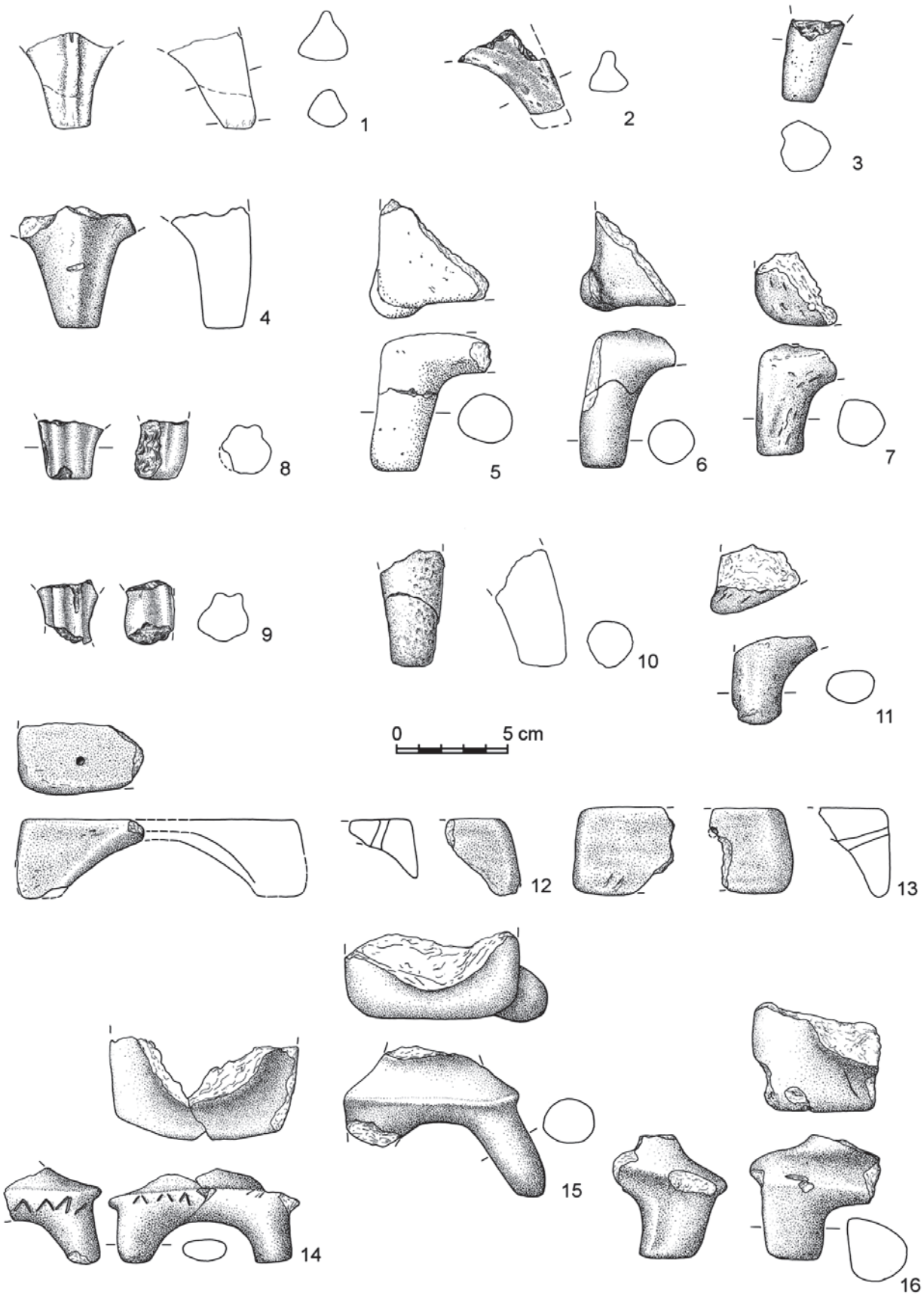


Fig. 186: Bucova Pusta IV. Examples of four-legged miniature tables (drawings: M. Möck, A. Frey, O. Blum).

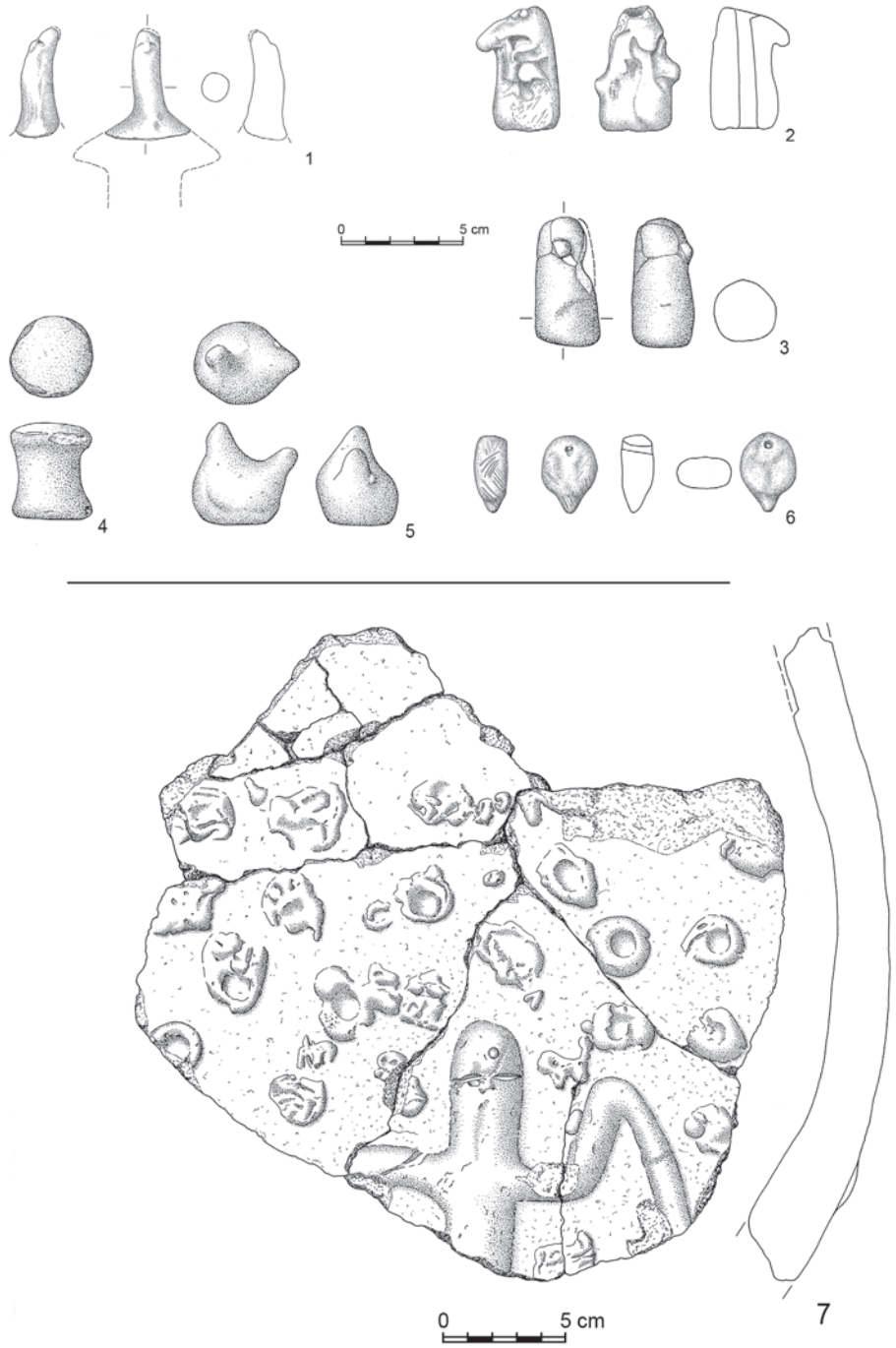


Fig. 187: Bucova Pusta IV. Examples of anthropomorphic and animal figurines (drawings: M. Möck, A. Frey, O. Blum).

Gornea-Locurile Lungi, Moldova Veche-Rât, and Pojejena-Nucet (El Susi 1996, 146–147). Despite this, fishing and the exploitation of further aquatic resources assume centre stage, as is borne out by the massed heaps of mussel and snail shells within the settlement. The scientific dating of the finds on both banks of the former water channel will elucidate the chronological relationship of the two settlement areas with each other, insofar as this is permitted by the resolution of the ^{14}C dates and their projection upon the tolerance span of the calibration curve.

The problem of the absolute dating of Bucova Pusta IV has thus been addressed. The relative date of the Early Neolithic settlement is very well supported by a series of sixteen radiocarbon dates. The data obtained from

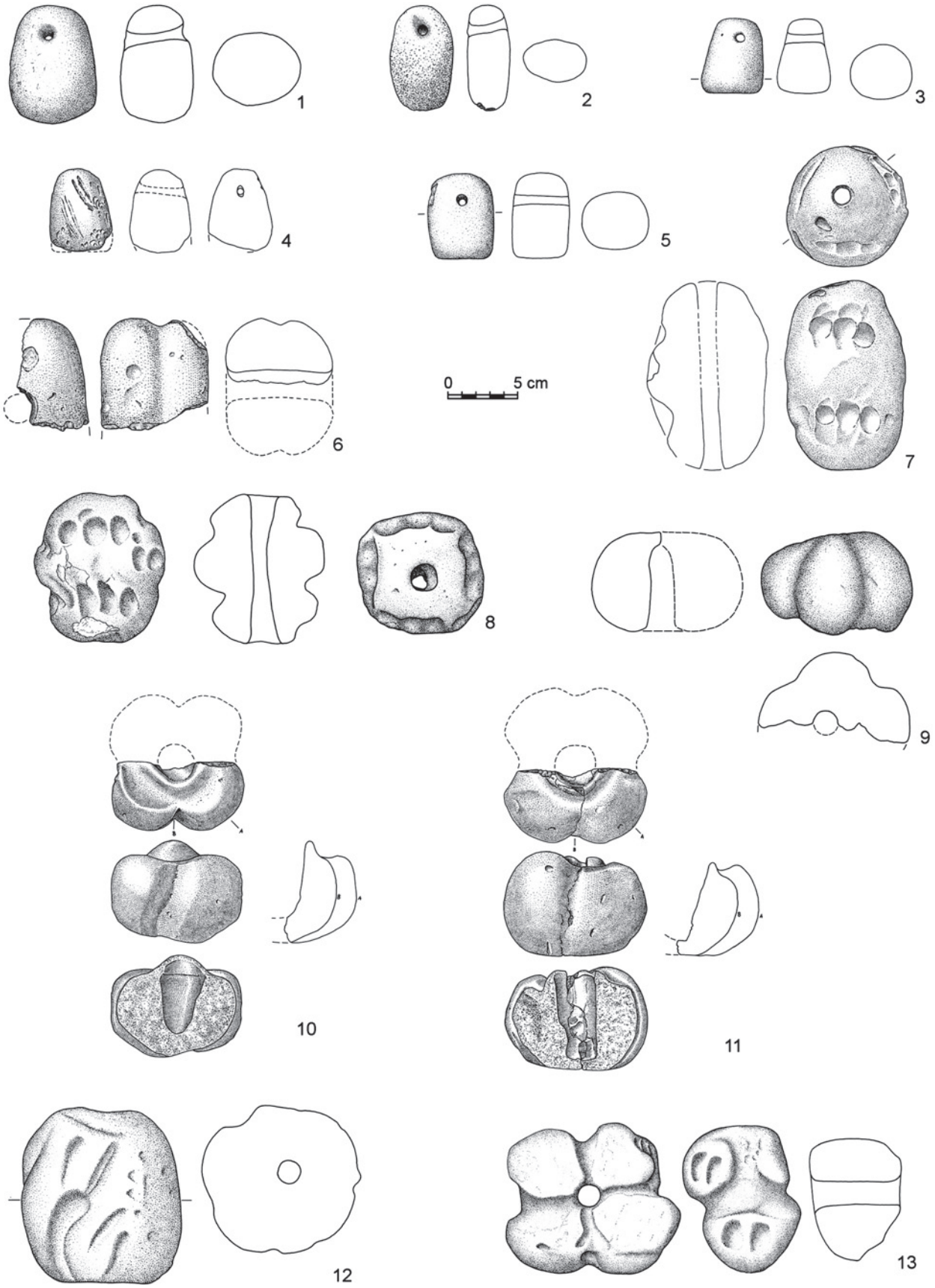


Fig. 188: Bucova Pusta IV. Examples of clay weights (drawings: M. Möck, A. Frey, O. Blum).

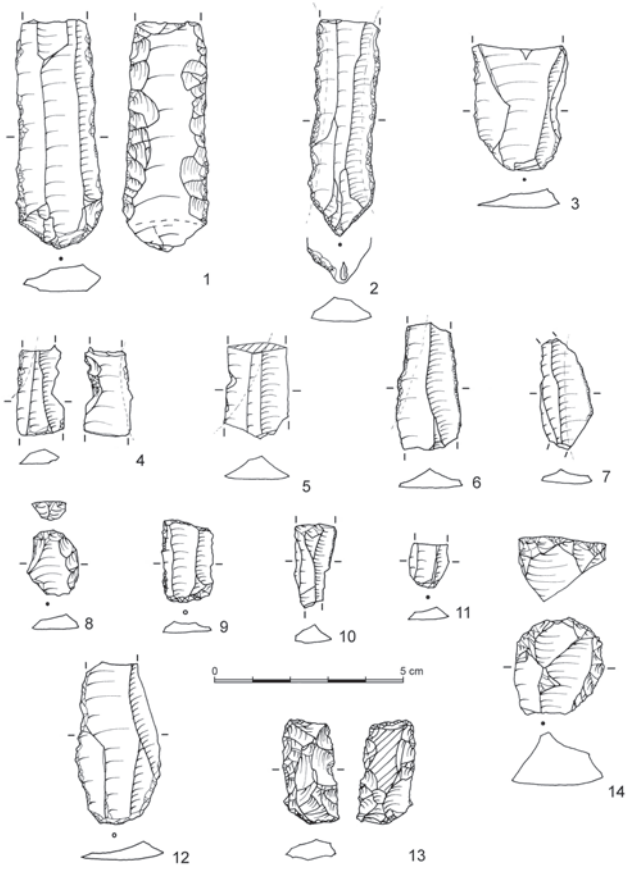


Fig. 189: Bucova Pusta IV. Chipped stone artefacts (drawings: M. Möck, A. Frey, O. Blum).

three charcoal samples displays a characteristic old wood effect. Taking the value of the most recent charcoal date (Poz-51356: 6890±40 BP), the foundation of the site would have taken place after 5780 calBC. The value of the oldest short-lived sample (seeds: Poz-88722: 6840±40) from the same context provides a terminus ante quem of 5720 calBC. Calculated conservatively (if a very short period of a maximum of ten years after the charcoal date and ten years before the oldest short-lived sample is assumed), then the date of the foundation of the settlement can be assumed to be 5750±20 calBC. Supposing that the infant grave in Trench S was dug at the very end of the occupation, then settlement concluded at around 5590 ±20 calBC.

8.8. Superregional Comparison of the Vessel Ceramics from the Northern Banat

The find material from Foeni Sălaş is overwhelmingly composed of red-slipped monochrome pottery, although two fragments of white-painted pottery were also found (Drașovean 2007, fig. 5). Two ceramic wares might be fundamentally distinguished from each other: a heavily organically tempered coarse ware which is always slipped, and a deep black fine ceramic without macroscopically visible organic inclusions respectively. The form spectrum includes wide bowls with undulating rims, and globular pots with narrow mouths and tall, elongated, hollow vessel feet.[28] Decorations encompass crude impressions, finger-grooved barbotines, and vertically-running impressions in the form of wheat ears. The site may be ascribed to the phase of Starčevo-Criș IIa on the strength of the ceramic material.[29]

To be evaluated similarly is the material from Foeni Gaz. The heavily organic tempering of the coarse pottery and the red slip are conspicuous features once more. The fine ceramics have a grey, finely burnished surface, and demonstrate a deep black colour when broken (albeit without visible organic inclusions). Occasionally, a very fine brown slip coating can also be observed upon the fine pottery. On account of applied warts on the coarse pottery, massive feet, and very slightly out-turned lips among the otherwise globularly shaped forms of the fine ceramics, an earlier chronological ascription of this material to a period still anterior to Foeni Sălaş is conceivable.

The 1.80 m deep cultural deposits of the Movila lui Deciov may be ascribed to two consecutive phases of settlement. Monochrome vessels akin to those from Foeni Sălaş may be found from within the earlier settlement, although bowls with cross-shaped bases are also attested. The material from the later level can hardly be distinguished typologically from that preceding it. As common as before are undulating rims among the bowls and plastic adornments of the vessel surface with impressions, knobs, studs, and applied cordons. In addition to the types with massive feet, we now also encounter small-footed vessels and tall, elongated stand-rings. Incised decorations from lines transecting one another on globular bowls are first evidenced in the later level.

The roughly 4 m-deep stratigraphy of the mound of Parța II consists of an earlier Starčevo-period occupation and an overlying Vinča C settlement (Lazarovici, Drașovean, Maxim 2001, 58–59). Furthermore, finds from the Late

28. Cf. Spataro 2004, figs. 2–6; further finds may be viewed at the Museum of Banat.

29. In his latest chronological scheme, Lazarovici already places Foeni Salaş in his Level Ib (Lazarovici 2006, fig. 20) which is evidently connected to two ^{14}C dates which have been published (Biagi, Spataro 2004, tab. 1. – Spataro 2006, tab. 2); these make the site seem older (GrN-28454: 7080±50 BP; GrN-28455: 7510±60 BP).

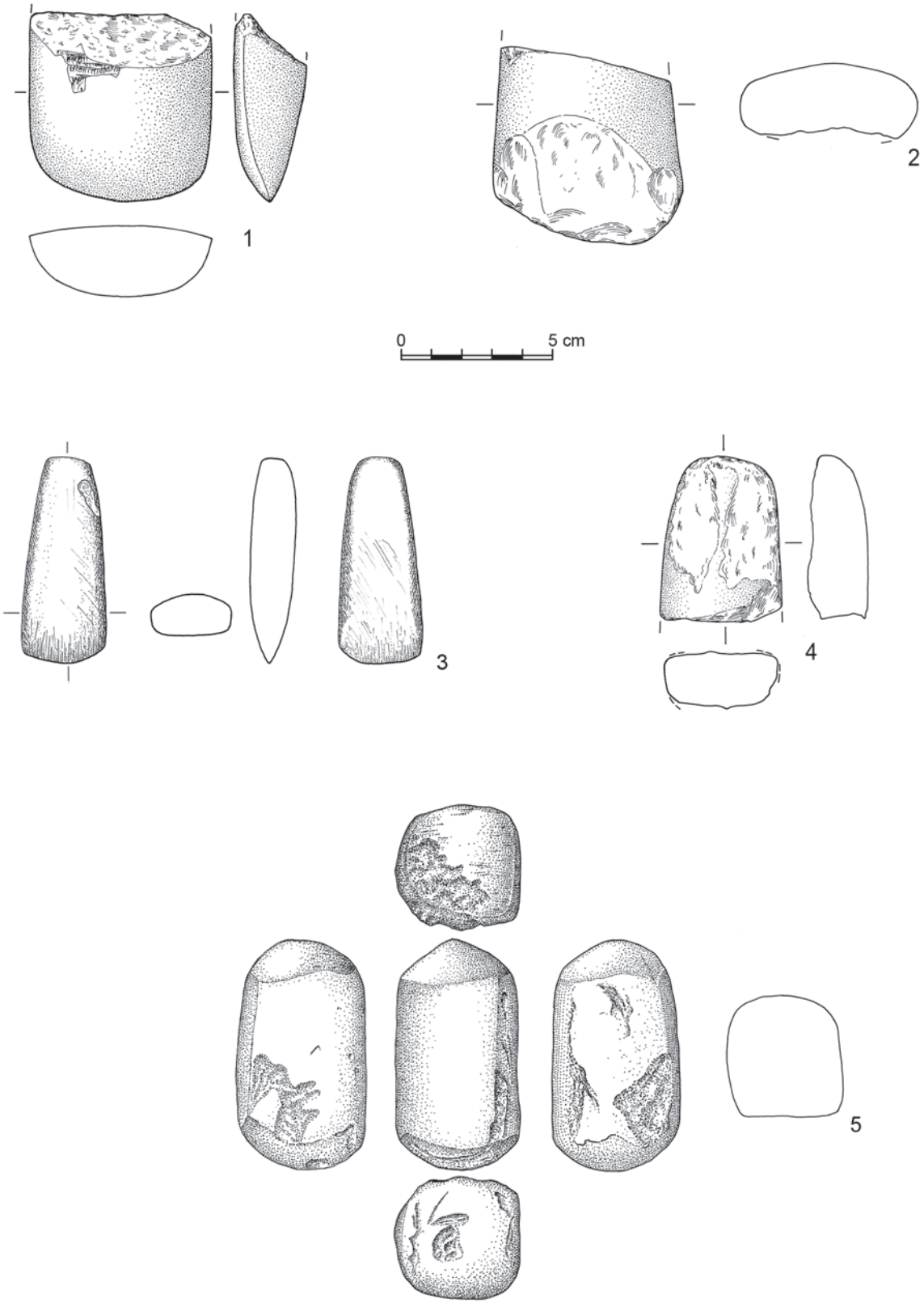


Fig. 190: Bucova Pusta IV. Polished stone tools (drawings: M. Möck, A. Frey, O. Blum).

Neolithic Foeni-Petreşti group have been discovered in the environs of the mound (Luca 2006, 192). To be found within the vessel spectrum are globular pots on massive feet or simply flattened bases with straight or slightly out-turned lips. A dark painting on a red or brown clay background is characteristic. Among the painted motifs may be found linear meanders stacked upon one another and simple line motifs, both of which have prompted an ascription to the phase of Starčevo-Criş IIb (Lazarovici 2006, fig. 20. – cf. Lazarovici 1979, pl. V). Some of the pot forms with markedly offset straight rims, the occurrence of tall vessel feet, and (most noticeably) the numerous fragments with rough impressed decorations all suggest a later chronological ascription, approximately to Phase IIIa or perhaps even to Phase IIIb (Lazarovici 1979, pls. VI–VII). In the present author's mind, this attribution is supported by the fact that the Criş finds from Parţa (Tell II) display similarities with the finds from Ovcharovo-Gorata in precisely those elements which are otherwise only characteristic of the phase of Starčevo-Criş IIIb. Insofar, it would appear that the material from Parţa stands in close proximity to the finds from Ostrovul Golu II and Cuina Turcului III (cf. Lazarovici 1979, pl. VII).

8.9. Transylvania

Decisive in the identification of a "Pre-Criş culture" within the Carpathian Early Neolithic were Paul's excavations in the fields of Triguri near Ocna Sibiului, where he could evidence some six different settlement layers; each of his three phases was assigned two of these layers respectively (Paul 1989). Phases I and II represent levels of the "Pre-Criş culture", while the final phase, Phase III, may be synchronised with the second settlement horizon of the Gura Baciului. Only a few finds from the form spectrum of Phases I and II have been individually published. Regardless, overall, it would also seem that hardly any development may be detected within these two phases. The ceramic inventory is simple, half-spherical bowls and globular bowls with straight or slightly out-turned lips, and forms with short, tapering necks (Ciută 2005, pl. XLVII). The stands are simply flattened, or form very low stand-rings. While globular forms with straight or slightly out-turned lips predominate during Phase I, these decrease in Phase II in favour of S-profiled types (Ciută 2005, pl. XLVIII). In particular, the decorations on the coarse vessels with undulating rims, multiple vertically superimposed kidney bosses and long tunnel loops are highly reminiscent of the material from Dzhulyunitsa I to II and are thus to be assigned to the period prior to Karanovo I (cf. Ciută 2005, pls. XXXV/3–4; XXXVII). Already from Phase I onwards, white painting on a red-slipped background is evidenced on the fine ceramics (cf. Ciută 2005, pls. XXIX; XXX/1–5; XXXI/3–5; XXXII/6–7). The painted motifs consist of simple spots, hatched areas, and parallel vertically running waved lines. During Phase III, painting is no longer attested. By means of contrast, the coarse pottery vessels are frequently plastically adorned. Evidenced are perforated and incised patterns, plastic cordons, and finger-impressed barbotines (cf. Ciută 2005, pls. LV–LIX). Carinated bowls and very tall cylindrical foot-stands now occur within the form repertoire.

The excavation of the multiphase site at Cluj-Gura Baciului began under Nicolae Vlassa in the 1960s and swift publication ensued (Vlassa 1966. – Vlassa 1972). From 1986 onwards, excavation was resumed under the direction of Lazarovici, and published in monograph at the work's conclusion (Lazarovici, Maxim 1995). The stratigraphy reflects the entirety of the Criş trajectory in Transylvania. While the three-phase development originally envisaged by Vlassa is heavily informed by observations made from the levels of a settlement area (Vlassa 1972, 176–179), Lazarovici distributes the material between his four Criş stages (each with multiple subphases), inasmuch as he draws together various individual features which are not clearly associated with one another (Lazarovici, Maxim 1995, 53–61). Hence, this consists of a synthesis of stratigraphic observations and the typological comparison of the find material with other sites. Regarded in its entirety, the articulation nevertheless appears plausible as Lazarovici works by means of a highly interconnected system, which he was able to develop by means of numerous stratigraphic observations, particularly within the Romanian Banat. Yet, his articulation of the form trajectory for the Gura Baciului more strictly comprises a periodisation by means of formal comparisons than a stratigraphically secured sequence of finds. Characteristic of his Phase I (a–c) are bulbous vessel forms on simple, flattened stands or only slightly protruding stand-rings with a very slightly out-turned lip, and globular vessels with a narrowed neck (cf. Lazarovici, Maxim 1995, figs. 39–40, 41/2–4). Some of these forms bear pierced lugs on their bodies. Fragments with white painting on red- to red-brown-slipped background may already be encountered among the earliest ceramics (cf. Lazarovici, Maxim 1995, colour pls. I–III). Painted motifs consist of simple spots forming wide bands and lines either parallel or crossing over one another. In comparison to those of the preceding phase, hardly any changes may be detected in the vessel forms of Phase II (a–b) which follow. Nevertheless, a much broader range of adornments is evident. Impressed and incised decoration together with the excision of vessel lips and feet may now be registered (Lazarovici, Maxim 1995, figs. 42–43). In terms of painting, dark colours are now also realised upon lighter-painted backgrounds, although the tradition of white

painting upon a red background continues (cf. Lazarovici, Maxim 1995, colour pls. VII–IX). Mainly line and parallel angle motifs are painted on using a dark colour, while bands of dots and lines are still applied using white. In Phase III (a–b), new forms occur such as expansive bowls with straight walls, tall, bulbous pots, and extremely low-set carinated bowls (cf. Lazarovici, Maxim 1995, figs. 44–45). In addition to flat feet, high stand-rings and small-footed vessels are present. Finger-grooved barbotine now joins the other methods of surface decoration. Vessel painting with dark pigment is now only rarely attested (cf. Lazarovici, Maxim 1995, colour pl. X/1). During Phase IV, the elongated pots already known from the previous phase now become characteristic (cf. Lazarovici, Maxim 1995, fig. 48). Some globular pots display a markedly offset lip (cf. Lazarovici, Maxim 1995, fig. 49/1–2). Vessel painting has now entirely disappeared in favour of plastic decorative styles. In addition to finger-grooved barbotines, incisions, and plastic applications, forms with flaring and waved, out-swung lips, and pots with applied warts may be encountered (cf. Lazarovici, Maxim 1995, figs. 46/2–3, 5–6; 47/2, 7; 49/1–2; 50/2).

The material from Phases Ic–IIa at Gura Baciului may also be associated with the finds from Șeușa-La Cărarea Morii near Alba Iulia (Ciută 2000). The appearance of numerous globular forms with markedly offset cylindrical necks, and fragments with impressed decoration would, however, also permit a parallelisation with Phase III or even IV (Ciută 2000, figs. 13, 16, 20. – cf. Lazarovici, Maxim 1995, figs. 44–45, 49). In turn, the Criș finds from the cave of Cauce near Cerișor in the Județ Hunedoara may be deemed contemporaneous (Luca, Roman, Diaconescu 2004, 44–45 and pls. XII–XIV; XV/1–2, 4–9; XVI–XVIII; XIX/1–2, 5). Yet, the presence here of numerous fragments with impressed decoration, the appearance of finger-structured barbotines, and a large bowl with an offset funnel rim is more indicative of a later chronological placement (Luca, Roman, Diaconescu 2004, pls. XII/1–8; XIII/1–4; XIV/4; XV/1–2, 6, 9. – cf. Lazarovici 1984, figs. 5, 8). The Early Neolithic find material of southern and northern Transylvania is no longer directly comparable to that of Ovcharovo-Gorata and Dzhulyunitsa IV. As a result of the occurrence of excised rims and feet and, moreover, impressed and incised decoration, the later Criș phases must be considered as chronologically parallel. Very general typological similarities may be found in the elongated stand-rings and some of the vessels from Gura Baciului IIIb to IVb reminiscent of the beaker and pot types B3a, T1a, T2a, and T2c from Ovcharovo-Gorata (cf. Chapter 7.4, Figs. 119–123). However, within this wide range, the vessel painting with a dark colour suggests an affinity with the older phase Gura Baciului IIIb.

The late Criș development which might best be associated with Ovcharovo-Gorata may be followed effectively in the material from Leț (Zaharia 1962). Wedged between the eastern and southern Carpathians, the site furthermore borders on the north-western Bulgarian sphere. To be parallelised with Gura Baciului III, the Phase Leț I displays half-spherical bowls and low-set carinated bowls with massive feet or slightly raised stand-rings, expansive bowls with straight walls on high cylindrical or cruciform feet, and globular vessels with conically tapering necks (cf. Zaharia 1962, figs. 4; 7/1–8; 14/17–24). Some fragments are also preserved with a dark, linear painting on a lighter-slipped background (cf. Zaharia 1962, fig. 10/1–5). During Leț II, carinated forms with a tall, conical upper part, and slightly S-profiled pots and bowls appear (cf. Zaharia 1962, fig. 5). Directly comparable with Ovcharovo-Gorata are a few massive, tall vessel feet with a negatively recessed cross motif in the base (cf. Zaharia 1962, fig. 8/3–4, 7). In turn, an incised decoration consisting of parallel vertically running zigzag lines appears (cf. Zaharia 1962, fig. 5/1–2, 15), which also occurs in Ovcharovo-Gorata and, moreover, is also characteristic of the Criș groups in Moldavia. In addition to the dark painting, the white paint on a red-brown background is still attested (Zaharia 1962, figs. 10/6–13; 11). In contrast to the early Criș phase, the painted motifs are either purely linear or feature entire surfaces coated in paint. The ceramic forms of the phase of Leț III thereafter increasingly display softer profiling, with a continuation of the earlier types (cf. Zaharia 1962, fig. 6). The vessel painting is linear as before, although a trend towards broader lines is recognisable (cf. Zaharia 1962, fig. 12). Particularly frequent are meander motifs stacked within one another and hanging triangles. In sum, the form repertoire from Leț is very much comparable to Ovcharovo-Gorata, although the greatest overlaps are to be found in Leț II's spectrum of types and decorations, a phase which might be located between the phases of Gura Baciului IIIb and IVa within Transylvania (cf. Lazarovici, Maxim 1995, 5. – Lazarovici 2006, fig. 20). To these might be added further finds from Turia-La Silozuri, which display a decorative technique consisting of patterns of notched cordons as known from Ovcharovo-Gorata (cf. Ciută 2000, pls. XI–XII; XV/2) in addition to those forms already known from Leț II.

8.10. Dynamics of Neolithisation in the Carpathian Basin

The Carpathian Basin most likely also received the impetus for neolithisation from the regions bordering to the south. It is astonishing how quickly the first wave of the neolithisation had already encompassed the entire South-eastern European sphere by 6000 calBC. The Rapid Climate Change (RCC) 8.2 ka event (Weninger et al. 2005) can be considered the

terminus post quem for the spread of the Neolithic into the Carpathian Basin. During this cold and dry phase, it was difficult to venture into these areas in the interior of the continent with a way of life based on agriculture and animal husbandry. At the peak of the event between c. 6200 and 6000 calBC, when the North Atlantic Ocean Current was probably deflected by the Hudson Bay outflow in present-day Canada, temperatures in Europe dropped again and aridity intensified. A leitmotif of this first wave is white-on-red painted pottery which, beginning in western Anatolia, disperses in leaps and bounds across the entire Balkans all the way to Transylvania. The speed of the dispersal cannot be measured with current dating methods. Statistically, all the dates of the complexes with the earliest pottery appear to be of the same age. Although a find horizon prior to the white-on-red painting (Dzhulyunitsa I) is stratigraphically tangible in the eastern Balkans, this cannot be distinguished from the general dispersal phenomenon on the strength of the ^{14}C dates' resolution. In the Carpathian Basin, this first wave of neolithisation had already encompassed the entirety of Transylvania and the Criș region in the southern Great Hungarian Plain. The sites of Gura Baciului, Szarvas-Egyházföld, and Endrőd roughly mark the northernmost limit of this wave, where the expansion would come to a halt. In the west, this further reaches the southern Bačka at the sites of Donja Branjevina, Magareći Mlin, Ludaš-Budžak, and Nosa-Biserna Obala. Although the flatlands of the Banat did not initially number among the preferred settlement landscapes of the first farmers, the find of white-on-red sherds within the settlement of Foeni Sălaș (Drașovean 2007, fig. 5) nevertheless attests to the further arrival of this first wave of neolithisation to this region. Remarkably, the early sites with characteristic white-on-red painted pottery north of the Danube are rare, and almost all lie within large river valleys (for example those of the Olt and the Criș), or in the broad plains of the lower Tisza. Hence, the neolithisation of the Carpathian Basin appears to have followed two main routes: on the one hand, via the corridor of the large river systems of the lower and middle Danube and the Tisza, and, on the other, by means of the passage of the Olt through the southern arc of the Carpathians, initially to Transylvania, and from thence by way of the small river channels feeding into the Tisza to the west into the Banat. The loosely scattered sites with white-on-red painted pottery must certainly still be directly connected with the regions south of the Danube which had been neolithised very early on. Should the model of "leapfrog colonisation" be applied to the Carpathian Basin (Zvelebil 2001, 2), then these sites could be considered the bridgehead for the neolithisation of the region. Also in this case, the impetus for the neolithisation was initially prompted by the immigration of small groups, which then transmitted the Neolithic package to an already resident (Mesolithic) population soon afterwards.

It is only in a second stage from 5800 calBC onwards that sites also become denser in the low-lying regions of the Banat, and the neolithisation encompasses further regions of the Great Hungarian Plain and, moreover, southern Transdanubia. All of the sites in the flatlands of the Banat here investigated belong to this chronological segment. The find material of this period is characterised by overwhelmingly plastic methods of ceramic decoration and vessels with tall, elongated feet. The path taken by this second wave of neolithisation nevertheless appears to have run a somewhat different course to that of the first wave: it may be sketched from the distribution of silex blades fashioned from yellow "Balkan" flint with white speckled inclusions from the Early Neolithic settlements of this period (Kaczanowska, Kozłowski 2008, fig. 5). Recently, a deposit on the lower Danube at Nikopol has been discussed as a possible source for this variety of stone (Biagi, Starnini 2010, 124–131). This raw material seems initially also to have travelled from the eastern Balkans into the Carpathian Basin via exchange along the great rivers such as the southern Morava, the Lower Danube, and the Tisza (Fig. 191). In contrast to the dispersal of the white-on-red painted pottery, however, there is no longer a higher concentration of sites in the zone south of the Danube. Some sites also clearly lie away from the great rivers, and are distributed well into the north of the Carpathian Basin. The image provided by the archaeological record becomes denser still if some northern Bulgarian find sites and the discovery of a blade fragment from Bucova Pusta IV (most likely also fashioned from this flint type) are considered in addition to this new stone source.

8.11. The Central European-Balkan Agro-Ecological Barrier

The line marking the farthest limits of this wave of neolithisation is telling, as this also represents the northernmost extension of the Neolithic lifestyle for the ensuing 500 years. It is only following 5500 calBC that the first communities practising agriculture and husbandry appear in the regions north of this border, along with (western) LBK and (eastern) Alföld-LBK. The northern limit of the dispersal of the Starčevo-Criș-Körös complex runs irregularly from west to east, transecting Transdanubia and the Great Hungarian Plains, and has been introduced as the Central European-Balkan Agro-Ecological Barrier (CEB AEB) model within academic literature (Kertész, Sümegi 2001. – Sümegi, Kertész, Hertelendi 2002. – Kertész 2002). The model is based upon the distribution of Late Mesolithic and Early Neolithic communities in the Carpathian



Fig. 191: Distribution of blade tools with high retouch made of "Balkan" flint and the presumed deposits of the raw material (Upper Cretaceous chalk and chalk-like limestones with siliceous concretions) in northern Bulgaria (according to the information given at Gatsov, Nedelcheva 2009, Gurova 2012 and Biagi, Starnini 2010; additions: R. Krauß).

Basin (Bánffy 2006, fig. 7. – Bánffy, Sümegi 2012), and attempts to explain the mutually exclusive distribution pattern by means of ecological factors. According to this, the environmental factors in the regions north of this line such as the total hours of sunshine a day or the sun's angle of incidence are already no longer suited to the Neolithic economic mode, and the yield of cultivars and increase of domesticated animal populations no longer sufficient to support such communities. This line is roughly charted by the natural limit of the distribution of the silver lime (*Tilia tomentosa*) (Sümegi, Bodor 2000, fig. 4). The Neolithic communities south of this line evidently required the

centuries prior to 5500 calBC to develop a technological packet also permitting the practising of a Neolithic economic mode north of the CEB AEB. After 6000 calBC, the Körös culture emerges within the zone between the Mureș and the upper course of the Tisza (Bánffy 2006, 127–129. – Domboróczki 2010, 156–172), and settles the northeasternmost sector within the CEB AEB (Fig. 192). It is only following a phase of consolidation necessary for the adaptation of the agrarian lifestyle to the altered ecological conditions that the Neolithic groups crossed the CEB AEB after 5600 calBC, also travelling northwards along the Tisza (Domboróczki 2010, 158–159). In Transdanubia, the overcoming of the CEB AEB is accompanied by the development of a novel house type, the longhouse (Bánffy, Sümegi 2011, 251–254). A spiritual transformation evident in the placement of burial grounds outside of settlements also seems to have occurred. It is only with this new Neolithic package which is then so successful that a broad region (extending to the Paris Basin in the west, the Ukrainian steppes in the east, and the northern fringe of the low mountain range in the north of Germany and Poland) can be neolithised. The basis of this expansion of this phenomenon is the emergence of the earliest LBK in Transdanubia and the Alföld-LBK within the Great Hungarian Plain, the *Genesis* of which occurred roughly chronologically parallel to that of the Vinča culture south of this line (Bánffy 2005, 1–2).

Much recent research has concentrated upon the complex processes by which the CEB AEB was overcome and expansion northwards continued. This has demonstrated that the acquisition of resources once again served as a stimulus, and particularly access to obsidian deposits in the northern reaches of the Carpathians (Mester, Rácz 2010. – Kozłowski, Nowak 2010. – Raczky et al. 2010, colour pl. 7/1). A region roughly corresponding to the Tokaj was reached by means of two routes, along the arc of the Carpathians and following the source of the Tisza eastwards (Domboróczki 2010, figs. 10–11), on the one hand, and from the Banat over the middle course of the Tisza northwards, on the other (Raczky et al. 2010, colour pl. 7/1). In the west, Starčevo settlements may be attested as far as the region of the Balaton, these being ascribed to the late trajectory (Starčevo Spiraloid B) (Bánffy 2004, 317–319. – Kalicz 2010, fig. 2). The complex model of a "mental marginal zone" has been developed to explain the circumvention of the alluvial floodplain of the Tisza in the north-eastern portion of the Great Hungarian Plain (Raczky et al. 2010). This zone, heterogeneous in its topography (although waterlogged in wide swathes), would have demanded a swifter economic adaptation. The landscape certainly did not offer anything approaching ideal conditions for the sheep herding characteristic of the southern regions. Some aspects of this adaptation are nevertheless tangible immediately south of the CEB AEB, inasmuch as the percentage of cattle in the animal bone spectra of the settlements markedly increases, as may, for example, be seen at Ibrány-Nagyerdő (Kovács, Gál, Bartosiewicz 2010, 239–242) and Nagykörű (Raczky et al. 2010, 151–158). Preliminary assessment of the faunal spectrum of Bucova Pusta IV by Bea De Cupere also demonstrates an initially clear predominance of cattle among the large mammals (Krauss et al. 2018).

8.12. The Role of Aquatic Resources

In the northernmost settlements along the CEB AEB of the developed Starčevo-Criș and Körös groups, yet another phenomenon becomes visible; the faunal spectra also display an above-standard proportion of nutrition originating from aquatic habitats. At Tiszaszőlős-Domaháza, Ecsegfalva 23, and Szolnok-Szanda, the identifiable taxa from a freshwater milieu form more than half of all species present (Kovács, Gál, Bartosiewicz 2010, fig. 11). At Nagykörű and Ibrány-Nagyerdő, practically all taxa come from aquatic habitats or wetland woods. The preliminary faunal observations at Bucova Pusta IV indicate much the same. In addition to cattle (the only potential domesticated animal which clearly prevails), various species of game may be evidenced. It has not yet been studied whether all of the butchering waste from cattle originates from domesticated animals. A considerable proportion of the bones may, moreover, be attributed to large fishes, and whole bundles of layers of mollusc and snail shells further attest to a preferred exploitation of aquatic resources (Krauss et al. 2018). At the northern fringes of the dispersal of the Starčevo-Criș-Körös complex at its twilight, a transition to a quasi-Mesolithic lifestyle is tangible, this born of a flexible reaction by the Neolithic communities (which had doubtless developed from a thoroughly Neolithic packet, as is borne out by their ceramic production and stone technology). From an economic perspective, however, the subsistence basis no longer comprises exclusively agriculture and animal husbandry. It almost seems as if this was a local Mesolithic population that had merely received an external impulse for neolithisation. But the genetic data show otherwise. Here too, immigrant farmers from the south are the carriers of the neolithisation process. It is not only within the specific confines of the Danube Gorges that a Mesolithic economic mode might be observed well into the Neolithic period; on the northern reaches of the landscape, just about suitable for the Neolithic economic

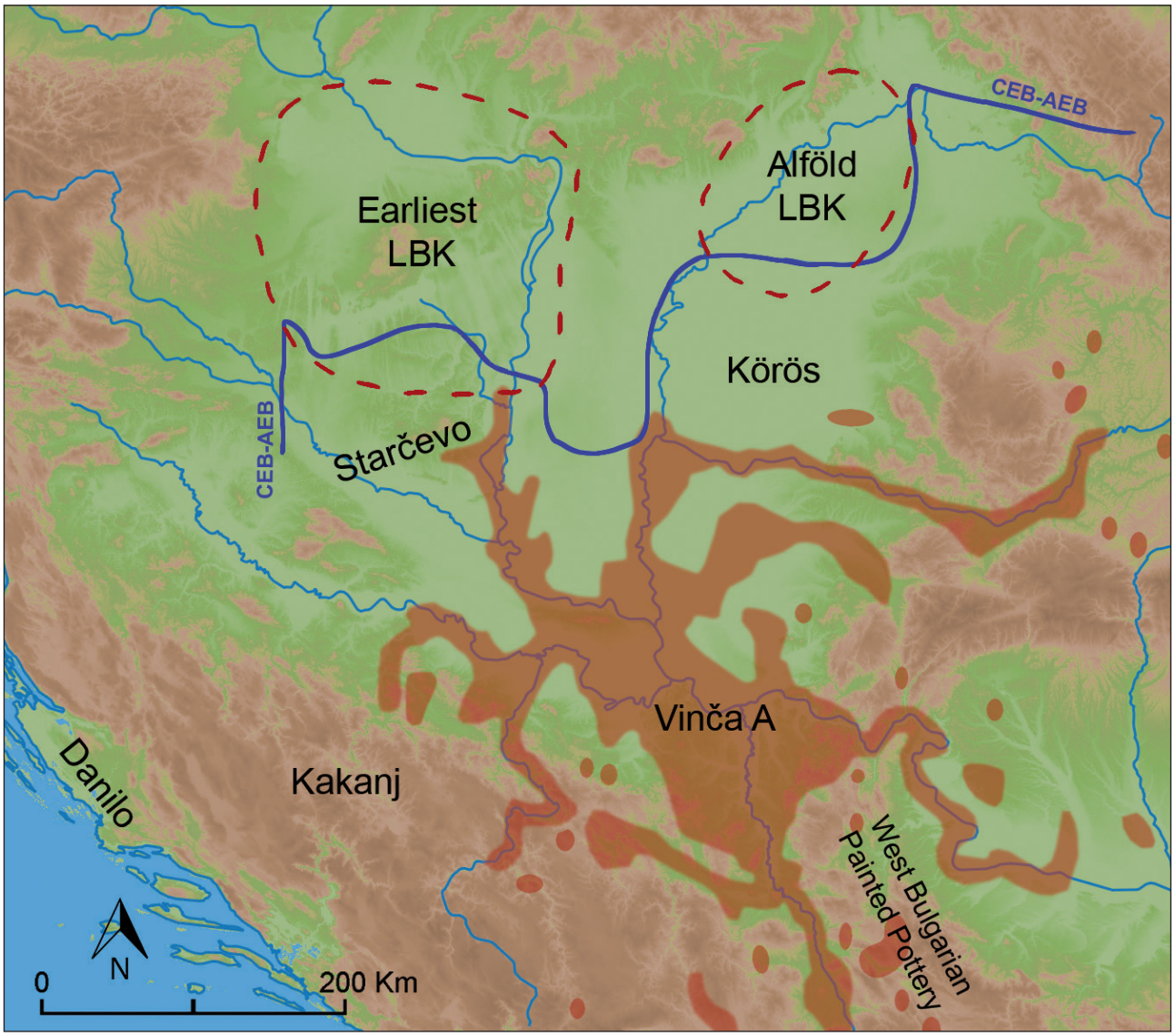


Fig. 192: Historical situation in the mid-6th millennium BCE in the Carpathian Basin. Emergence of western and eastern LBK north of the Agro-Ecological Barrier (R. Krauß).

mode along the CEB AEB, a return to an economy closely tailored to environments marked by bodies of water and damp woodlands may be demonstrated, this representing a shrewd reaction on the part of the resident human societies. In this respect, one of the central questions posed at the outset of this study, namely whether the neolithisation represents an irreversible process, can be answered in the negative with respect to the region of the north-western periphery of the Balkan Neolithic. At the end of the Early Neolithic trajectory, a temporary renunciation (at the very least) of the Neolithic economic mode may be observed along the CEB AEB, with this also bearing repercussions for the general image of settlement. There, a settlement system of smaller occupations shifting along the changing water channels only briefly chronologically removed from one another can be recorded. The appearance of the pre-Neolithic settlement of the region remains currently obscure, although the earliest Neolithic settlements in the Carpathian Basin are nevertheless no longer comparable to those within the Balkans. In contrast to the core regions of the Balkan Neolithic, longer term sites settled for more than four generations are emphatically rare on the north-western periphery. Nevertheless, the vicissitudes of life within this border zone conditioned Neolithic communities to the extent that a new Neolithic bundle could be developed as a result, with this now also permitting a lifestyle based upon agriculture and herding in the regions north and northwest of the CEB AEB.

9. An Investigation of the North-western Pontic Regions

The widespread absence of Early Neolithic sites in Muntenia is particularly arresting in light of the close connections of the north-eastern Bulgarian Early Neolithic with the variants of the Criș culture in Romanian Moldavia lying further to the north. These contacts could only have been directly transmitted via the Wallachian lowlands. While a natural connection to the north is presented by the course of the rivers Siret and Prut, the route along the final section of the Danube must nevertheless have ultimately passed through Muntenia or the Dobrudja.

9.1. The Romanian Province of Moldova

Early Neolithic finds have long been known from the site of Perieni, with these reflecting two stratigraphically successive phases (Petrescu-Dîmbovița 1957). With high, cross-footed vessels, incised and impressed decorations on pots, plastically applied cordons, and adornments of knobs and warts, the ceramics of the lowest, Criș IV-period level of Perieni I permit good comparisons with the material from Ovcharovo-Gorata (Petrescu-Dîmbovița 1957, figs. 3–5). Above this level comes the younger level of Perieni II possessing LBK with *Notenkopf* adornments, which can be taken as evidence for a temporal separation of the two cultural groups in this individual case.

The question as to the chronological relationship of the Criș culture with the south-eastern groups of the *Notenkopf* pottery was already explored early on (Comșa 1959). In contrast to the Pannonian Basin, which might be considered the area in which LBK emerged from of the Starčevo-Criș-Körös milieu (Bánffy 2000), a later encounter (or rather an overlapping of both cultural groups) must be presumed for Moldavia. While a chronological succession of *Notenkopf* pottery and pre-Cucuteni would seem to be evidenced from stratigraphic observations, the relationship between later Criș and LBK long remained obscure. The discovery of Criș pottery and LBK together at, for example, Moreşti and Rupea in Transylvania (albeit also at Valea Lupului on the Prut) indicates a temporary adjacency of both cultural groups (Comșa 1959, 41–43). In turn, a grave with predominantly Criș pottery and individual LBK sherds has been identified at Cipău within the bend of the Carpathians (Comșa 1959, 41). At Glăvăneşti Vechi, the Criș III/IV-period site and a LBK settlement lie very closely to each another (Comșa 1959, 44). Glăvăneşti Vechi's Criș site is crucial for various reasons; not only are individual vessel forms known from Ovcharovo-Gorata attested there, but also a few specific forms which are currently isolates on the Lower Danube. Accordingly, wide mouthed vessels with multiply pierced lips find their closest correlates here (Comșa 1978, fig. 12/5). The frequent studs and plastic applications within the material from Glăvăneşti Vechi may be compared without difficulty to those decorative forms attested from Ovcharovo-Gorata (Comșa 1978, figs. 15–20).

Should the LBK complexes of Moldova be inspected, then individual parallels to the material from Ovcharovo-Gorata can also be discerned (Fig. 193). Pertinent here are ring-shaped studs otherwise attested from the aforementioned LBK settlement of Glăvăneşti Vechi and, moreover, from Larga Jijia and Traian (Comșa 1959, pl. II/17, 32, 49, 51). Also worthy of mention are plastically formed blossoms, one exemplar of which appears on a potsherd from Glăvăneşti Vechi (Comșa 1959, pl. II/ 15). A fragment with four warts from Larga Jijia (Comșa 1959, pl. II/45) may also

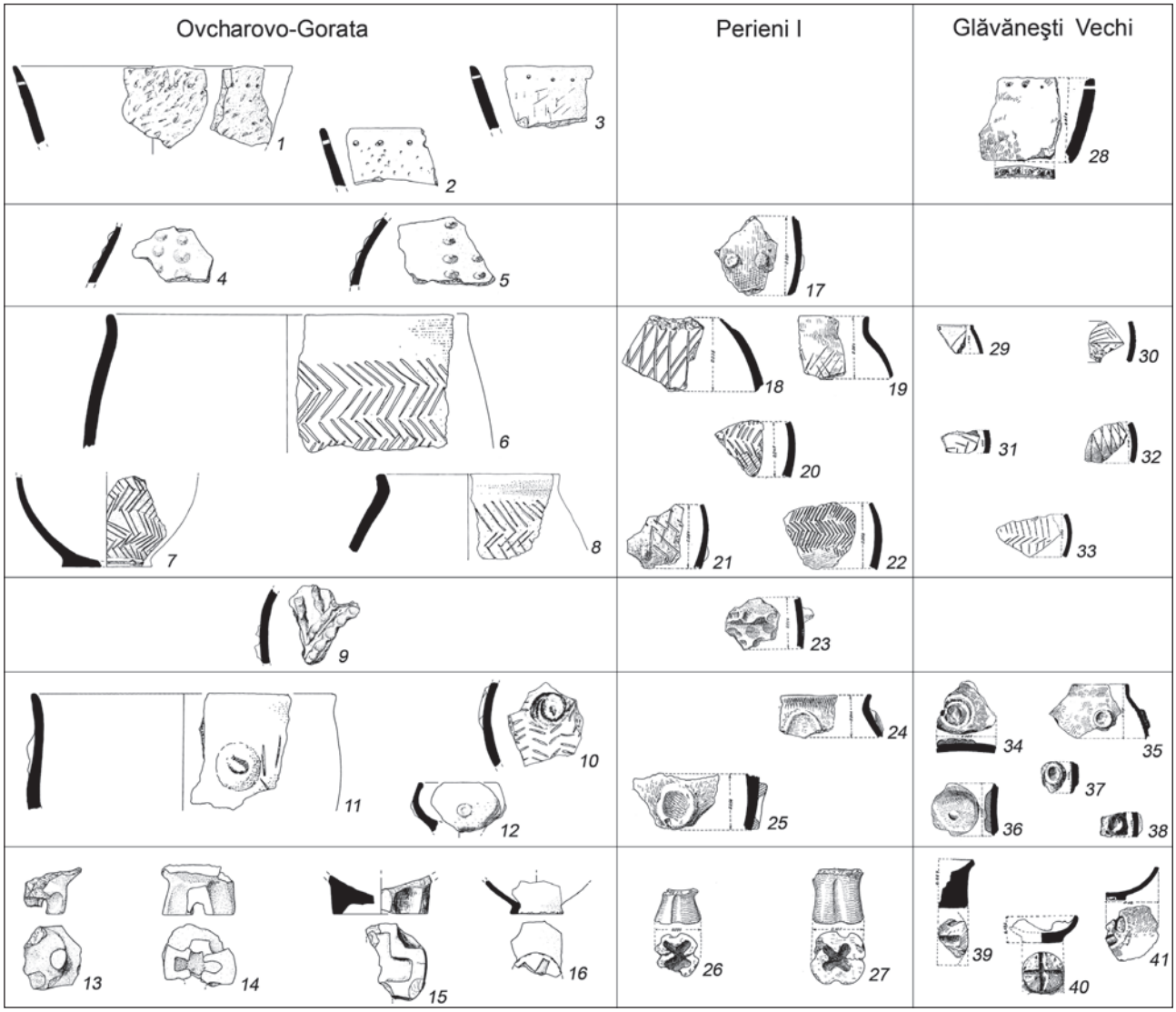


Fig. 193: Comparison of the pottery from the lower course of the Danube with that of sites in the northern Pontic (R. Krauß).

best be compared with material from Ovcharovo-Gorata. Remarkably, a small pot with horizontally projecting nozzle spouts considered a form particular to Ovcharovo-Gorata also finds its best parallels in a fragment from Valea Lupului (cf. Ursulescu 1983, pl. 44/15). This unidirectional intrusion of Criș elements into the form spectrum of *Notenkopf* pottery can be explained by means of a timely replacement of the Criș groups by LBK populations, whereby individual stylistic elements from Criș ceramics persisted within a LBK milieu. The simultaneous adoption of many of these decorative elements could indicate a swift chronological succession of the LBK immediately after the Criș culture's Phase IV according to Lazarovici's periodisation (cf. Lazarovici 1979). Numerous similarities in the pottery from Ovcharovo-Gorata with the Moldavian variants of the late Criș culture are, nevertheless, attested most noticeably in the older complexes before the appearance of the LBK in this region.

Notable here is a site near Balș presenting comparanda to the material from Ovcharovo-Gorata, primarily in terms of its coarse wares (Popușoi 1980). Similar to the latter site, excised rims are present here within the find material (Popușoi 1980, fig. 10/1). Moreover, a cross-footed bowl has been identified (Popușoi 1980, fig. 10/4). In turn, vessel painting with dark pigment upon a red-slipped background is also preserved from Balș (Popușoi 1980, fig. 11/2). Less significant are the few finds published from Dîrțu-Ceahlău, of which a few rim sherds with excised decoration and body sherds adorned with incisions might only very generally be assigned to the Early Neolithic (Păunescu 1958, fig. 1).

If Nicolae Ursulescu's periodisation is followed, then Balș is a late Criș IV site (Ursulescu 1983, 283–292). Further to Glăvănești Vechi, which has already been mentioned, levels from the phase of Criș III are only known from Trestiana (Popușoi 1979) and the municipality of Suceava (Ursulescu 1983). The schematically published vessel forms from Trestiana display cross-footed bowls with very elongated feet and bulbous vessels with narrow mouths, which might be generally compared to the material from north-eastern Bulgaria (Ursulescu 1983, pl. 1/1–2, 10–11, 12–15, 25–26). The various carinated dish types (among these particularly the low-set forms) appear conversely to be a peculiarity of the eastern Criș variants native to here (Ursulescu 1983, pl. 1/3–7, 16).

By means of contrast, the finds from Suceava-Parcul Cetății are directly comparable to those from Ovcharovo-Gorata. Copiously attested are narrow-necked vessels (cf. Ursulescu 1983, pls. 7/1–10; 16/8–17; 21/1–2) and various types of pots (cf. Ursulescu 1983, pls. 16/1; 24/1–2; 27/1–2; 37/1–2). Predominant among the bowl forms are types with markedly pronounced feet (cf. Ursulescu 1983, pls. 21/26–28; 28/17–21; 29/9; 30/15–19; 31/7–13). Conversely, low-set carinated bowls should be understood as a specific phenomenon of eastern Criș sites (cf. Ursulescu 1983, pls. 17/1; 21/6; 34/1). Precise correlates may nevertheless be found in individual forms such as the vessels decorated with warts (cf. Ursulescu 1983, pls. 20/2; 25/16; 34/10; 36/15), and the negatively reserved cross motifs on the base (cf. Ursulescu 1983, pl. 29/16). The latter is also attested from a base fragment from Probota, and from two examples originating from Glăvănești Vechi (cf. Comșa 1978, fig. 12/6–7. – Ursulescu 1983, pl. 40/8). Among the forms of adornment at Suceava-Parcul Cetății might be encountered the parallel zigzag patterns realised by means of incision, and rough perforations, as well as individual studs on the vessel body (cf. Ursulescu 1983, pls. 21/15, 21; 22/4; 23/4–6; 24/10–12) as similarly occur at Ovcharovo-Gorata. The lips and the zone on the base of the vessel are analogously spared decoration. Vessel rims are frequently excised (cf. Ursulescu 1983, pls. 15/13; 18/4; 22/2; 24/2; 26/1, 6; 28/13; 30/8; 37/16–17; 38/12), while (by means of contrast) excision seems only rarely to occur upon feet. This simple form of adornment may, nevertheless, be evidenced, for example on a fragment from Suceava-Parcul Cetății and likewise on examples from Câmpul Șanțurilor and Suceava (cf. Ursulescu 1983, pls. 18/7; 40/15). Finally, channelled decoration is evidenced upon a few pieces from Suceava-Parcul Cetății (cf. Ursulescu 1983, pls. 9/13; 27/16–19).

From the aforementioned, a parallelisation of Ovcharovo-Gorata with Perieni I, the earlier material from Glăvănești Vechi, and with Suceava-Parcul Cetății during the phase of Criș III in Moldova can be made. In the subsequent phase of Criș IV, LBK groups with *Notenkopf* decorations penetrate these areas, with these, in turn, adopting elements of Criș pottery within their form repertoire. Considering the parallels of these foreign elements with the material from Ovcharovo-Gorata which have been demonstrated, it is also entirely possible that the penetration of LBK populations into Moldova may already have occurred during Criș III.

9.2. Bessarabia and South-western Ukraine

During Phase IV, an extension of the Criș culture may also be identified within the region east of the Dniester. For example, the vessel forms from the site of Sacarovca still demonstrate weak echoes of types from Ovcharovo-Gorata. Some narrow-necked vessels are distantly reminiscent of Types K2a and K2b (cf. Chapter 7.4, Figs. 119–123), and are decorated on their surfaces with rough impressions (cf. Larina 1994, fig. 3/36–37). Stand-footed bowls on very high feet and S-profiled pots are characteristic (cf. Larina 1994, fig. 3/25–27, 39–42). A novel form is represented by sharply profiled bowls with two or three limbs and frequently a central knob on the vessel body (cf. Larina 1994, fig. 3/28–33). An indirect influence of the South-eastern European Early Neolithic upon the northern Pontic steppes is nevertheless tangible, inasmuch as the emergent Bug-Dniester culture proves to be heavily inspired by Criș pottery. Some types appearing within Sokol'cy I are interpreted as direct Criș imports (Wechler 2001, 277). Independent of the question as to whether Early Neolithic pottery is able to be traded over so great a geographical distance, a S-profiled bowl on a stand-ring may be compared to similar forms from Ovcharovo-Gorata (Danilenko 1969, figs. 63/4; 64/5). Certain pot forms from Soroki I, Level 1b are also indicative of the material from Ovcharovo-Gorata (cf. Markevich 1974, fig. 17/4–5, 8, 10–11). Furthermore, two globular pots with pierced lugs on their bodies from Soroki II, Level 1 and from Soroki III also find their best parallels in material from there (cf. Markevich 1974, figs. 48/5; 55/3). The decoration of the pots with simple impressions realised with fingernails or a simple stick is still present here (cf. Markevich 1974, fig. 27/1–5). Yet, most noticeably suggestive of a connection are the vertically running, parallel zigzag incised lines which are very much characteristic of Bug-Dniester pottery (cf. Markevich 1974, figs. 17/1; 18; 48/4. – Wechler 2001, pl. 7). This motif may be encountered within Sokol'cy VI on a pot with a flat base and among forms with pointed bases alike (cf. Danilenko 1969, fig. 56).

9.3. The Reduction of the Neolithic Package during its Transmission into the Northern Pontic Steppes

The appearance of forms with pointed and rounded bases within the Bug-Dniester culture is a decisive difference to the Early Neolithic forms of the entire Balkan-Carpathian region. Conversely, the stand-bases so characteristic of the Balkan Neolithic most noticeably occur among vessels from the early Bug-Dniester culture (cf. Wechler 2001, pls. 1, 6, 7/1–6). This observation is confirmed by the fact that the percentage of flat-based pottery within the entire ceramic spectrum of the Early Neolithic sites of the northern Pontus decreases as distance from the Balkan Peninsula increases (cf. Danilenko 1969, figs. 1, 3, 59). This fundamental disparity in vessel tectonics may be plausibly explained by means of the differing economy of the Neolithic groups from the steppe which were heavily focused upon hunting, fishing and gathering (Wechler 2001, 81–91). Interestingly, the multiple perforation of lips is already evidenced among the early vessels of the Bug-Dniester culture (cf. Markevich 1974, fig. 27/5, 7), this prompting the question as to whether this specific treatment of vessels (found also among the material from Ovcharovo-Gorata) might be interpreted as an adoption from the northern Pontus (Fig. 193, upper row). Nevertheless, this would also be the only aspect of the material culture not transmitted from the Balkan Neolithic into the north-east, but from thence in the opposite direction.

The butchering waste and botanical remains from the Neolithic settlements of the northern Pontus already display a marked narrowing of the spectrum of exploited domesticated animals and plants (cf. Wechler 2001, 36–47. – Kotova 2003, pl. 3). Game clearly predominates among the animal bones. Even the cattle bones evidenced from the site of Baz'kov Ostrov most likely originate from aurochs (*Bos primigenius*), and are thus to be understood as prey (Wechler 2001, 37–38 and pl. 1, fn. 44). Intimations as to the use of cultivars are offered by the impressions of various grains and pulses upon pottery (Kotova 2003, pl. 3). However, the small quantities of even these secondary indicators actually hint at a rather sporadic use of these resources within the northern Pontic steppes, much in the manner of Kristina Jennbert's "Fertile Gift" (Jennbert 1984. – Jennbert 1988). It is quite possible that grain entered the northern Pontus from the eastern Balkans by means of exchange prior to any local cultivation. While a complete "Neolithic package" comprising structured settlements, ceramic and grindstone technologies, agriculture, and husbandry was transmitted into every region of the Balkan-Carpathian sphere as yet discussed, the northern Pontic steppes are characterised by a reduced Neolithic package composed of ceramic production and occasionally additional elements occurring at certain sites (Fig. 194). Indeed, the appearance of the settlements is so different to that of examples from the Balkan-Carpathian sphere that permanent sedentary residence and pottery production on site could even be reasonably doubted. The marked reduction in domesticated animals in the midst of efficient exploitation of the sufficiently plentiful wild animal species and aquatic resources must be understood as an adaptation to the ecological preconditions of the steppes. The wide spectrum of available cultivars dwindles to only a few species initially occurring within the northern Pontus in small quantities and possibly not as products for cultivation, but rather as goods for exchange. Ceramic vessels and various relics of Neolithic 'ideology' remain as the only archaeologically tangible elements of the "Neolithic package". As pottery production is largely unaffected by climatic or economic factors, this may have been transmitted independently of an economic mode based upon agriculture and husbandry. The altered use of pottery is visible upon the vessels themselves as stands on vessels disappear with increased distance from those regions ecologically suited to farming and livestock breeding. A reason for this is to be elicited from the differing economy of the steppes, wherein pottery with stands for bases offers no advantage over the more stable examples with pointed or round bases. On the other hand, ceramics with bases with stands very frequently occur in the context of permanent housing, which becomes logical inasmuch as good horizontal surfaces exist for the placement of objects. In this respect, the pottery can also be considered as an indirect indication of a transformation of the Neolithic package on its way from western Anatolia and the Aegean into the northern Pontus by way of the Balkans. It should also be mentioned that such an argumentation can also be employed to support a diffusion of some elements of the "Neolithic package" into the northern Pontus via the eastern corridor between the Caspian and Black Sea (cf. Danilenko 1969, 177–186). Despite this, the archaeological record is currently much sparser there, with this, in turn, perhaps being connected to the lack of any structural basis for the dispersal of elements of the Neolithic package from this direction.

	Northern Aegean	Marmara	Thrace	Vardar-Struma-Mesta	Central and Western Balkans	Lower Danube	Eastern Carpathian Basin	North-western Pontic
Beginning of Neolithisation Processes	From 6800 BCE		From 6000 BCE	From 6400 BCE	From 6200 BCE	From 6100 BCE		Dates are secure from 5800 BCE; older dates are uncertain
Domestic Architecture	Mudbrick on stone foundations	Mudbrick and wattle and daub	Wattle and daub			Settlement pits for largely unknown buildings		Flat settlements along rivers, rarely longer local duration
Ceramic Traditions	Connections to the ceramic tradition in south-west Anatolia's 'Lake District' and via maritime networks as far as the Levant; red-slipped ware and impresso	Connections to the ceramic tradition in south-west Anatolia's 'Lake District'	Own tradition; red-slipped ware and impresso, painted ware, later plastic applications and channelled ware	Connections to the ceramic tradition in western Anatolia and in Thessaly; red-slipped ware and impresso as well as painted ware	Initially clear references to the Aegean but later own tradition; red-slipped ware and impresso as well as painted ware and later plastic applications	Initially clear references to the Aegean but later own tradition; red-slipped ware and impresso, later plastic applications and channelled ware	Connections to Balkan Neolithic; red-slipped ware and impresso, plastic applications; very little painted ware, predominantly coarse fabric	Close links to the Lower Danube area but with increasing distance from the Balkans, pointed and round-bottomed ceramics appear; only plastic decorations
Use of Animals	Mainly sheep/goat, pig and cattle breeding, hardly any hunting						Preference for cattle among domestic animals; increased use of aquatic resources and hunting	Hunting, gathering and fishing
Use of Plants	Cereals and pulses, very small percentage of collected plants						Cereals and pulses, larger proportions of collected plants	Collective economy with occasional appearance of cultivated plants

Fig. 194: Comparison of the economic fundamentals in the different Neolithic regions (R.Krauß).

10. The Absolute Chronological Framework

Almost no period of European prehistory is as amply attested with ^{14}C dates as that of the South-eastern European Early Neolithic, and, hence, a very dense series of dates is available, particularly for the transition from the Mesolithic to Neolithic. The basis of the current work was supplied by the extensive data series in CalPal[30] and 14SEA,[31] supplemented by a few dates only obtained in recent years which had not yet been integrated within these databases, together with some further information from current academic literature.

For as long as radiocarbon methods have been applied within archaeology, they have been employed time and again to answer the question as to the advent of sedentarism and the introduction of agriculture to Europe. However, precisely because recourse was already made to these methods so early in studying the beginning of the Neolithic, the data created is not entirely unproblematic. Over the course of time, the measuring methods have been ever further refined, and are able to deliver measurements with very little in the way of standard deviation from very small sample sizes of organic materials. At the beginning of the history of research, comparatively large quantities of material were still required to obtain results at all. Accordingly, carbonised wood was overwhelmingly tested, and in large quantities to boot. So as to acquire sufficient amounts of dateable material, multiple different samples from an archaeological context were often combined. The conventional methods of measuring initially also only supplied results with very high standards of deviation. It was only with the establishment of accelerator mass spectrometry (AMS) dating that smaller sample quantities could also be dated precisely. It thus happened that many key sites within the Aegean and Balkan-Carpathian sphere that were excavated until into the 1990s were solely dated from charcoal series. The problem in dating settlement layers with wood has already been commented upon many times (Schiffer 1986. – Bayliss 2009).

This problem is very aptly demonstrated in the case of the data series from Bucova Pusta IV (Fig. 195). The settlement's earliest three samples came from charcoal (Poz-58612; Poz-51355; Poz-51356), which only indicate the period in which the wood had grown (with their calibrated values between 5930 and 5680 calBC), this then being used later for the construction of houses within this settlement. The relatively secure succession of dates from short-lived samples (animal bones and carbonised seeds) only begins markedly later, so that a beginning of occupation might be presumed at around 5750 calBC. That the carbonised wood occurs in the same refuse pits is unsurprising as these were presumably also deposited along with the food refuse within these respective contexts. Accordingly, the ^{14}C date measured states nothing as to this wood's period of use, but instead must be located by necessity in a period prior to the advent of occupation. Should Bucova Pusta IV be taken as an example, then it is evident that a chronological distance of 100 years may well lie between the ^{14}C age of the wood charcoal deposited within the settlement contexts and their actual phase of use.

In precisely estimating the beginning of the Neolithic, if only the old data series such as those from Achilleion,

30. My heartfelt thanks go to Bernhard Weninger, who gave me his comprehensive database for this work.

31. http://www.14sea.org/ (last accessed 19.01.2022).

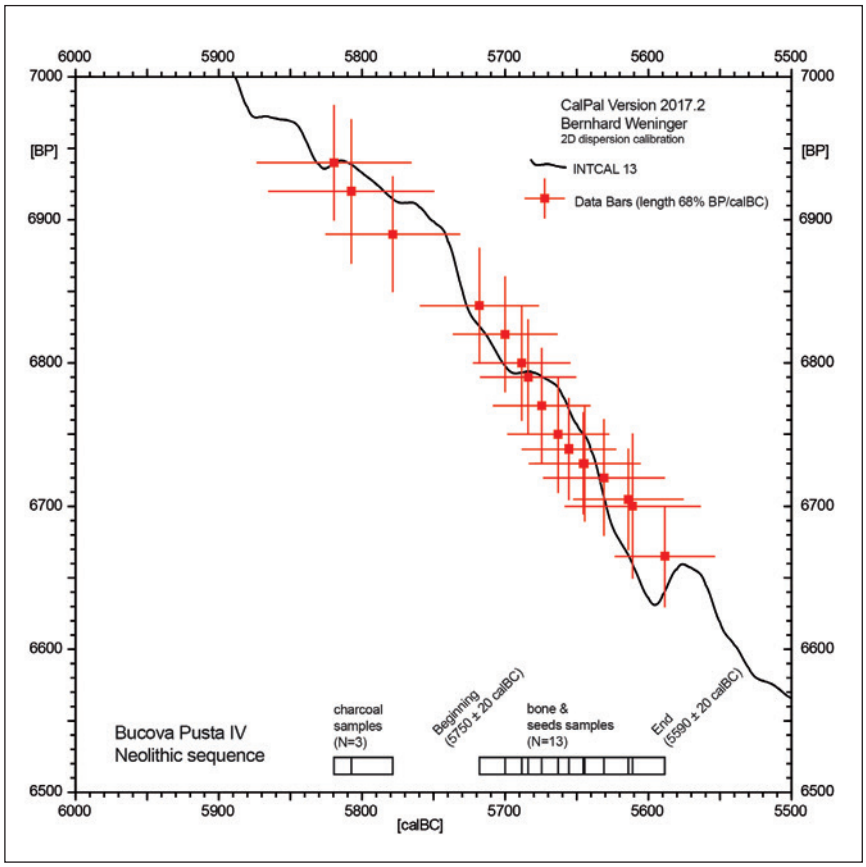


Fig. 195: Bucova Pusta IV. Calibration of radiocarbon dates (R. Krauß).

Anzabegovo, Azmak, Chavdar, Divostin, and Grivac, all almost exclusively composed of charcoal (to name just a few of the best-known examples), are used, then one inevitably arrives at a false estimation of some 80–100 years too early. Notable, in turn, are the very high standard deviations, which can push the data back further decades or entire centuries.

10.1. Beginnings and Persistence

Yet, the newer AMS data series from short-lived samples are not without their difficulties. At some sites, ^{14}C samples from Early Neolithic features have been demonstrated to date to the period prior to the beginning of the site's occupation. Alasdair Whittle supplies the example of a cattle bone from Ecsegfalva 23, Trench 23B (OxA-12857) and reference to equally isolated, very early dates from Topole-Bač (OxA-8504) and Maroslele-Pana (OxA-X-922-30) (Whittle 2007, 174). He suggests thereby that he has identified an otherwise all but intangible pre-Neolithic settlement by means of these skeletal remains (Whittle 2007, 728). To this might now be added further examples. A reservoir effect due to predominantly aquatic nutrition with human skeletal remains must always be assumed; this could be the case with the sample OxA-8504 from Topole-Bač and the sample OxA-9403 from Maroslele-Pana. On the other hand, data on animal bones from ruminants can hardly be ignored. I should like to cite two examples here as extreme cases (Fig. 196; Tab. 4). At the celebrated Early Neolithic site of Ohoden, a deposit of three antlers date to the first half of the 7th millennium BCE according to ^{14}C. This appears to be a Late Mesolithic feature unrelated to the Early Neolithic. Further ^{14}C dates confirm a chronological placement of the Early Neolithic settlement of Ohoden only from the 57th century BCE onwards; thus, more than 1000 years lie between the Mesolithic feature found within the settlement and Neolithic occupation itself!

Despite this, there is clear evidence for earlier, pre-Neolithic occupation of Ohoden on account of the deposited deer antlers. There are also many other cases, however, of samples dated very early from later find contexts where no further intimations of pre-Neolithic settlement might be found. In much the same vein, the bone of a bovid was found at Foeni Gaz, the measurement of which (Poz-38230) indicated a date within the first half of the 7th millennium BCE;

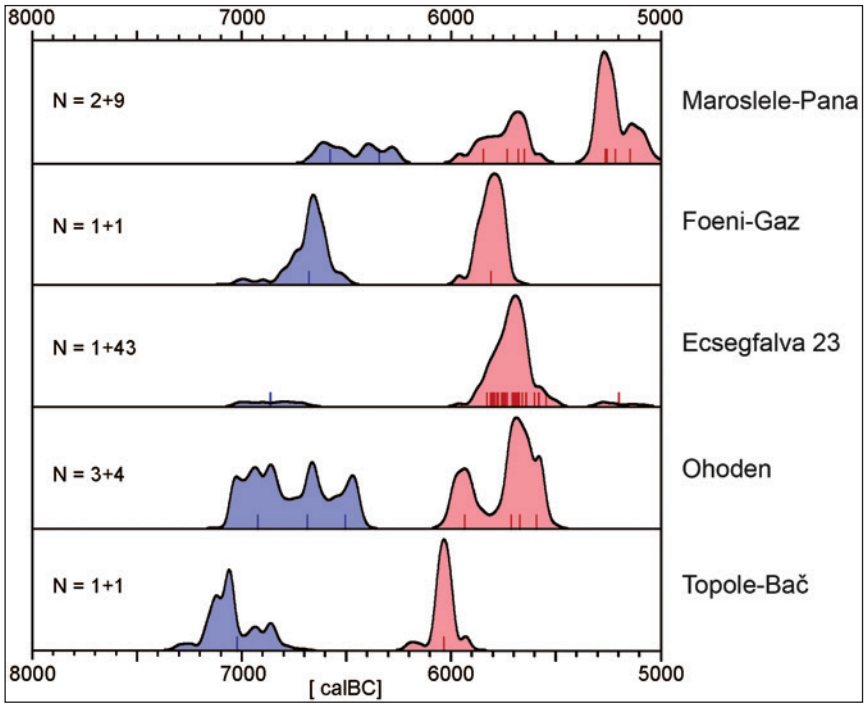


Fig. 196: Barcode calibration in CalPal of Mesolithic (blue) and Neolithic (red) radiocarbon dates from Early Neolithic sites in South-east Europe. Clearly visible is their offset in comparison to the chronological position of their find context (R. Krauß).

Site	Labcode	^{14}C age BP	STD	δ^{13}C	Material	Species	Context	Source
Topole-Bač	OxA-8504	8085	55	-19.8	bone	*Homo*	human skeleton in contracted position	Whittle et al. 2002
Ohoden	Poz-82519	7650	50	n.d.	antler	*Cervus elaphus*	Mesolithic deposition in an Early Neolithic settlement	this study
	Poz-88723	7840	40	n.d.	antler	*Cervus elaphus*	Mesolithic deposition in an Early Neolithic settlement	this study
	Poz-88724	8010	40	n.d.	antler	*Cervus elaphus*	Mesolithic deposition in an Early Neolithic settlement	this study
Ecsegfalva 23	OxA-12857	7944	44	-12.3	bone	*Bos*	single cattle bone from Neolithic settlement context	Whittle 2007
Foeni Gaz	Poz-38230	7830	50	n.d.	bone	*Bos*	single cattle bone from a multi-phase prehistoric settlement	Krauss, Ciobotaru 2014
Maroslele-Pana	OxA-9403	7765	55	-22.4	bone	*Homo*	isolated human bone	Whittle et al. 2002
	Deb-2733	7497	56	n.d.	bone		from an Early Neolithic pit	Horváth, Hertelendi 1994

Tab. 4: Isolated Mesolithic ^{14}C dates from Early Neolithic sites in South-east Europe.

this bone was discovered in a feature certainly belonging to the early 3rd millennium BCE on the strength of the pottery and a series of further ^{14}C dates.

There have been attempts in previous chapters to demonstrate the dynamics of dispersal for respective regions, preferably on the strength of vessel ceramics. Unfortunately, larger series of ^{14}C dates are only available for a few of the sites mentioned there. Conversely, there are numerous radiocarbon dates, the trajectories of which cannot be reconstructed from their published find material.

Regardless, the overlap between those sites with well published material and those sites with sufficient ^{14}C dates is large enough for a meaningful comparison to be undertaken. Nevertheless, a few preliminary remarks are necessary regarding the selection of data, as it would be naive simply to juxtapose the earliest respective dates from Early Neolithic sites in the study region: such an approach risks gravely false interpretations. Quite rightly, each earliest date of a sequence of dates should, indeed, be approached sceptically, particularly when it occurs detached from the dates' usual sequence. In general, the following rules could be established for the determination of the beginning of the Neolithic within a region. Only sites with more than one ^{14}C date should be taken into account. Preferably, only dates from short-lived samples should be included. Carbonised wood can only be considered if it originates from bushes proven not to have been used as construction material for houses. Accordingly, the many charcoals from the Cornelian cherry (*Cornus mas*) may be used, but those from oaks (*Quercus*) are best avoided. Naturally, no samples displaying the reservoir effect such as those from fishbones or mussel and snail shells should be used. Indeed, human bones (much like those of pigs) may prove problematic. Finally, dates displaying minimal standard deviations within their values are to be preferred. The selection of dates must hence be stringent, and can only come about through decisions made on a case-by-case basis. Automated processes such as the consideration only of the second oldest date from a site or the sole use of dates from short-lived samples cannot by any means replace this case-by-case determination. The list of dates employed here (Tab. 7) accordingly displays a chosen date which should mark in the best possible way the advent of settlement at each respective site. The aforementioned criteria were employed in the overwhelming majority of these selections; however, for those sites for which only earlier dates from charcoal with high standard deviations are available, a date was chosen which fitted best with the remaining 'safe' dates from sites from the entire region. Hence, for example, the earliest ^{14}C date from Achilleion could be used, despite this originating from a conventionally measured charcoal displaying a comparatively high standard deviation, as it does not exceed the bounds of comparable other dates from sites in Thessaly originating from ephemeral sample material. For precisely the same reason, the two earliest ^{14}C dates from Nea Nikomedeia must be excluded. Here, the rule of thumb is that a conventionally measured charcoal date should not be older than AMS dates from short-lived samples from the same region. The same procedure was used in order to select one date from each of the Epi-Palaeolithic/Mesolithic sites marking the respective end of settlement or at least its near-approximation (Tab. 8).

The basis of the following evaluation is the weighted mean from the 2-sigma range of the calibration of the ^{14}C dates on the curve INTCAL20. In order to represent the Neolithic settlement, the inverse distance weighting (IDW) interpolation process was applied by Lennart Brandtstätter with a radius of 500 km around each site and a doubled intensification of the colour value (Fig. 197). The dark red tones mark areas with very early dates for the Neolithic, and the light red those with late dates. For greater precision, areas with the same colour values were marked with contours construable as chronological isochrones. By means of comparison, the isochrones with the latest Epi-Palaeolithic/Mesolithic dates were overlaid following the same procedure, although here the IDW was performed with a radius of 1000 km around the sites.

When compared with the conclusions drawn in the preceding chapters, this image is extremely telling. Clearly evident is the chronological advance of the Neolithic within the Aegean, together with hotspots of the neolithisation process within central western Anatolia, Thessaly, and Greek and North Macedonia. From thence, the Neolithic spreads within the Balkans generally along the north-southerly running river valleys of the Axios/Vardar, Struma, and Nestos/Mesta following the climatic fluctuations during the 8.2 ka event. Interestingly enough, the radiocarbon dates from the Marmara region do not form a hotspot, which corresponds with archaeological observations on the strength of the ceramic find material. Thrace is of equally little relevance to the earliest foray of the Neolithic into South-eastern Europe; this is also in agreement with the present work's archaeological remarks on this point. The corridor of the central Balkans very clearly demonstrates itself to be the Neolithic's route of dispersal into the Carpathian Basin. Along the course of the Tisza and from the Danube Gorges to northern Bulgaria and Transylvania, further hotspots may be noted from the period shortly after 6000 calBC. Here, a very expansive coverage of the Thracian Plain by the Neolithic may be noted. After c. 5900 calBC, hotspots of neolithisation (both great and small) can be discerned within the eastern arc of the Carpathians. Within the Carpathian Basin, the expansion process comes to a halt along the CEB AEB, before continuing further northwards and northwestwards after 5500 calBC. The dynamics of dispersal in the regions north of the Danube's delta appear to stem from a few hotspots in the period following 5800 calBC, as the area between north-eastern Bulgaria and the interior of the Carpathian arc, on the one hand, and the north-western Pontus, on the other, is strikingly bright. Nevertheless, the ^{14}C

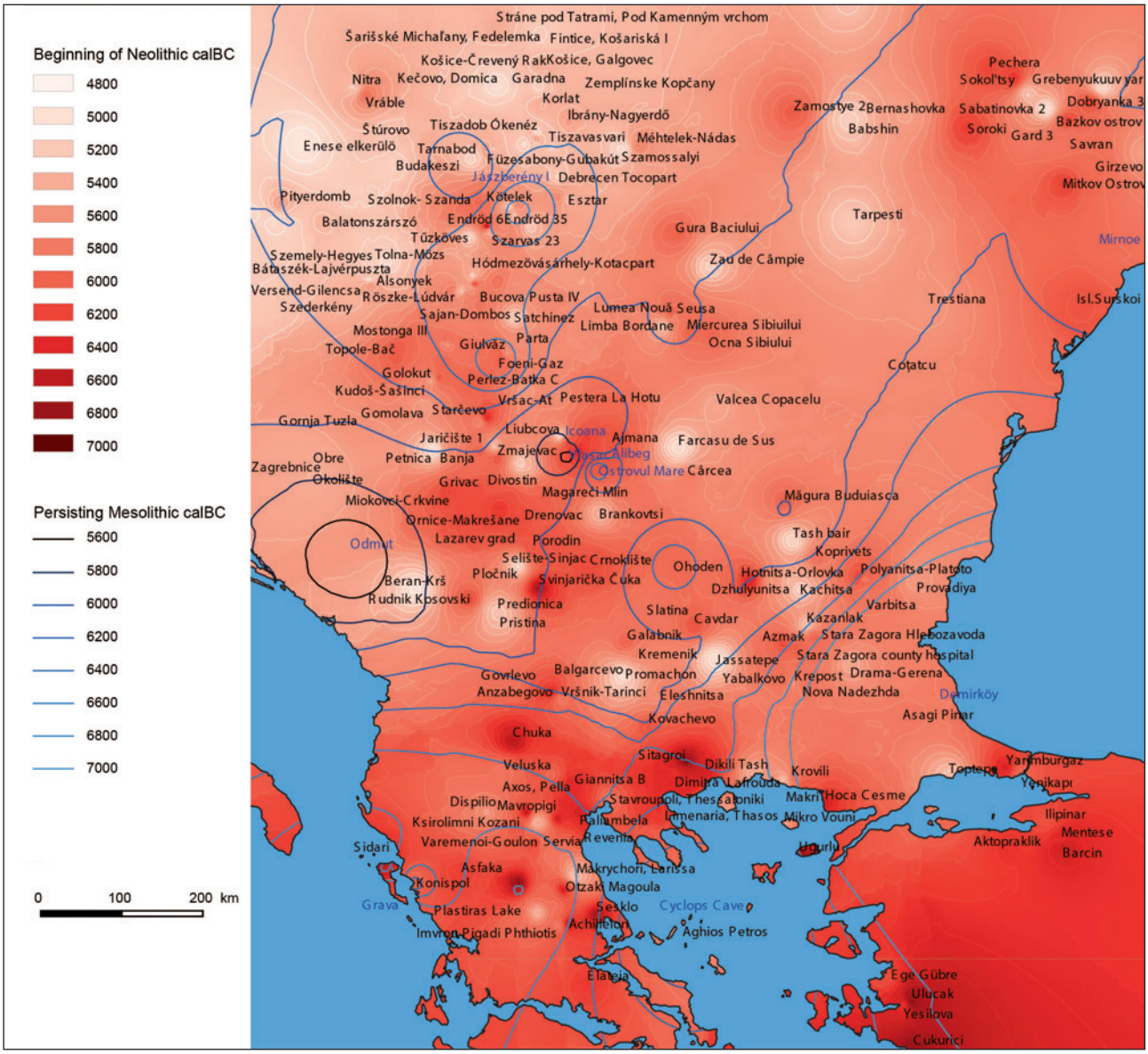


Fig. 197: Expansion dynamics of the Neolithic in South-east Europe. Visualisation of the last Mesolithic and earliest Neolithic ^{14}C dates using the Inverse Distance Weighting (IDW) interpolation method (L. Brandstätter, R. Krauß, datalist in Tab. 7 and 8).

dates from Moldova intimate very little about the character of the Early Neolithic, which sets itself apart very markedly from other areas in South-eastern Europe in terms of its economic basis. There, the criterion for the advent of the Neolithic is the introduction of ceramic production. This pottery predominantly possesses pointed or rounded bases, and need not have been adopted from the Balkans or the Carpathian Basin. Rather, this seems more connected to the wide-ranging sphere of ceramics with pointed and rounded bases in Eastern Europe and the circum-Baltic zone, where hunter-gathering continued until much later.

Before further exploring the aspect of economic basis, it is worthwhile considering once more the latest Mesolithic settlement. Within the entire study region, isolated hotspots of enduring hunter-gatherer communities might still be attested, the ^{14}C dates of which correspond to those of the Neolithic occupation. Interestingly, the replacement of Mesolithic settlement with that of the Early Neolithic is particularly visible in the Aegean. By means of contrast, Mesolithic communities can still be attested until well into the 6th millennium BCE within the Balkan-Carpathian sphere. These are concentrated in areas particularly rich in aquatic resources (such as the

Site	Labcode	^{14}C Age BP	STD	Species	Source	Mean_2sigma calBC
Argissa	UCLA-1657 A	8130	100	*Ovis*	CalPal	7083
Çukuriçi Höyük	VERA-5025	7145	40	*Ovis*	CalPal	5997.5
Youra, Cyclops Cave	Beta-?4	7120	80	*Ovis/Capra*	CalPal	6010
Nea Nikomedeia	OxA-3874	7370	80	*Capra*	CalPal	6236
Drama-Gerena	Erl-12317	6385	50	*Ovis*	CalPal	5348.5
Nova Nadezhda	SUERC-53071	6746	30	*Ovis*	CalPal	5645.5
Aništе-Bresnica	BRAMS-2331	7306	28	*Ovis/Capra*	Porčić et al. 2020	6153.5
Bakovača-Ostra	BRAMS-2329	7299	27	*Ovis/Capra*	Porčić et al. 2020	6151.5
Bataševo	BRAMS-2227	7331	27	*Ovis aries*	Porčić et al. 2020	6159
Lepenski Vir	OxA-16212	7041	35	*Capra*	CalPal	5924
Vinogradi-Bečej	OxA-8565	7120	55	*Ovis/Capra*	CalPal	5963.5
Dzhulyunitsa	OxA-24939	7171	36	*Ovis*	CalPal	6005
Ovcharovo-Gorata	Poz-16985	6890	40	*Ovis/Capra*	CalPal	5777.5
Varbitsa	Poz-108842	6895	35	*Ovis/Capra*	this study	5799
Alsónyék	SUERC-5145	6903	35	*Ovis/Capra*	CalPal	5801
Szederkény	OxA-30520	6168	33	*Ovis/Capra*	CalPal	5112
Versend-Gilencsa	SUERC-58569	6247	33	*Ovis/Capra*	CalPal	5189.5
Bucova Pusta IV	Poz-76963	6665	35	*Ovis/Capra*	CalPal	5569.5
Ecsegfalva 23	OxA-9329	6950	45	*Ovis/Capra*	CalPal	5852.5
Endrőd 119	OxA-9587	6915	45	*Ovis*	CalPal	5841.5
Movila lui Deciov	Poz-120498	6930	40	*Ovis/Capra*	this study	5844
Ribnjak-Bečej	OxA-8564	6750	65	*Ovis/Capra*	CalPal	5643.5

Tab. 5: Oldest dated bone samples from Ovis/Capra bones in the research area (cf. Fig. 198).

zone around the Danube Gorges) in the extended wetlands between the Middle Danube and the Tisza, and in Montenegro. Mesolithic communities quite evidently continued to exist in parallel to those of the Early Neolithic for some time. The processes of neolithisation nevertheless seems not to have been inhibited by this, as the dispersal proceeded to circumvent the Mesolithic zones. This seems logical as these groups made use of differing environments, and thus needed not necessarily have come into conflict.

It is also worth investigating the existing dataset of samples extracted from this novel economic mode's produce. The products of agriculture and husbandry are meant specifically here. Caution must be advised in distinguishing domesticated species from among those taxa also occurring in their wild forms in South-eastern Europe, as it is only occasionally possible to distinguish aurochs and wild boars from domesticated cattle and pigs. Nevertheless, the bones of sheep and goats are a good choice, as both species originating from the regions of the Fertile Crescent may be demonstrated to have first arrived in Europe in their domesticated forms. Much in the same way, it can be stated that the wheat species of einkorn (*Triticum monococcum*) and emmer (*Triticum dicoccum*) as well as barley (*Hordeum*) first reached Europe in their already cultivated forms. The values in Tables 5 and 6 present the various examples of each animal or grain species at a site with their earliest respective ^{14}C dates.

Mapping the earliest respective appearances of sheep and goat bones within the dataset very clearly displays the process of dispersal (Fig. 198). The earliest evidence comes from the Greek mainland. From thence, these domesticated animals had only spread to central Serbia and northern Bulgaria by 6000 calBC. It is only in the following centuries that dated remains of domesticated sheep and goats are also attested in Thrace and the Carpathian Basin. While the absence of dated sheep and goat bones from the Marmara region may well be due to the research history, the complete void in the areas northwest of the Black Sea is real. No domesticated animals had yet appeared during the period pertinent to the neolithisation. The diffusion of grain cultivars displays a somewhat different image. The earliest evidence from the period prior to 6000 calBC also originates from northern Greece and the immediately neighbouring areas. It is only following this juncture that cultivated grain is also attested outside of the SMAB zone. The expansion after 6000 calBC encompasses the entire

Site	Labcode	^{14}C Age BP	STD	Species	Source	Mean_2sigma calBC
Nea Nikomedeia	OxA-1605	7400	90	*Hordeum*	CalPal	6250.5
Galabnik	Bln-4093	7100	80	*Triticum*	CalPal	5985.5
Kovachevo	OxA-20246	7245	36	*Triticum* sp.	CalPal	6123.5
Veluška	Tx-1786	6890	140	*Triticum*	CalPal	5806.5
Vršnik-Tarinci	Bln-339	6950	100	*Triticum dicoccum/monococcum*	CalPal	5838.5
Aşağı Pınar	KIA-19258	6320	30	*Hordeum*	CalPal	5289.5
Azmak	Bln-292	6878	100	*Triticum dicoccum/monococcum*	CalPal	5803
Makri	GrA-45962	6895	40	*Cerealia*	CalPal	5780.5
Slatina	Bln-3440	6840	60	*Grain*	CalPal	5752
Yabalkovo	OxA-23558	6930	45	*Grain*	CalPal	5845.5
Okolište	KIA-41403	6194	36	*Triticum dicoccum*	CalPal	5164
Svinjarička Čuka	MAMS-40136	6734	25	*Hordeum*	CalPal	5641.5
Zagrebnice	KIA-45627	6565	30	*Triticum dicoccum*	CalPal	5544.5
Măgura Buduiasca	OxA-21405	6868	38	*Hordeum*	CalPal	5753
Bucova Pusta IV	Poz-88721	6820	40	*Hordeum*	CalPal	5703.5
Ecsegfalva 23	OxA-11871	6930	40	*Cerealia*	CalPal	5844
Miercurea Sibiului	OxA-19739	7131	34	*Hordeum*	CalPal	5994
Parţa	Lv-2149	6160	90	*Cerealia*	CalPal	5080

Tab. 6: Oldest dated samples of charred cereal grains in the research area (cf. Fig. 198).

Balkan-Carpathian sphere. Nevertheless, securely dated grain cultivars are first evidenced throughout the entire lowlands of the Lower Danube only from c. 5700 calBC onwards. According to multiple samples, these cultivars appear in Thrace markedly earlier. The absence of early dated grain cultivars in the southern and western zones of the Carpathian Basin may well be understood as a consequence of the state of research considering the two early attestations in the region of the Tisza and in southern Transylvania. The situation in north-western Anatolia is to be understood analogously. Here, the aforementioned problem of the old data series from wood seems once again at work. More recently, animal bones have been dated in preference, and the preservation of grain may potentially play a role here. For the present author, the complete lack of dated grain cultivars in the zone north of the Danube's estuary is conversely also to be taken as fact; the Neolithic there is solely defined by its ceramic production, whereas animal husbandry and crop cultivation are initially lacking.

10.2. Regional Dynamics

This is the general image of the dispersal of the Neolithic in South-eastern Europe. Yet, how are the dynamics of this process constituted within the discrete regions? In order to trace these according to the radiocarbon dates, the present author has subdivided the entire greater region into nine geographic units (Fig. 199). Zone 1 corresponds to the northern Aegean with the Great Meander serving as its southern boundary in western Anatolia, and the Greek mainland with Boeotia and the island of Euboea as its south-western extremes. In contradistinction to this, Zone 2 comprises the region around the sea of Marmara with the islands of Samothraki and Imbros/Gökçeada off the Dardanelles. Zone 3 encompasses the current countries of Albania and North Macedonia along with the catchment area of the Struma in south-western Bulgaria bordering to the east. Zone 4 comprises the historical territory of Thrace. Southern and middle Serbia up to the Danube along with Bosnia and Montenegro constitute Zone 5. East of this, Zone 6 describes the regions on the lower course of the Danube, namely northern Bulgaria and Wallachia. The Carpathian Basin is subdivided into Zone 7 to the west and Zone 8 to the east respectively. Zone 9 describes the northern Pontic regions beyond the eastern Carpathians, roughly up to the Dnieper in the east, and with an artificially selected boundary to the north roughly at the latitude of the cities of L'viv and Vinnytsia.

In Zone 1, an extended phase of Mesolithic settlement may be noted, this reflecting the intensive networks mirrored in the distribution of obsidian from the island of Melos (Reingruber 2018). In relation to these networks, the comparatively early establishment of the Neolithic along both

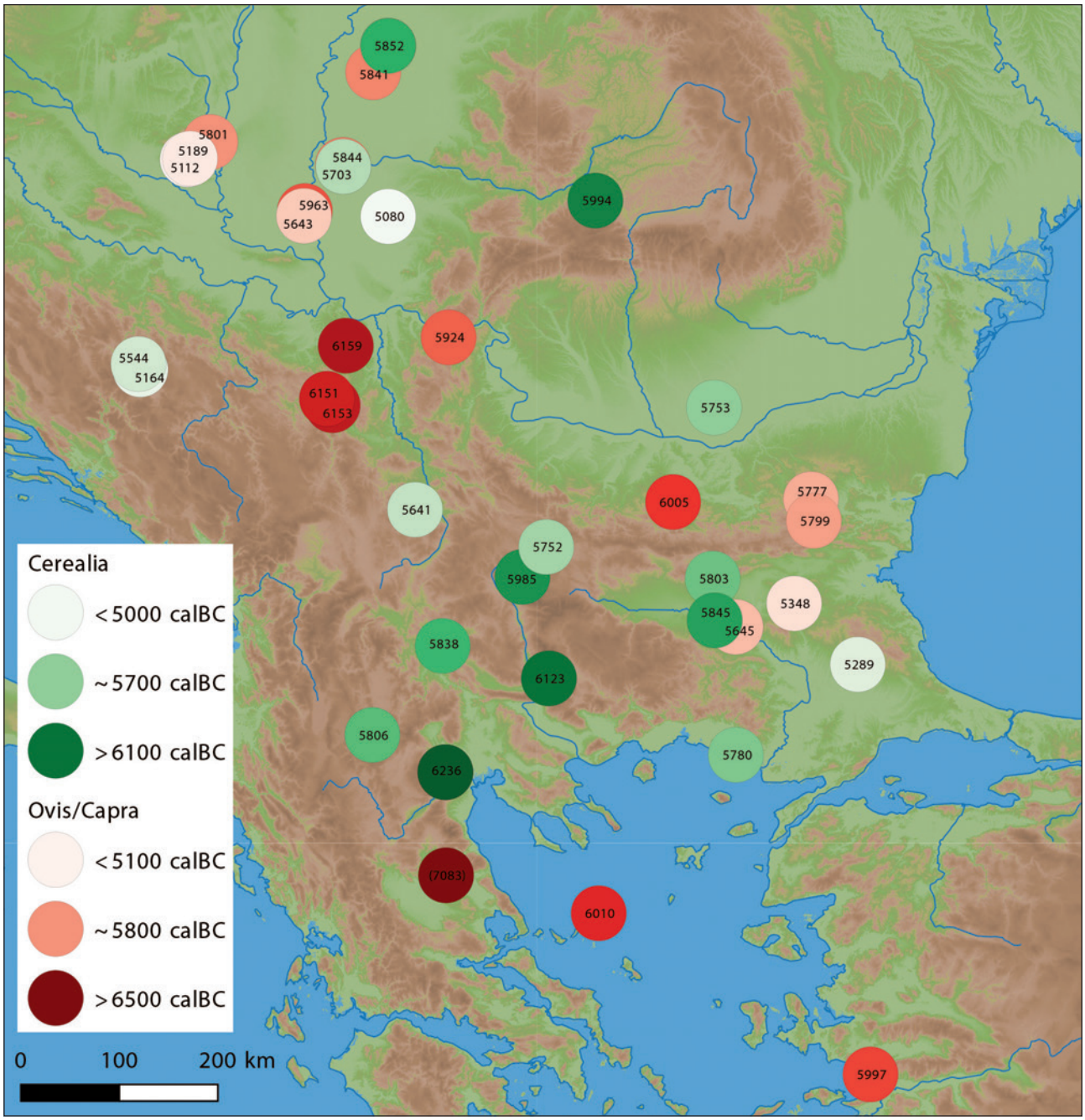


Fig. 198: Mapping of earliest calibrated radiocarbon dates on cereal grains and ovicaprid bones in South-east Europe (R. Krauß, datalist in Tab. 5 and 6).

the eastern and western coasts of the Aegean might, in turn, be observed (Fig. 200). Neolithic settlement begins at Ulucak and Çukuriçi during the 67th century calBC (Weninger et al. 2014, 19–20). The sequence of dates from the sites of Paliambela-Kolindros and Mavropigi-Filotsairi start only a little later (Karamitrou-Mentessidi et al. 2013); there, an onset of the Neolithic settlement from 6600 calBC onwards may be assumed. It seems as if the Mesolithic settlement would have ended come the advent of the Neolithic; thus, Neolithic deposits may be identified c. 6600 calBC at all sites with late Mesolithic levels, including those at Theopetra, in the Cyclops Cave, at Sidari, and at Konispol. With the coming of the 8.2 ka event around 6200 calBC, the Early Neolithic sites in Zone 1 multiplied. Interestingly, their number markedly decreases following the subsiding of the climatic oscillations around 6200 calBC. This decrease is possibly connected with the beginning of the Neolithic settlement in the neighbouring regions to the north. This notion might at

Zone	Site	Labcode	^{14}C Age BP	STD	Material	Species	Source	Mean_2sigma calBC
Zone 1	Achilleion	LJ-3180	7750	60	charcoal		CalPal	6574.5
Zone 1	Agios Petros	BM-2020	6400	80			CalPal	5367
Zone 1	Argissa	UCLA-1657 D	7990	95	bone		CalPal	6908.5
Zone 1	Asfaka	I-1959	7380	240			CalPal	6251.5
Zone 1	Avgi Kastoria	GrN-28445	6660	40			CalPal	5568
Zone 1	Axos, Pella	DEM-668	7589	112			CalPal	6453
Zone 1	Çukuriçi Höyük	Erl-14514	7900	74	bone	*Sus*	CalPal	6821.5
Zone 1	Dimitra	Bln-3189	7470	60			CalPal	6334.5
Zone 1	Dispilio	Ly-6021	6850	35	seed/fruit		CalPal	5744
Zone 1	Ege Gübre	Beta-215599	7290	50	bone		CalPal	6135.5
Zone 1	Elateia	GrN-2973	7480	70	charcoal		CalPal	6286.5
Zone 1	Giannitsa B	DEM-961	7528	65			CalPal	6355
Zone 1	Grammi, Apsalos Aridaia	DEM-1320	7092	25	charcoal		CalPal	5961
Zone 1	Imvrou Pigadi Phthiotis	DEM-1434	6962	25			CalPal	5857.5
Zone 1	Konispol	Beta-56415	7060	110	charcoal		CalPal	5968
Zone 1	Lefkopetra	DEM-1428	7752	40			CalPal	6562.5
Zone 1	Limenaria, Thasos	DEM-566	6577	70	charcoal		CalPal	5505
Zone 1	Makrychori, Larissa	DEM-2158	6417	30	charcoal		CalPal	5398.5
Zone 1	Mavropigi-Filotsair	DEM-1685	7858	60			CalPal	6803
Zone 1	Megali Toumba Agiou Dimitriou	Beta-48508	6150	90	charcoal		CalPal	5077
Zone 1	Megalo Nisi Galanis	DEM-1341	6719	30	charcoal		CalPal	5638
Zone 1	Nea Nikomedeia	P-1202	7557	91	charcoal		CalPal	6413
Zone 1	Orfeas Cave, Alistrati	DEM-1999	7640	30			CalPal	6499
Zone 1	Otzaki Magoula	H-905/3284	7100	90	charcoal		CalPal	5983
Zone 1	Paliambela-Kolindros	DEM-2460	7700	30			CalPal	6530
Zone 1	Plastiras Lake	OxA-18194	7040	34	charcoal		CalPal	5917
Zone 1	Platia Magoula Zarkou	DEM-163	7083	44	charcoal		CalPal	5953
Zone 1	Porta, Ksirolimni Kozani	DEM-1294	7261	28	charcoal		CalPal	6142.5
Zone 1	Prodromos	DEM-2110	6449	35	charcoal		CalPal	5405.5
Zone 1	Revenia Korinos	MAMS-23036	7505	25	bone	*Homo*	CalPal	6345.5
Zone 1	Servia	BM-1157	6905	87	charcoal		CalPal	5809.5
Zone 1	Sesklo	P-1681	7755	97	charcoal		CalPal	6725
Zone 1	Sidari	GX-771	7670	120	charcoal		CalPal	6570
Zone 1	Stavroupoli, Thessaloniki	DEM-1084	6891	60	charcoal		CalPal	5814
Zone 1	Sykeon	Ly-6468	6990	40	charcoal		CalPal	5868.5
Zone 1	Theopetra Cave	DEM-360	7995	73	charcoal		CalPal	6864
Zone 1	Toumba Kremastis Koiladas	DEM-1188	6469	20	charcoal		CalPal	5427.5
Zone 1	Ulucak	Beta-345837	7990	40	bone		CalPal	6876
Zone 1	Varemenoi-Goulon	DEM-1336	7503	35			CalPal	6342.5
Zone 1	Vrysi, Pontokomi	DEM-1156	7247	23			CalPal	6125.5
Zone 1	Yeşilova	KN-5811	7505	30	charcoal		CalPal	6344.5
Zone 2	Aktopraklık	OxA-20596	7444	37	bone	*Homo*	CalPal	6319.5
Zone 2	Barcın Höyük	GrA-52848	7750	40	charcoal		CalPal	6561.5
Zone 2	Hoca Çeşme	Bln-4609	7637	43	charcoal		CalPal	6506
Zone 2	Ilıpınar	GrN-19351	7195	40	charcoal		CalPal	6101
Zone 2	Menteşe	GrN-25819	7550	50	charcoal		CalPal	6363
Zone 2	Mikro Vouni	DEM-505	6657	37	charcoal		CalPal	5560.5

Tab. 7: Selected single radiocarbon date for the beginning of the Neolithic per site (cf. Fig. 199).

Zone	Site	Labcode	^{14}C Age BP	STD	Material	Species	Source	Mean_2sigma calBC
Zone 2	Toptepe	GrN-16476	6290	25	charcoal		CalPal	5263.5
Zone 2	Uğurlu	Beta-448093	7890	30	charred material		CalPal	6834.5
Zone 2	Yarımburgaz	GrN-15533	7640	90	charcoal		CalPal	6455
Zone 2	Yenikapı	ISGS-A2107	7080	20	twig		CalPal	5958.5
Zone 3	Anzabegovo	LJ-2519	7560	70	charcoal		CalPal	6404
Zone 3	Balgarchevo	Bln-2614	6100	50	charcoal		CalPal	5030.5
Zone 3	Čuka	Z-494	7680	160	charcoal		CalPal	6634.5
Zone 3	Dikili Tash	Ly-5018	7655	45	charcoal		CalPal	6512.5
Zone 3	Galabnik	Bln-4096	7140	80	wood		CalPal	6031.5
Zone 3	Govrlevo	Poz-82188	6960	50	bone	*Homo*	CalPal	5855.5
Zone 3	Kovachevo	OxA-20246	7245	36	seed/fruit	*Triticum* sp.	CalPal	6123.5
Zone 3	Kremenik	Bln-2555	6840	60	charcoal		CalPal	5752
Zone 3	Promachon-Topolnitsa	Bln-3381	6270	60	charcoal		CalPal	5210.5
Zone 3	Sitagroi	Bln-885	7980	150	charcoal		CalPal	6916.5
Zone 3	Veluška	Tx-1785	6950	120	wood		CalPal	5842.5
Zone 3	Vršnik-Tarinci	Bln-339	6950	100	seed/fruit	*Triticum dicoccum/ monococcum*	CalPal	5838.5
Zone 4	Aşağı Pınar	Bln-4996	6909	48	seed/fruit		CalPal	5820.5
Zone 4	Azmak	Bln-293	7303	150	charcoal	*Quercus*	CalPal	6172
Zone 4	Chavdar	Bln-1583	7208	52	charcoal		CalPal	6104
Zone 4	Dobrinishte	Bln-3785	6650	60	charcoal		CalPal	5571
Zone 4	Drama-Gerena	Erl-12312	6474	48	bone	*Bos*	CalPal	5424.5
Zone 4	Eleshnitsa	Bln-3238	7010	60	charcoal		CalPal	5870.5
Zone 4	Jassatepe	Bln-338	6080	80	charcoal	*Quercus*	CalPal	5005
Zone 4	Karanovo	Bln-4179	7130	70	charcoal		CalPal	6028.5
Zone 4	Kazanlak	Bln-729	6330	100	charcoal		CalPal	5262
Zone 4	Krepost	OxA-31444	6760	33	bone	*Homo*	CalPal	5673
Zone 4	Krovili	OxA-14353	6980	65	charcoal		CalPal	5859.5
Zone 4	Lafrouda	OxA-14531	6397	36	charcoal		CalPal	5391.5
Zone 4	Makri	GrA-34389	7320	100	charcoal		CalPal	6206
Zone 4	Nova Nadezhda	SUERC-53068	6979	33	bone		CalPal	5866
Zone 4	Slatina	Bln-3504	6970	60	charcoal		CalPal	5857.5
Zone 4	Stara Zagora County Hospital	Bln-1587	7139	65	charcoal		CalPal	6031
Zone 4	Stara Zagora Hlebozavoda	Bln-2512	7020	50	charcoal		CalPal	5893.5
Zone 4	Toumba Kokkinochoma, Proskinites	DEM-23	6368	63	charcoal		CalPal	5346
Zone 4	Yabalkovo	OxA-20173	7040	32	bone	*Homo*	CalPal	5916.5
Zone 5	Ajmana	AA-58322	7219	51	bone	*Homo*	CalPal	6107.5
Zone 5	Alibeg	Bln-1193	7195	100	charcoal		CalPal	6089
Zone 5	Anište-Bresnica	BRAMS-2331	7306	28	bone	*Ovis/Capra*	Porčić et al. 2020	6153.5
Zone 5	Bakovača-Ostra	BRAMS-2329	7299	27	bone	*Ovis/Capra*	Porčić et al. 2020	6151.5
Zone 5	Banya	Bln-873	7048	100			CalPal	5901.5
Zone 5	Bataševo	BRAMS-2227	7331	27	bone	*Ovis aries*	Porčić et al. 2020	6159
Zone 5	Belovode	OxA-14684	6354	36	bone	*Bos*	CalPal	5343.5
Zone 5	Beran-krš	Z-491	6030	60	charcoal		CalPal	4967.5

Tab. 7 continued.

Zone	Site	Labcode	^{14}C Age BP	STD	Material	Species	Source	Mean_2sigma calBC
Zone 5	Blagotin	OxA-8608	7480	55			CalPal	6335
Zone 5	Crnoklište	BRAMS-2290	7293	29	bone	*Bos taurus*	Porčić et al. 2020	6150.5
Zone 5	Divostin	Bln-899	7200	100			CalPal	6091.5
Zone 5	Drenovac	BRAMS-2244	7309	28	bone	long bone *Mammalia*	Porčić et al. 2020	6154.5
Zone 5	Golokut	OxA-10147	6590	50			CalPal	5549
Zone 5	Gomolava	Poz-82186	6520	40	bone	*Homo*	CalPal	5493
Zone 5	Gornja Tuzla	GrN-2059	6640	75	charcoal		CalPal	5593
Zone 5	Grivac	Bln-869	7250	100	charcoal		CalPal	6147
Zone 5	Jaričište 1	OxA-22284	6729	36	bone	*Homo*	CalPal	5641.5
Zone 5	Kudoš-Šašinci	OxA-8558	6770	60			CalPal	5671
Zone 5	Lazarev grad	BRAMS-2225	7225	28	bone	*Cervus elaphus*	Porčić et al. 2020	6117
Zone 5	Lepenski Vir	OxA-2176-18	7285	45	bone	*Cervus elaphus*	CalPal	6147.5
Zone 5	Ludaš-Budžak	OxA-8554	6875	55			CalPal	5772
Zone 5	Magareći Mlin	GrN-15973	7130	60			CalPal	6025.5
Zone 5	Međureč	BRAMS-2251	7316	29	bone	*Bos taurus*	Porčić et al. 2020	6155.5
Zone 5	Miokovci-Crkvine	BRAMS-2323	7366	29	bone	*Bos*	Porčić et al. 2020	6225
Zone 5	Obre	UCLA-1605F	6430	60	charcoal		CalPal	5353
Zone 5	Okolište	KIA-32110-B	6351	48	bone	*Bos taurus*	CalPal	5343
Zone 5	Oreškovica-Selište	OxA-31571	6265	38	antler	*Cervus elaphus*	CalPal	5195.5
Zone 5	Ornice-Makrešani	BRAMS-2223	7335	31	bone	*Cervus elaphus*	Porčić et al. 2020	6160
Zone 5	Padina	OxA-11103	7315	55			CalPal	6210
Zone 5	Petnica	OxA-14754	6091	37	bone		CalPal	5029
Zone 5	Pločnik	OxA-14691	6193	37	bone	*Mammal*	CalPal	5163
Zone 5	Porodin	KN-1596	7240	55	seed/fruit		CalPal	6120
Zone 5	Predionica	Bln-453	6279	80	charcoal		CalPal	5250
Zone 5	Pristina	Bln-435	6280	80	charcoal		CalPal	5251
Zone 5	Rudna Glava	OxA-14623	7198	36	bone	*Cervus elaphus*	CalPal	6101.5
Zone 5	Rudnik Kosovski	BRAMS-2413	7343	27	bone	*Homo*	Porčić et al. 2020	6162.5
Zone 5	Selevac	Z-233	6366	100	seed/fruit		CalPal	5292
Zone 5	Selište-Sinjac	BRAMS-2303	7300	30	bone	*Bos taurus*	Porčić et al. 2020	6152
Zone 5	Sremski Karlovci	BRAMS-2423	7233	28	bone	*Homo*	Porčić et al. 2020	6119.5
Zone 5	Svinjarička Čuka	MAMS-34885	7857	32	charcoal		CalPal	6710.5
Zone 5	Topole-Bač	OxA-8693	7170	50	bone	*Homo*	CalPal	6066.5
Zone 5	Vinča-Belo Brdo	OxA-28638	6757	34	bone	*Homo*	CalPal	5673
Zone 5	Vinogradi-Bečej	OxA-8565	7120	55	bone	*Ovis/Capra*	CalPal	5963.5
Zone 5	Zagrebnice	KIA-45627	6565	30	seed/fruit	*Triticum dicoccum*	CalPal	5544.5
Zone 5	Zmajevac	BRAMS-2264	7328	27	bone	*Bos taurus*	Porčić et al. 2020	6159
Zone 6	Brankovtsi	Poz-120640	6410	40	charcoal	*Cornus* sp.	this study	5394.5
Zone 6	Cîrcea	OxA-17818	6894	37			CalPal	5780.5
Zone 6	Cuina Turcului	OxA-19205	7650	36	bone	*Homo*	CalPal	6510

Tab. 7 continued.

Zone	Site	Labcode	^{14}C Age BP	STD	Material	Species	Source	Mean_2sigma calBC
Zone 6	Dzhulyunitsa	OxA-24937	7588	37	bone	*Sus*	CalPal	6446
Zone 6	Farcasu de Sus	Bln-2285	6080	60			CalPal	5025
Zone 6	Hotnitsa-Orlovka	KN-5769	6370	40	charcoal		Cologne database	5346.5
Zone 6	Icoana	Bln-1056	7445	80	charcoal		CalPal	6265.5
Zone 6	Kachitsa	Bln-1686	6190	50	charcoal		CalPal	5150
Zone 6	Koprivets	Poz-63237	7090	80	bone	*Bos*	CalPal	5920.5
Zone 6	Liubcova	Bln-2133	6175	85	charcoal		CalPal	5084.5
Zone 6	Măgura Buduiasca	PSUAMS-2334	7140	25	bone	*Homo*	CalPal	5996.5
Zone 6	Ohoden	Poz-81112	7060	50	bone	*Homo*	CalPal	5931
Zone 6	Ovcharovo-Gorata	Poz-18480	6900	40	bone	*Bos*	CalPal	5801
Zone 6	Polyanitsa-Platoto	Bln-1571	7535	80	pottery		CalPal	6399
Zone 6	Provadiya	SUERC-31399	6560	35	bone	*Bos*	CalPal	5544
Zone 6	Samovodene	KIA-42165	6635	30	bone	*Bos*	CalPal	5554.5
Zone 6	Tash Bair	Poz-120370	6170	40	bone	*Cervus elaphus*	this study	5107
Zone 6	Vâlcea Copăcelu	KN-1102	6480	75			CalPal	5462
Zone 6	Varbitsa	Poz-108842	6895	35	bone	*Ovis/Capra*	this study	5799
Zone 7	Alsónyék	OxA-X-2583-19	6906	34	bone	*Sus scrofa*	CalPal	5802
Zone 7	Balatonszárszó	OxA-13655	6339	32	bone	*Bos*	CalPal	5338.5
Zone 7	Bátaszék-Lajvérpuszta	Poz-82584	6115	35	bone	*Homo*	CalPal	5075
Zone 7	Becsehely I-Bükkaljai-dűlő	VERA-3081	6185	30			CalPal	5156.5
Zone 7	Budakeszi	MAMS-14140	6171	25	bone	*Homo*	CalPal	5125
Zone 7	Enese elkerülö	Beta-310035	6040	30	bone	*Homo*	CalPal	4934
Zone 7	Enese M85	Beta-31035	6040	40	bone	*Homo*	CalPal	4923
Zone 7	Esztergályhorváti	OxA-6367	6040	55	bone	*Homo*	CalPal	4997
Zone 7	Kustánszeg-Lisztessarok	Bln-1203	6120	100			CalPal	5051
Zone 7	Nitra	OxA-24095	6298	33	bone	*Homo*	CalPal	5284.5
Zone 7	Petrivente-Újkúti-dűlő	Deb-8713	6250	50			CalPal	5186
Zone 7	Pityerdomb	VERA-218	6610	40	charcoal	*Cornus*	CalPal	5550.5
Zone 7	Štúrovo	Bln-559	6260	100	charcoal	*Quercus*	CalPal	5215.5
Zone 7	Szederkény	SUERC-48423	6366	34	bone	*Homo*	CalPal	5345.5
Zone 7	Szemely-Hegyes	Beta-310041	6140	30	bone	*Homo*	CalPal	5103.5
Zone 7	Tolna-Mözs	MAMS-14145	6233	23	bone	*Homo*	CalPal	5184.5
Zone 7	Versend-Gilencsa	SUERC-58578	6399	31	bone	*Bos*	CalPal	5392.5
Zone 7	Vráble	Poz-90168	7030	50	seed/fruit		CalPal	5902
Zone 7	Zalavár	Bln-87	6180	100	organic temper		CalPal	5102
Zone 8	Battonya-Basarága	BM-1862R	6710	110	charcoal		CalPal	5629
Zone 8	Berettyóújfalu-Morotva-Liget	OxA-28101	6726	35	bone	*Homo*	CalPal	5640.5
Zone 8	Nosa-Biserna Obala	OxA-6875	6875	55			CalPal	5772
Zone 8	Bucova Pusta IV	Poz-58612	6940	40	charcoal		CalPal	5848.5
Zone 8	Debrecen Tocopart	OxA-27858	6207	30	bone	*Homo*	CalPal	5172.5
Zone 8	Deszk-Olajkút	OxA-9396	7030	50			CalPal	5902
Zone 8	Dévaványa-Katalszeg	Bln-86	6370	100	organic temper		CalPal	5294
Zone 8	Dévaványa-Réhelyi gát	Bln-1379	6640	60	charcoal		CalPal	5567.5
Zone 8	Donja Branjevina	GrN-15974	7155	50	bone		CalPal	6055.5
Zone 8	Ecsegfalva 23	OxA-9329	6950	45	bone	*Ovis/Capra*	CalPal	5852.5
Zone 8	Endrőd 119	OxA-9587	6915	45	bone	*Ovis*	CalPal	5841.5
Zone 8	Endrőd 35	Bln-1940	6615	60			CalPal	5557

Tab. 7 continued.

Zone	Site	Labcode	^{14}C Age BP	STD	Material	Species	Source	Mean_2sigma calBC
Zone 8	Endrőd 39	BM-1868R	6970	110	charcoal		CalPal	5859
Zone 8	Endrőd 6	OxA-1058	6680	100	charcoal		CalPal	5593.5
Zone 8	Esztar	Bln-2580	6340	60			CalPal	5342.5
Zone 8	Fajsz-Garadomb	Poz-83633	6060	40	bone	*Homo*	CalPal	5022
Zone 8	Fintice, Košariská I	DSH-4410	6292	53	bone		CalPal	5222
Zone 8	Foeni Gaz	GrA-25621	6925	45	bone		CalPal	5844.5
Zone 8	Foeni Sălaș	GrN-28455	7510	60	bone	*Bos primigenius*	CalPal	6348.5
Zone 8	Füzesabony-Gubakút	Deb-5906	6600	55	bone		CalPal	5551
Zone 8	Füzesabony-Szikszói-Berek	Deb-5959	6525	75	bone		CalPal	5476
Zone 8	Garadna	OxA-27732	6185	34	bone	*Homo*	CalPal	5150.5
Zone 8	Giulvăz	GrN-28456	6720	80	bone	*Cervus elaphus*	CalPal	5610.5
Zone 8	Gorzsa	Deb-1202	6050	60			CalPal	5000
Zone 8	Gospođinci	BRAMS-2367	7169	28	bone	long bone *Mammalia*	Porčić et al. 2020	6030.5
Zone 8	Gura Baciului	GrA-24137	7140	45	bone		CalPal	5995.5
Zone 8	Gyálarét-Szilágyi	Bln-75	7090	100	organic temper		CalPal	5977
Zone 8	Hajdúnánás-Eszlári út	Poz-83631	6220	40	bone	*Homo*	CalPal	5175.5
Zone 8	Hejőkürt-Lidl logisztikai központ	Poz-88115	6100	40	bone	*Homo*	CalPal	5032
Zone 8	Hódmezővásárhely-Kotacpart	Bln-115	6450	100	pottery		CalPal	5416
Zone 8	Ibrány-Nagyerdő	Poz-28216	6630	40	bone	fish	CalPal	5553.5
Zone 8	Kečovo, Domica	GrN-2435	6080	75	charcoal		CalPal	5006
Zone 8	Kökénydomb	Deb-1263	6190	60			CalPal	5149
Zone 8	Kompolt-Kígyósér	Deb-5352	6285	105	bone		CalPal	5238.5
Zone 8	Korlat	Bln-119	6440	100	pottery		CalPal	5414.5
Zone 8	Košice, Galgovec	VERA-748	6310	40	charcoal		CalPal	5291
Zone 8	Košice-Červený Rak	Poz-22131	6520	50	organic temper		CalPal	5493.5
Zone 8	Kötelek	VERA-3478	6780	35			CalPal	5677.5
Zone 8	Limba Bordane	GrN-28457	6580	60	bone	*Bos*	CalPal	5509
Zone 8	Lumea Nouă	Poz-19379	7420	50			CalPal	6256.5
Zone 8	Maroslele-Pana	OxA-9403	7765	55	bone	*Homo*	CalPal	6579.5
Zone 8	Méhtelek-Nádas	Bln-1331	6835	60	charcoal		CalPal	5734
Zone 8	Mezőszemere-Kismari-Fenék	Deb-5879	6310	80	bone		CalPal	5266.5
Zone 8	Miercurea Sibiului	OxA-19739	7131	34	seed/fruit	*Hordeum*	CalPal	5994
Zone 8	Mostonga III	GrA-24117	6750	50	bone	*Cervus elaphus*	CalPal	5648
Zone 8	Movila lui Deciov	GrN-28111	6990	50	bone	*Cervus elaphus*	CalPal	5865
Zone 8	Nagykörű-Tsz Gyümölcsös	VERA-3476	7065	35	bone		CalPal	5933
Zone 8	Ocna Sibiului	GrN-28110	7120	60	bone	*Bos*	CalPal	5962.5
Zone 8	Öcsöd-Kováshalom	Deb-1710	6240	60			CalPal	5170.5
Zone 8	Ószentiván VIII	Bln-479	6460	80	charcoal	*Quercus*	CalPal	5418
Zone 8	Parța	Lv-2145	6560	140	charcoal		CalPal	5474.5
Zone 8	Parța Tell II	GrN-28460	6860	60	bone	*Cervus elaphus*	CalPal	5758.5
Zone 8	Pestera La Hotu	Sac-2001	6710	80			CalPal	5606.5
Zone 8	Pitvaros-Víztározó	OxA-9336	7060	45	charcoal		CalPal	5931
Zone 8	Polgár Ferenci hát	OxA-27861	6237	32	bone	*Homo*	CalPal	5185
Zone 8	Polgár-Csőszhalom	Deb-1772	6300	40	charcoal		CalPal	5253

Tab. 7 continued.

Zone	Site	Labcode	^{14}C Age BP	STD	Material	Species	Source	Mean_2sigma calBC
Zone 8	Ribnjak-Bečej	OxA-8564	6750	65	bone	*Ovis/Capra*	CalPal	5643.5
Zone 8	Röszke-Lúdvár	Deb-2730	6972	59	bone		CalPal	5858
Zone 8	Sajan-Dombos	OxA-8566	6815	55			CalPal	5726.5
Zone 8	Šarišské Michaľany, Fedelemka	VERA-768	6210	50	charcoal	*Quercus*	CalPal	5160
Zone 8	Satchinez	Deb-2579	6270	40	charcoal		CalPal	5197
Zone 8	Șeușa-La Cărarea Morii	GrN-28114	7070	60	bone	*Bos*	CalPal	5935
Zone 8	Starčevo	GrN-6628	7615	50			CalPal	6492
Zone 8	Stráne pod Tatrami, Pod Kamenným vrchom	VERA-1821	6415	35	charcoal	*Quercus*	CalPal	5397.5
Zone 8	Szajol-Felsöföld	Deb-473	7100	230	bone	*Homo*	CalPal	5998.5
Zone 8	Szamossályi	Bln-404	6136	100	charcoal	*Fraxinus*	CalPal	5056
Zone 8	Szarvas 23	OxA-9375	6855	55	bone	*Homo*	CalPal	5756
Zone 8	Szarvas 56	OxA-1059	7900	120	charcoal		CalPal	6775
Zone 8	Szentpéterszeg-Körtvélyes	Bln-2578	6800	60	charcoal		CalPal	5698.5
Zone 8	Szolnok- Szanda	Bln-1938	7005	80	charcoal		CalPal	5874.5
Zone 8	Tape-Lebö-A	Deb-1643	6370	60	charcoal		CalPal	5346
Zone 8	Tarnabod	Bln-123	6280	100	pottery	organic temper	CalPal	5237.5
Zone 8	Tarnazsadany	Bln-676	6155	80	pottery	organic temper	CalPal	5078.5
Zone 8	Tărtăria-Gura Luncii	R-1631	6310	65			CalPal	5270
Zone 8	Tiszadob Ókenéz	Poz-83630	6110	40	bone	*Homo*	CalPal	5072.5
Zone 8	Tiszasziget	Bln-1631	6285	60			CalPal	5259
Zone 8	Tiszaszőlős-Domaháza	Deb-11890	6920	50	bone		CalPal	5844
Zone 8	Tiszavasvári	Bln-505	6305	100	charcoal	*Ulmus*	CalPal	5253.5
Zone 8	Tűzköves	Deb-1254	6210	60			CalPal	5157.5
Zone 8	Vésztő-Mágor	Bln-1628	6250	60			CalPal	5199
Zone 8	Vršac-At	OxA-8594	6615	70	bone	*Bos taurus*	CalPal	5538
Zone 8	Zau de Câmpie	Ly-8934	6230	55	charcoal		CalPal	5175.5
Zone 8	Zemplínske Kopčany	Bln-1785	6420	60			CalPal	5352
Zone 9	Babshin	Ki-6656	6200	55			CalPal	5153
Zone 9	Baz'kov Ostrov	KI-8166	7410	65	bone	animal	CalPal	6253
Zone 9	Bernashovka	Ki-6681	6510	55			CalPal	5489
Zone 9	Coțatcu	PSUAMS-1747	6755	30	bone	*Homo*	CalPal	5672
Zone 9	Dobryanka 3	KI-11105	7400	130	bone	animal	CalPal	6244.5
Zone 9	Gard 3	Ki-6655	6930	55			CalPal	5847
Zone 9	Girzevo	Le-1703	7050	60			CalPal	5922
Zone 9	Grebenyukuv yar	Ki-6155	6165	55			CalPal	5123
Zone 9	Isl. Surskoi	Ki-6691	7245	60			CalPal	6119
Zone 9	Mitkov Ostrov	KI-6695	7375	60	bone	animal	CalPal	6233
Zone 9	Okopi	Ki-6671	6330	65			CalPal	5278.5
Zone 9	Pechera	Ki-6693	7305	50			CalPal	6195.5
Zone 9	Pugach 2	Ki-6679	6560	60			CalPal	5502.5
Zone 9	Sabatinovka 2	Ki-6737	6100	55			CalPal	5030
Zone 9	Savran	Ki-6654	6985	60			CalPal	5862
Zone 9	Sokol'cy	Ki-6697	7470	60			CalPal	6334.5
Zone 9	Soroki	Bln-587	7420	80	charcoal	*Ulmus*	CalPal	6256.5
Zone 9	Târpești	Bln-801	6245	100			CalPal	5207.5
Zone 9	Tătărăuca Nouă	KIA-3705b	6340	70	organic temper		CalPal	5279
Zone 9	Trestiana	GrN-17003	6665	45			CalPal	5572
Zone 9	Zamostye 2	GIN-7988	7200	90	bone		CalPal	6047

Tab. 7 continued.

Zone	Site	Labcode	^{14}C Age BP	STD	Material	Species	Source	Mean_2sigma calBC
Zone 1	Youra, Cyclops Cave	Beta-?3	7060	80	bone	*Ovis/Capra*	CalPal	6574.5
Zone 1	Grava	OxA-3401	8840	85	bone		CalPal	5367
Zone 1	Konispol	Beta-79999	7410	80			CalPal	6107.5
Zone 1	Sidari	GXO-770	7770	340			CalPal	6319.5
Zone 1	Theopetra Cave	CAMS-21773	8070	60	bone	*Homo*	CalPal	6089
Zone 4	Demirköy	OxA-12489	9890	45	seed/fruit	*Lathyrus*	CalPal	5802
Zone 5	Ajmana	AA-58323	7065	48	bone	*Homo*	CalPal	6153.5
Zone 5	Alibeg	Bln-1193	7195	100	charcoal		CalPal	6404
Zone 5	Hajdučka Vodenica	AA-57773	6995	83	bone	*Homo*	CalPal	6908.5
Zone 5	Lepenski Vir	AA-58319	6605	56	bone	*Homo*	CalPal	5820.5
Zone 5	Odmut	SI-2223	6530	75	charcoal		Cristiani, Borić 2016	6251.5
Zone 5	Padina	AA-57769	7078	85	bone	*Homo*	CalPal	5568
Zone 5	Vlasac	Z-264	6335	92	charcoal		CalPal	6453
Zone 6	Icoana	AA-65563	7245	62	bone	*Sus*	CalPal	6172
Zone 6	Măgura Buduiasca	PSUAMS-2334	7140	25	bone	*Homo*	CalPal	5153
Zone 6	Ohoden	Poz-82519	7650	50	bone	*Cervus elaphus*	this study	6151.5
Zone 6	Ostrovul Corbului	GrN-12675	7640	80	charcoal		CalPal	5338.5
Zone 6	Ostrovul Mare	AA-66379	7890	78	bone	*Sus*	CalPal	5030.5
Zone 6	Schela Cladovei	OxA-9358	6695	55	bone	animal	CalPal	5901.5
Zone 8	Jászberény I	Deb-3155	7154	62	soil		CalPal	6561.5
Zone 8	Lumea Nouă	Poz-19379	7420	50			CalPal	6159
Zone 9	Mirnoe	Le-1648	7200	80			CalPal	5075
Zone 8	Foeni Gaz	Poz-38230	7830	50	bone	*Bos*	Krauss, Ciobotaru 2014	5629
Zone 8	Ecsegfalva 23	OxA-12857	7944	44	bone	*Bos*	CalPal	6253
Zone 8	Maroslele-Pana	OxA-9403	7765	55	bone	*Homo*	CalPal	5156.5

Tab. 8: Selected single radiocarbon date for the end of the Mesolithic per site (see Fig. 197).

least be presumed, if the advent of Neolithic settlement in Zone 3 is considered.

First, however, an examination of Zone 2, the Marmara region, is necessary (Fig. 201). Unfortunately, no ^{14}C dates are yet available for the supposed pre-Neolithic sites at the transition of the Bosporus into the Black Sea. The data series from Uğurlu and Barcın Höyük indicate that a date at around 6600 calBC for the establishment here of the Neolithic might be assumed. In contrast to central western Anatolia, there is no significant break in settlement following the close of the 8.2 ka event, as the data series from sites such as Ilıpınar, Yarımburgaz, Menteşe, and Hoca Çeşme continue after this point.

As previously mentioned, the Neolithic settlement in Zone 3 immediately follows the break in the data series in Zone 1, and more precisely with the end of the 8.2 ka event (Fig. 202). Only a few earlier dates are known from Dikili Tash. Nevertheless, this site also lies closer to the coast, and can also be ascribed to the Aegean zone with good reason, being less heavily affected by the climatic caprices during the 8.2 ka event. The data series of Anzabegovo, Kovachevo, and Galabnik beginning after 6200 calBC are significant for the expansion of the Neolithic along the river valleys of the Axios/Vardar and the Struma. The dates cluster once more after 6000 calBC, which might be attributed to an increase in the number of settlement sites. Radiocarbon dates from the period prior to the Neolithic occupation are also entirely lacking here, should one wish to avoid overvaluing the individual older data from Sitagroi and Čuka.

There are also no attestations for an occupation immediately preceding the Early Neolithic within Zone 4, the Thracian countryside (Fig. 203). The three dates from Demirköy in the Strandzha region belong to the early Holocene, and thus to a much earlier period. Tellingly, the Early Neolithic dates prior to 6000 calBC come exclusively from the site of Chavdar situated at the transition to Zone 4 on the plateau of



Fig. 199: Zoning for the evaluation of the radiocarbon dates in South-east Europe (R. Krauß).

Sofia, which immediately borders upon the drainage basin of the Struma River. The two earliest dates from the series from Karanovo should not be overestimated, as these comprise old conventional measurements on wood. The earliest date from Makri is conversely interesting, as this site lies on the Aegean, where continued settlement during the 8.2 ka event is not unusual. More striking is rather the swift introduction of the Neolithic settlement in the Thracian plain after 6000 calBC, that is, following the Neolithic occupation of not only the central Balkans, but also northern Bulgaria. It might accordingly be presumed that the neolithisation did not proceed from the Marmara region bordering to the south-east, but rather from the Struma Valley or from northern Bulgaria. This observation based upon ceramic analysis would seem to be confirmed by the ^{14}C dates.

Zone 5 encompasses the Serbian parts of the Danube Gorges (Fig. 204). Accordingly, the uninterrupted series of the Mesolithic sites such as Padina, Vlasac, Hajdučka Vodenica, and Lepenski Vir may be studied. Within this particular environment, a lifestyle focused particularly on fishing continues until well into the 6th millennium BCE. A similar phenomenon may be noted at Odmut in Montenegro (to name an example). Even if these merely comprise multiple individual dates from sites, an onset of Early

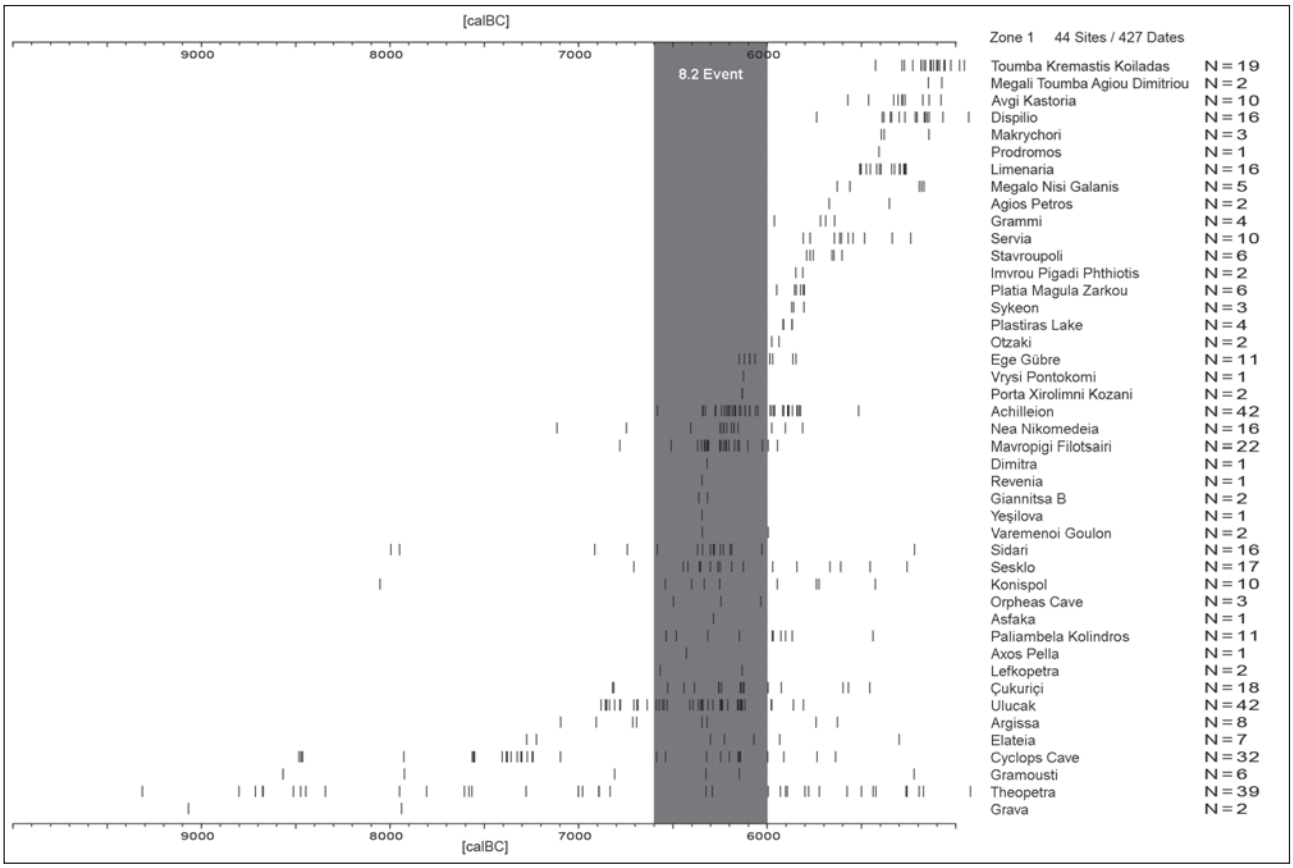


Fig. 200: CalPal barcode calibration of radiocarbon dates (CalPal database © Bernhard Weninger) of the sites in Zone 1 (northern Aegean, see Fig. 199) sorted by leading edge (P=40%).

Neolithic settlement can clearly be seen here immediately following the 8.2 ka event. Naturally, differences may also be discerned within this expansively delineated area additionally subdivided by high mountain chains. Accordingly, the earliest Neolithic dates from Bosnia and Croatia all fall after 6000 calBC.

Zone 6 (its neighbour to the east encompassing the lowlands of the Lower Danube) presents a highly comparable trajectory (Fig. 205). As an artificial boundary has been drawn along the Danube, the sites of the Romanian bank of the Danube Gorges fall within this area. Accordingly, we also witness here a continuous data series of the Mesolithic sites such as Icoana, Schela Cladovei, and Cuina Turcului. The series from Răzvrata, Ostrovul Banului, and Ostrovul Corbului end earlier. Beyond the zone of the Danube Gorges, three Mesolithic dates are first to be found at the site of Ohoden. The beginning of the Neolithic settlement in the region is also to be placed briefly after 6100 calBC according to the present author's evaluation of the dates on the basis of the settlement stratigraphy of Dzhulyunitsa (Krauss et al. 2014). The two earliest dates from this site are to be viewed critically, much akin to the old measurements from organic ceramic admixtures from Polyanitsa-Platoto. From 5700 calBC, a significant intensification of dates may be described, which is not only the product of a definitely real densification in occupation from this period onwards but is also based on the good state of research on these sites. The dates from this chronological and spatial context have already been discussed in depth in connection with the evaluation of excavations at Ovcharovo-Gorata (Krauss 2014, 280–294. – Marinova, Krauss 2014). Until the recent research at Măgura Buduiasca and Varbitsa, there was a lacuna in the dates between the Early and Late Neolithic; this may now be closed by means of good data series from these two sites. The dataset from Varbitsa is currently unpublished, and will be presented by Brandtstätter within his dissertation.

The two-stage development of the Neolithic in the regions south and north of the CEB AEB is described in the Early Neolithic data series of Zone 7, the western Carpathian Basin (Fig. 206). Hence, the data series from Alsónyék begins around 5800 calBC, followed by those from Pityerdomb. In the northern regions, the Neolithic starts with the LBK after 5500 calBC, and then displays a very swift intensification. The sudden increase in dates

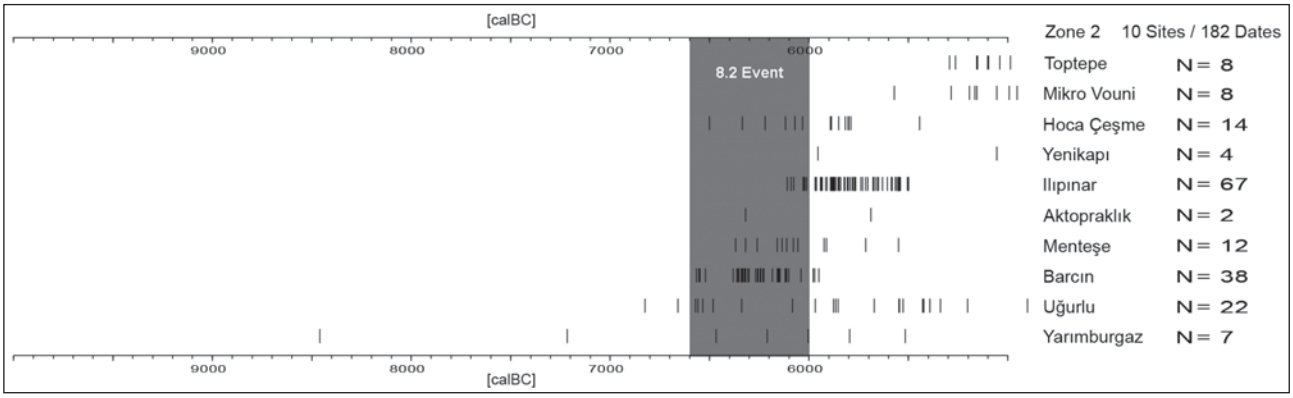


Fig. 201: CalPal barcode calibration of radiocarbon dates (CalPal database © Bernhard Weninger) of the sites in Zone 2 (Marmara region) sorted by leading edge (P=40%).

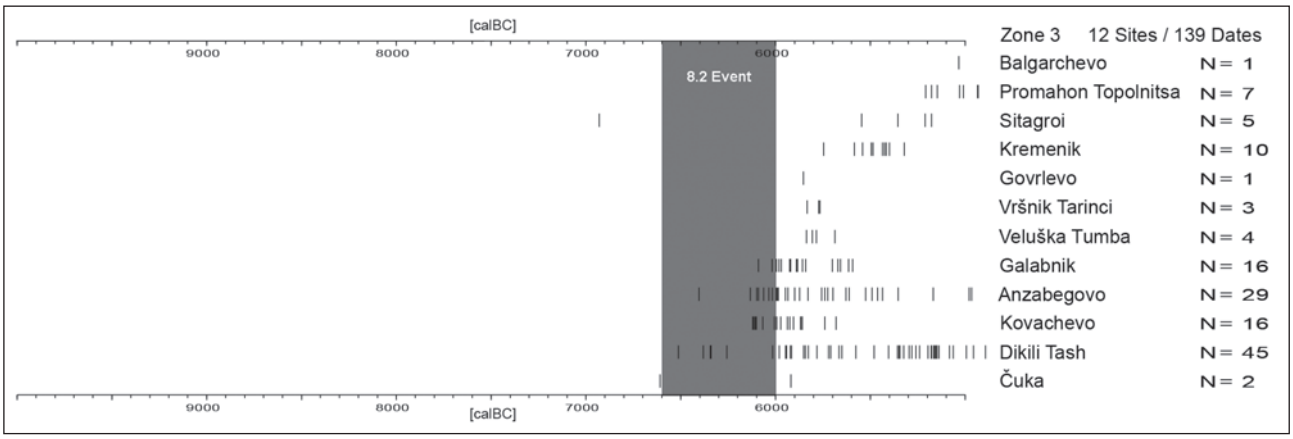


Fig. 202: CalPal barcode calibration of radiocarbon dates (CalPal database © Bernhard Weninger) of the sites in Zone 3 (Albania, North Macedonia and the Struma River Valley) sorted by leading edge (P=40%).

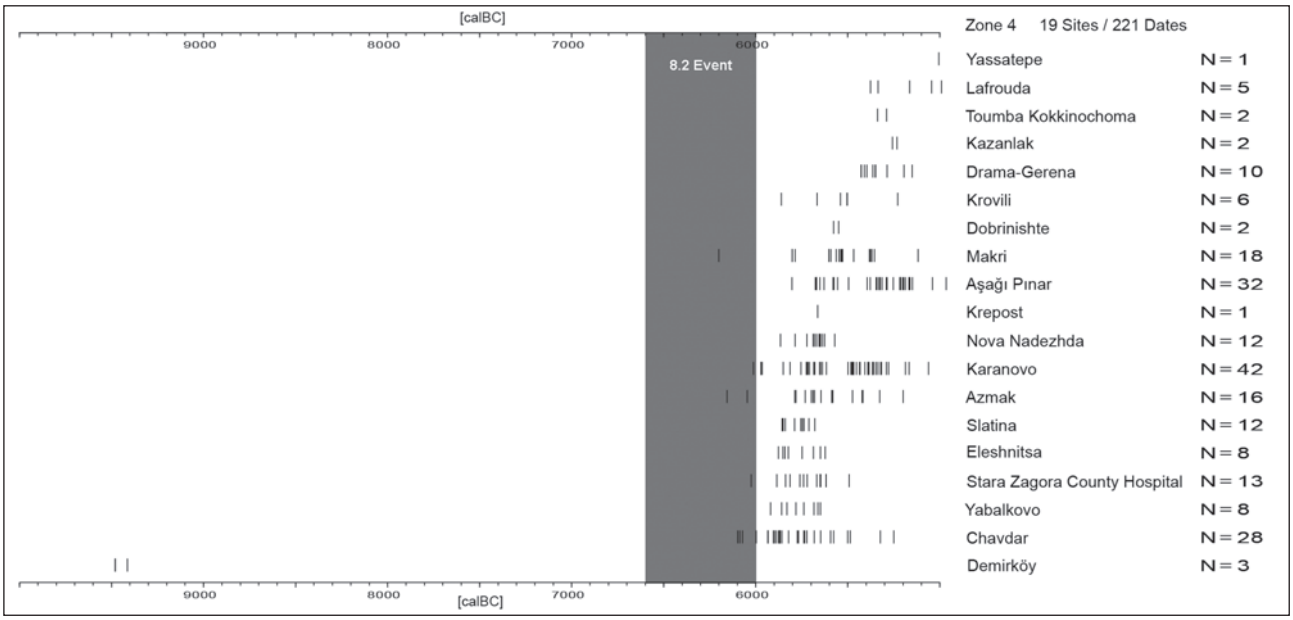


Fig. 203: CalPal barcode calibration of radiocarbon dates (CalPal database © Bernhard Weninger) of the sites in Zone 4 (Thrace) sorted by leading edge (P=40%).

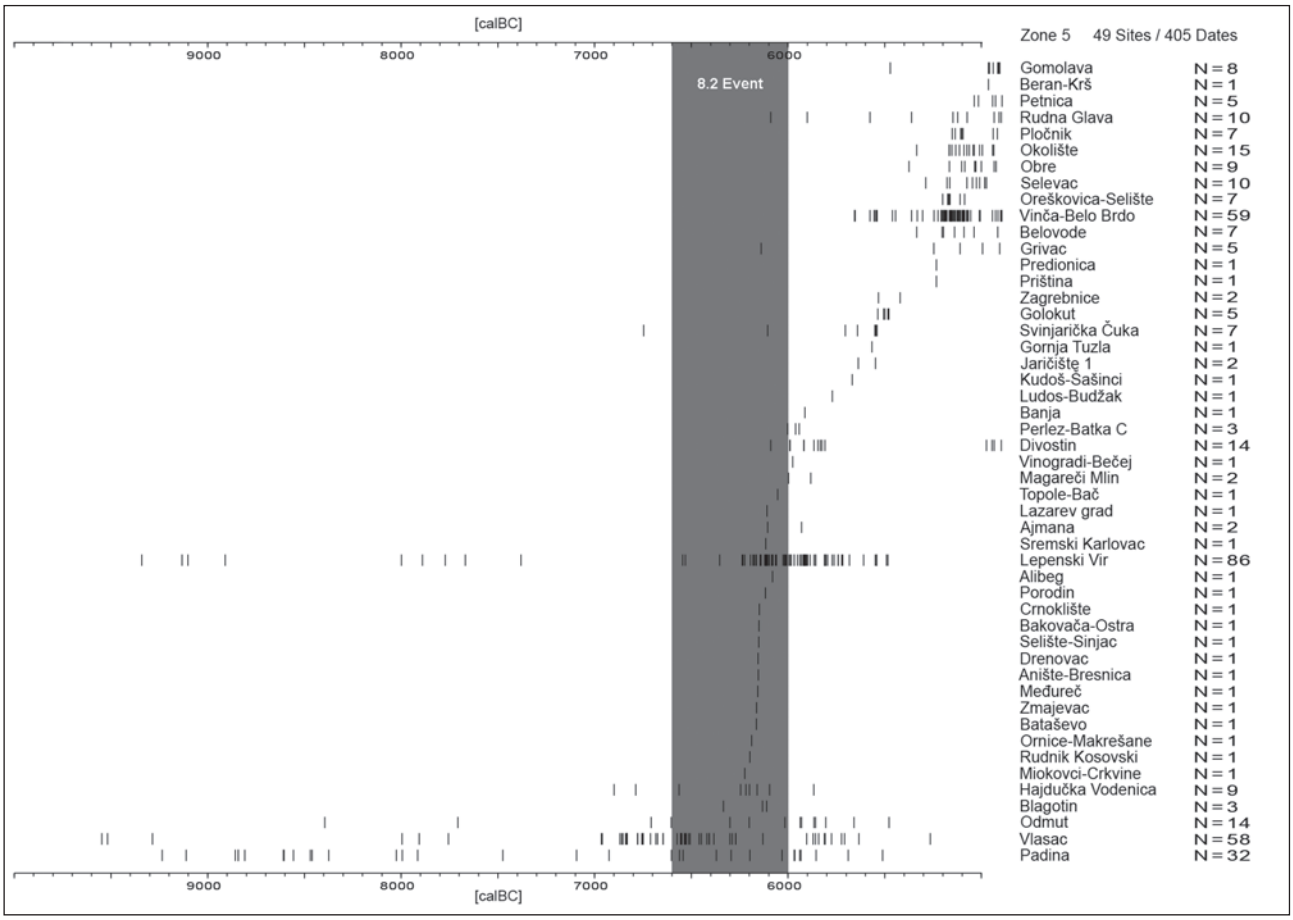


Fig. 204: CalPal barcode calibration of radiocarbon dates (CalPal database © Bernhard Weninger) of the sites in Zone 5 (southern and middle Serbia, Bosnia and Montenegro) sorted by leading edge (P=40%).

is remarkable. The cultural-historical processes for Transdanubia have been plausibly explained (Bánffy 2004, 317–352). Roughly at the elevation of the Balaton, the expansion of the Balkan Neolithic encounters a natural barrier, which might be termed more ecologically than topographically (Sümegi, Kertész 2001). After 5500 calBC, a volatile expansion of the Neolithic into the northern regions occurred with the emerging LBK; this might be explained for the most part by a population migration (Hofmanová et al. 2016). Unfortunately, no ^{14}C dates currently exist for the pre-Neolithic settlement from this zone.

Despite this, individual dates from the Mesolithic exist from Zone 8, the eastern Carpathian Basin (Fig. 207), including the site of Jászberény I; these fall chronologically parallel with the Early Neolithic from the central Balkans bordering to the south. As previously mentioned, individual Mesolithic dates occur time and again within Early Neolithic contexts, the interpretation of which is accordingly difficult. The introduction of Neolithic settlement is to be expected from 6000 calBC onwards, initially pertaining to the southern areas. A successive expansion northwards without any significant jumps in the data series may be established. This is a decisive difference to the trajectory of the dates within Zone 7. This dispersal took place, on the one hand, directly from the south up the course of the Tisza and, on the other hand, from Transylvania travelling downwards from the source of the Tisza (Bomboróczki, Raczky 2010). The existing networks for supplying Neolithic communities with obsidian from the northern bend of the Carpathians served as the impetus for this; these were originally purely Mesolithic in character (Kozłowski, Nowak 2010). The successive and, in contrast to the western Carpathian Basin, not erratic spread of the Neolithic could be a further indication that neolithisation within this zone did not primarily occur through the expansion of an agrarian population, but rather through cultural adoption of Neolithic innovations by the local Mesolithic populace.

The situation in the area defined as Zone 9 is once more fundamentally different (Fig. 208). Dates from its

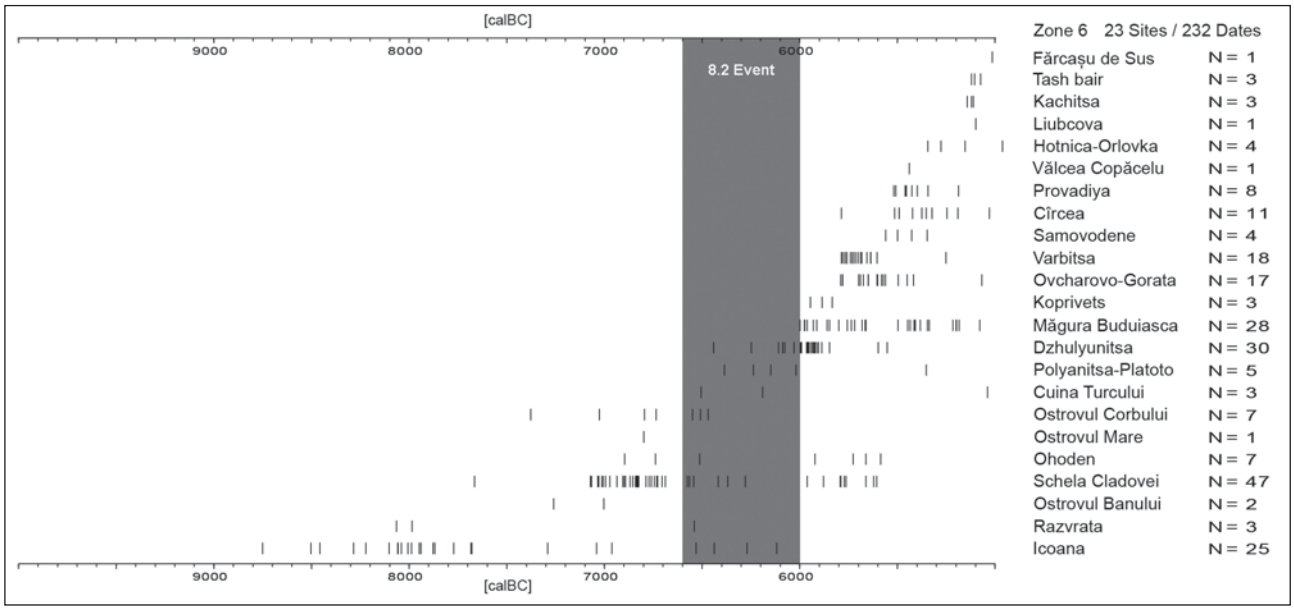


Fig. 205: CalPal barcode calibration of radiocarbon dates (CalPal database © Bernhard Weninger) of the sites in Zone 6 (Lower Danube) sorted by leading edge (P=40%).

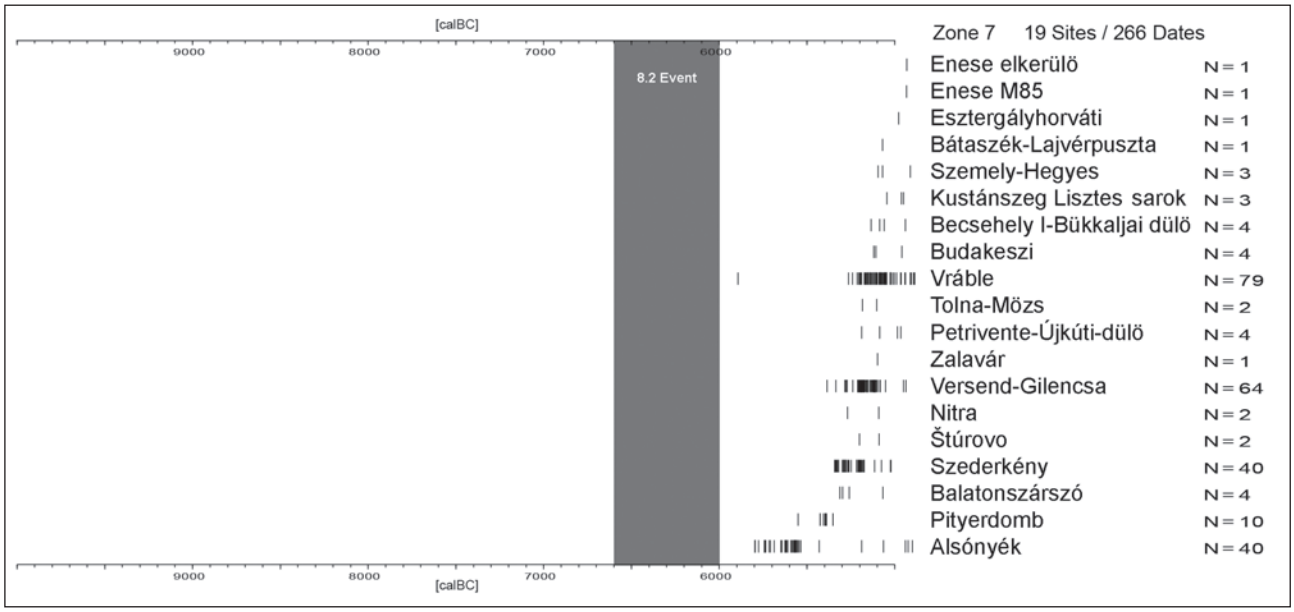


Fig. 206: CalPal barcode calibration of radiocarbon dates (CalPal database © Bernhard Weninger) of the sites in Zone 7 (western Carpathian Basin) sorted by leading edge (P=40%).

settlements already begin at the end of the 7th millennium BCE; these were demonstrably established by groups using and producing pottery. By means of contrast with the Mesolithic data series from Soroki and Mirnoe, those from settlements with pottery are strikingly brief. This is a decisive contrast to all other zones and a clear attestation for the settlements' brief duration of occupation. The dates constantly develop further and demonstrate no significant interruptions. Finally, the complete lack of dates from domesticated animal bones and carbonised grains is remarkable. This may well serve as independent evidence that this zone presents an economy that was set up fundamentally differently to that of the Neolithic regions bordering to the west and south.

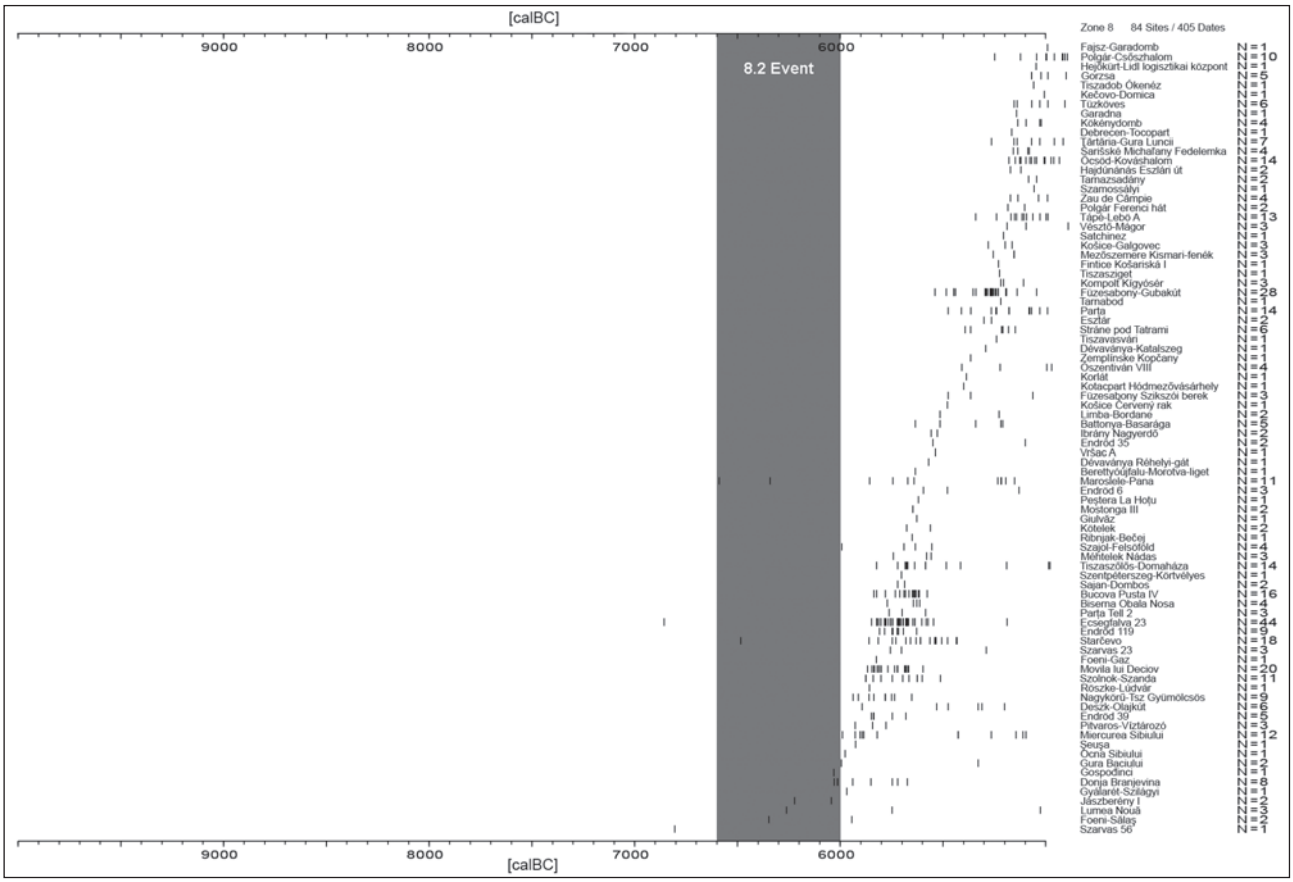


Fig. 207: CalPal barcode calibration of radiocarbon dates (CalPal database © Bernhard Weninger) of the sites in Zone 8 (eastern Carpathian Basin) sorted by leading edge (P=40%).

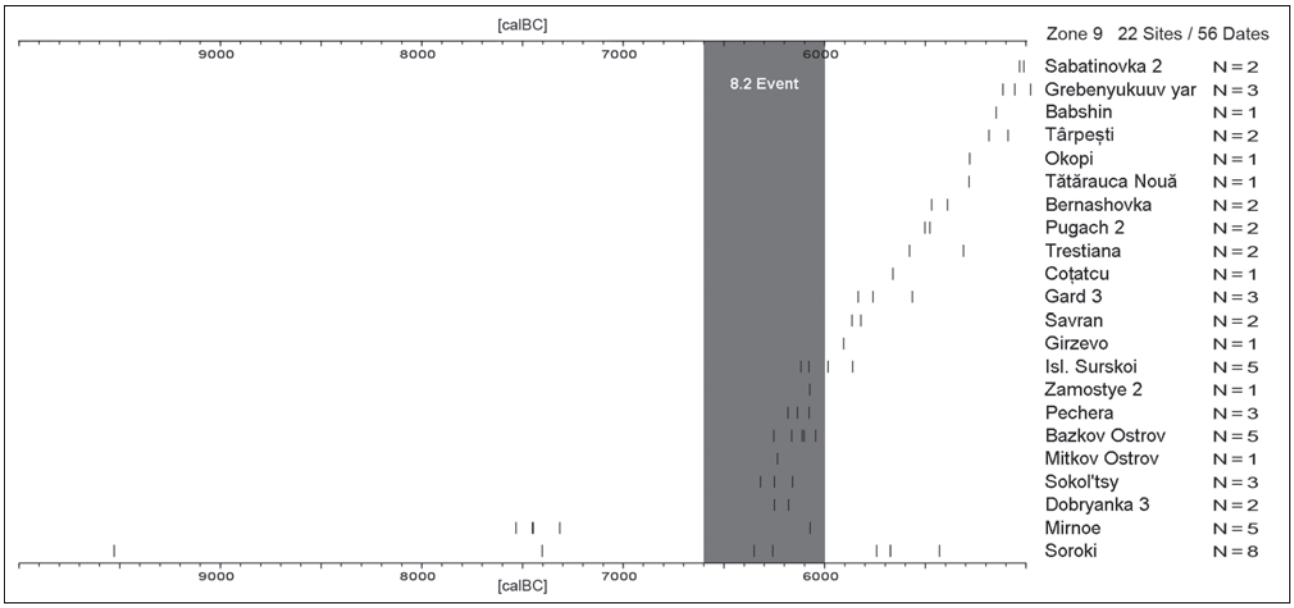


Fig. 208: CalPal barcode calibration of radiocarbon dates (CalPal database © Bernhard Weninger) of the sites in Zone 9 (north-western Pontic) sorted by leading edge (P=40%).

11. The Cultural Legacy of the South-eastern European Neolithic

As has been seen, there are no indications in the slightest that Neolithic cultural technologies had developed independently within the Balkan-Carpathian sphere. There has already long been a consensus that the most important early cultivated cereals such as emmer, einkorn, and barley were grown in the Near East (Watkins 2007). The wild predecessors of the first domesticated animals such as sheep and goats also originate from there. Moreover, even if it were theoretically possible to domesticate pig and cattle from the wild forms present in South-eastern Europe, it is now known that domesticated pig and cattle had already arrived as domesticated animals in Europe (Bollongino et al. 2012. – Scheu 2012. – Geörg 2013). The notion that these herds and grain cultivars could not have reached Europe without their herdsmen and cultivators is to be assumed, but remained a source of debate prior to the appearance of human genetic evidence of a concomitant migration of people into South-eastern Europe. It is now clear that the old Mesolithic population had next to no part in the planting of fields, husbandry, and sedentary life. Instead, the early farmers came from the western Aegean and migrated into the Balkans and the Carpathian Basin by way of the northern Aegean (Lazaridis et al. 2014. – Hofmanová et al. 2016. – Mathieson et al. 2018). It would thus seem that house architecture, ceramic production, and millstone technology also reached South-eastern Europe with sedentism and agriculture. It is only in the case of polished stone tools that it might be considered whether they might not already have been present or adopted from other regions, as polished stone tools also already occur in Eastern and Central Europe in Mesolithic contexts, although rarely.

11.1. Eating Habits and Interior Design

Table manners must also have changed with the menu. The production of pottery is the best expression of this. For the first time in cultural history, we now witness not only how food was stored and prepared, but also how people ate and drank. Many of the ceramic vessels can be interpreted as dinnerware. There are a large number of different bowls, dishes, and cups which may have been used for serving and consuming the food in question. The addition of cereal products to the diet requires new types of processing and thermal treatment. The grain must be ground, scalded or boiled, and perhaps also kneaded into dough and baked. Moreover, with a more reliable supply of carbohydrates, the production of alcoholic beverages will also have become possible for the first time in cultural history, offering new social opportunities. Perhaps the production of alcohol was even the driving force behind the introduction of agriculture (Reichholf 2008, 259–264). Many cups and bowls could have served as drinking vessels, either as individual vessels or as collective containers from which several people would drink one after the other. However, it is quite possible that alcoholic beverages and other intoxicants were produced as early as the Palaeolithic and Mesolithic (Maurizio 1933).[32] Honey from wild bees and fruits which could be fermented were already available. With the emergence of the Neolithic, however, the use of alcoholic beverages seems to be more the rule than the exception, if only because the quantities

32. On this point I am very grateful to one of the anonymous reviewers for the additional literature references.

of carbohydrates necessary for production were regularly available in larger quantities via agriculture for the first time in human cultural history. The intensive use of wild cereals in the Epi-Palaeolithic of the Middle East could have been a prerequisite for this (Hayden, Canuel, Shanse 2013). The history of wine made from fruit could have started just as early, albeit certainly without the grapevine, which was only cultivated much later (McGovern 2003).

This area also includes the use of milk, which has been attested in Anatolia and South-eastern Europe with the beginning of the use of ceramic vessels (Evershed et al. 2008). How people used to eat is a fertile ground for speculation. The fork can certainly be regarded as the very last addition to our western cutlery. The introduction of such a distinguished device to the table at the end of the Middle Ages (first in court society, and only much later among commoners) is well reflected in historical sources (Zischka, Ottomeyer, Bäumle 1994). Cutting knives must have been in use much earlier, although certainly initially only for food preparation, and not for use at the table. In the Neolithic, as in all the previous millennia, food was certainly cut and portioned with stone tools. For practical reasons, this must surely have been done before the food was put on the table. Interestingly, there is not much evidence for ceramic plates; the general lack of flat dishes could well be an indication that the food was already prepared and cut into bite-sized pieces prior to serving. In many cases, the dinnerware itself is so handy and ergonomically shaped that it is possible to eat directly from it. Neither chopsticks nor spoons are needed to transport porridge, soup or previously chopped food from the vessel to the mouth. The well-known ceramic spoons and bone spatulae are not numerous enough to have served as tablespoons. Asymmetrical signs of wear and tear are particularly evident on the spatulae, which are more indicative of their use as tools, for example to form pottery (Zidarov 2014, 255–259). It might at least be presumed that the food was eaten or slurped straight out of the bowls, dishes, and mugs, as is still common today in many parts of the world. The representations of vessel-holding figurines (Schwarzberg 2011, 49–53) can perhaps also be interpreted in this regard. Eating with fingers only appears unusual from a Western perspective. In truth, it is the only natural way to eat. Picking food up with chopsticks, as is common in large parts of Asia today, could also be a comparatively late, distinguished way of eating. It is quite possible, however, that sticks, skewers or other types of aids were already used in the Neolithic to fish certain chunks out of a hot vessel. However, even then, some time might have to pass to cool the food before eating a delicious bite. In this respect, the present author assumes for the time being that people ate directly from dishes in the Neolithic.

The inventory of furnishings in the house, including pictorial representations, is not so numerous that one can imagine sitting (especially on chairs) at a high table. Rather, it seems more likely that people would crouch on the floor to eat together, as is customary in large parts of the world even today. Mats, blankets, or smaller boards would be perfectly adequate as surfaces upon which to serve a meal. Individual miniature pieces of furniture such as tables and chairs in the well-known figurine groups of the South-eastern European Copper Age are so rare that they hardly seem to be images of real furniture, even in connection with the way in which the associated figures are depicted (cf. Hansen 2007, pls. 233–234; 255/1; 314; 325/10; 336/15–25; 340–342; 355–357; 431/10–12). Even in much later cultural-historical contexts, only selected groups of persons sitting on special furniture are generally depicted. One might think, for example, of the group of figures on the frieze of the Parthenon Temple in Athens (Boardman 1991, 96–136). The well-known female figurine from Çatalhöyük, possibly the oldest representation of a person positioned on a seat, is enthroned rather than sitting (cf. Hansen 2007, pl. 57/10); all similar representations from the South-eastern European Neolithic might be understood analogously.

11.2. A Few Words about Music

Unfortunately, a Balkan orchestra for weddings and funerals cannot be reconstructed from the extant archaeological record. Yet, it would be at least as naive to believe that the actions and cultural practices partially preserved in archaeological finds were performed in absolute silence. Always and at all times, rituals have been accompanied by music, especially all manners of rite of passage. Since the social aspect becomes even more important within sedentary communities, an increase in musical performance practice can be expected with the beginning of the Neolithic. All basic types of musical instruments had been developed during the long preceding eras of the Palaeolithic and Mesolithic. The diverse spectrum of idiophones, membranophones, aerophones, and chordophones can therefore be regarded as already known to the European Neolithic. This is hardly the place to collect all of the indications for the interpretation of various finds as musical instruments; rather, a few remarks on selected aspects of organology added to the inventory with the Neolithic should suffice.

The material clay makes many things noticeable which were previously less visible on account of their organic constitution. Drums made of organic materials as known today from many cultures appeared in ceramic form for the first time in the Neolithic. One example is an hourglass-shaped piece from Dyakovo (Fig. 209). In the field



Fig. 209: Dyakovo. Ceramic drum from the Chalcolithic settlement (after Krauss 2001).

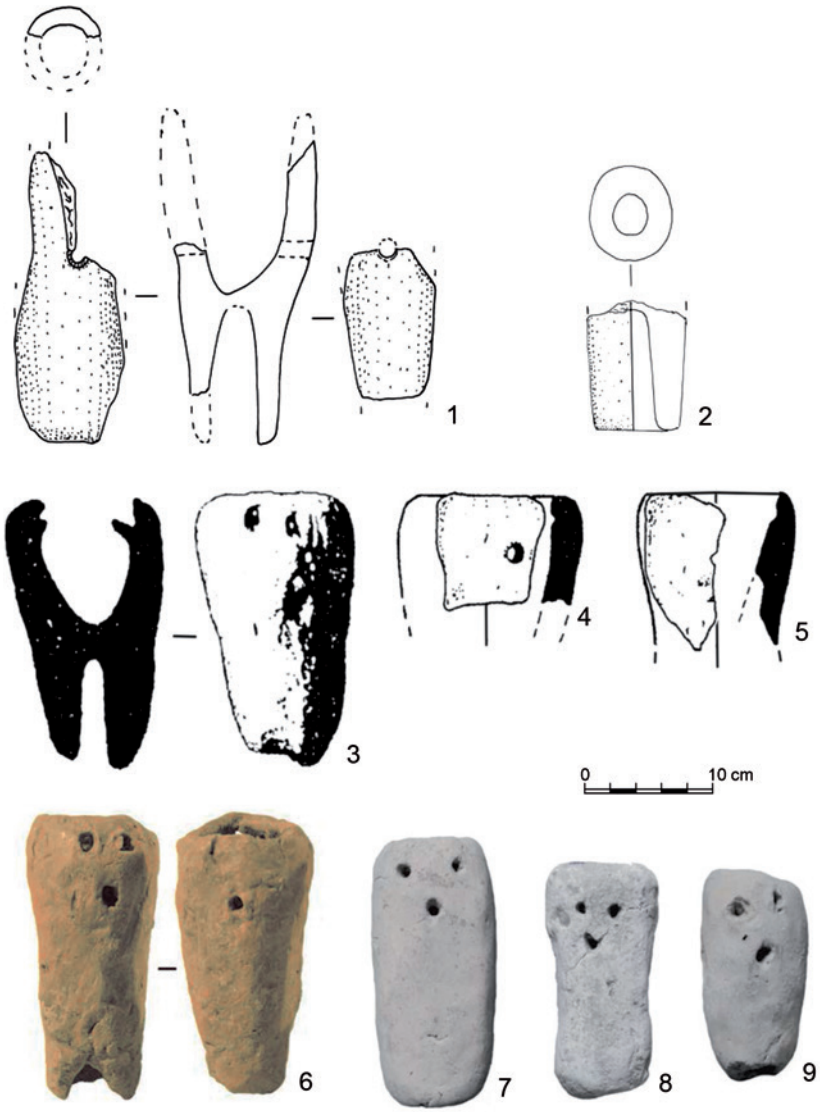


Fig. 210: Examples of probable Early Neolithic vessel flutes. – 1–2. Brunn am Gebirge. – 3–5. Gellénháza. – 6. Ovcharovo-Gorata. – 9. Hotnitsa (after Pomberger, Kotova, Stadler 2018).

Ocarina / Pitch / Opening hole	M341: 7–1		M341: 7–2	
	Cent	Frequency	Cent	Frequency
2+4+5	G6+9	1576.95	G6+19	1585.778
3+4+5	G6+9	1576.57	G6+37	1602.58
1+2+3+4	#G6–12	1650.45	#G6–11	1651.03
1+2+3+5	#G6+19	1679.62	#G6+19	1643.84
1+3+4+5	#G6+6	1667.83	#G6–9	1653.46
1+2+4+5	#G6–11	1651.50	#G6–16	1646.77
2+3+4+5	A6–9	1751.40	A6+3	1763.72
1+2+3+4+5	#A6–36	1826.49	#A6–24	1839.10

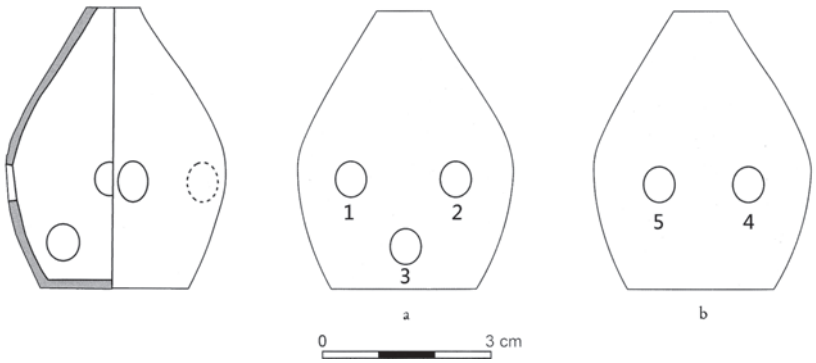


Fig. 211: Luoyang Beiyao, Henan (China). Schematic representation of an ocarina (clay flute) from tomb M341 (c. 1046–922 BCE) with finger holes on the front and on the back of the instrument. The upper table shows the playable tones (after Jianjun 2016, 132).

of idiophones, a completely new soundscape opened up with the beginning of metallurgy: How the first ring of a struck piece of metal must have affected its audience! Perhaps there is much more magic in it than just its sparkling sheen. Even if brass instruments were still a long way off, the foundations for this group of instruments were laid in the Neolithic. The shell of a large sea snail can also be blown like a trumpet. The bow and arrow, as the simplest types of chordophones, have been known for a long time, but we still lack lyres, harps, and zithers in the archaeological record, not to mention violins and cellos. Nevertheless, the twanging sound of the plucked bowstring has been part of the human sound repertoire since the Palaeolithic. Flutes and pipes have also been known for a long time. In the search for representatives of such instruments in ceramic form, a special type of 'idol' went unnoticed for a long time, being first identified as clay pipes by Beate Pomberger (Pomberger 2010. – Pomberger, Kotova, Stadler 2018). The present author was also long sceptical of this identification as musical instruments, but the long period of time in which this type of tube with punctures on its front and back was used in South-eastern Europe is remarkable (Fig. 210). There is a fragment from the Early Neolithic settlement of Ovcharovo-Gorata. Similar finds from the LBK settlement at Brunn am Gebirge date a little later. They then appear in large numbers in the Chalcolithic tell settlements of the 5th millennium BCE in the area of the Lower Danube. In this respect, a functional interpretation must be assumed which contributed to the retention of this simple form for more than 1000 years. Musical instruments meet these requirements. Ultimately, the traditional Chinese instrument called the xun (Jianjun 2016), an ocarina or clay flute which is very similar in appearance to the Neolithic and Chalcolithic pieces from South-eastern Europe, is decisive in such an identification (Fig. 211); its similarity is derived from its mere functionality, rather than any manner of cultural contact. In turn, the rattle vessels which often appeared in the South-eastern European Chalcolithic, many of which are human or animal-shaped (Schwarzberg 2011, 60–61), can be clearly identified as sound-producing objects.

Instrument finds, however, are only a small part of musical practice. This, in turn, is only part of the social sphere as a whole. Admittedly, it remains impossible to determine whether some of the figurines and painted motifs on the ceramics of the South-eastern European Neolithic



Fig. 212: Movila lui Deciov. Two 'singers' from the Early Neolithic settlement (H. Jensen).

depict singing people or dancers (Fig. 212). However, vice versa, why should such an important pictorial theme be completely absent in the visual inventory of the European Neolithic? An important point is also that with sedentism comes the possibility for the first time of designating fixed spaces for regular social events. In this context, the areas in between buildings, namely courtyard areas and open spaces between houses, are much more important than the built-up areas within a settlement. The closer coexistence of people as a result of the Neolithic lifestyle provides the basis for new types of music-making which are still integral to daily life today. Singing, dancing, and making music are anthropological constants (Jackendoff 2002. – Mighten 2005. – Morley 2013). With the dawn of the Neolithic, they can be grasped visually for the first time (Garfinkel 2003), which perhaps brings these cultural groups closer to us emotionally.

11.3. Symbolic Aspects

A fundamental change in the representational world is also tangible during the different neolithisation processes in Europe. In the course of the Neolithic, small pendants made of green rock became important in the Balkans. Often, they have the shape of a swastika or the letter M (Fig. 213). These objects do not mark a specific period because they are spread over a long time from the second half of the 7th to the 5th millennium BCE. In the course of development, an increasing abstraction can be observed in these representations (Krauss 2014, 168–171). One thing these pendants have in common is that they are all made from green stones. Geologically, these are different materials, such as nephrite, slate, jadeite, or serpentinite. Some of the later pendants from the South-eastern European Chalcolithic are made also of copper (Hansen 2003, fig. 11), which also displays a green colour in corroded form. The prototype for this representation is apparently to be found in a crouching female figure, as rendered on an amulet from Achilleion. This picture motif of a naked woman is very old, and we see it already as a rock carving on the lion pillar building of the Göbekli Tepe in the Anatolian Pre-Pottery Neolithic B (PPN-B) (Schmidt 2011, fig. 15). Yet, something else might possibly also be meant, as another figure from Nea Nikomedeia is interestingly formed in the shape of a toad. The meaning of the depiction remains puzzling in the more abstract figures. Nonetheless, the motifs remain in use for a very long time. This demonstrates that these green pendants have lasted for a remarkably long time, and were most likely a basis for the M-shaped pendant type from the South-eastern European Copper Age. The forming of figures from green stone may well also be diagnostic for the development of early copper metallurgy, as many copper minerals are particularly distinctive in a natural environment due to their green colouration. Green is the colour of vibrant nature, and is complementarily counterposed to the colour red, which was already of great symbolic significance during the Palaeolithic, being the colour of blood.

If we turn specifically to the Neolithic representational world, then depictions of novel plants and animals within South-eastern Europe are particularly relevant. Some clear visual representations of ears of cereals on ceramic vessels

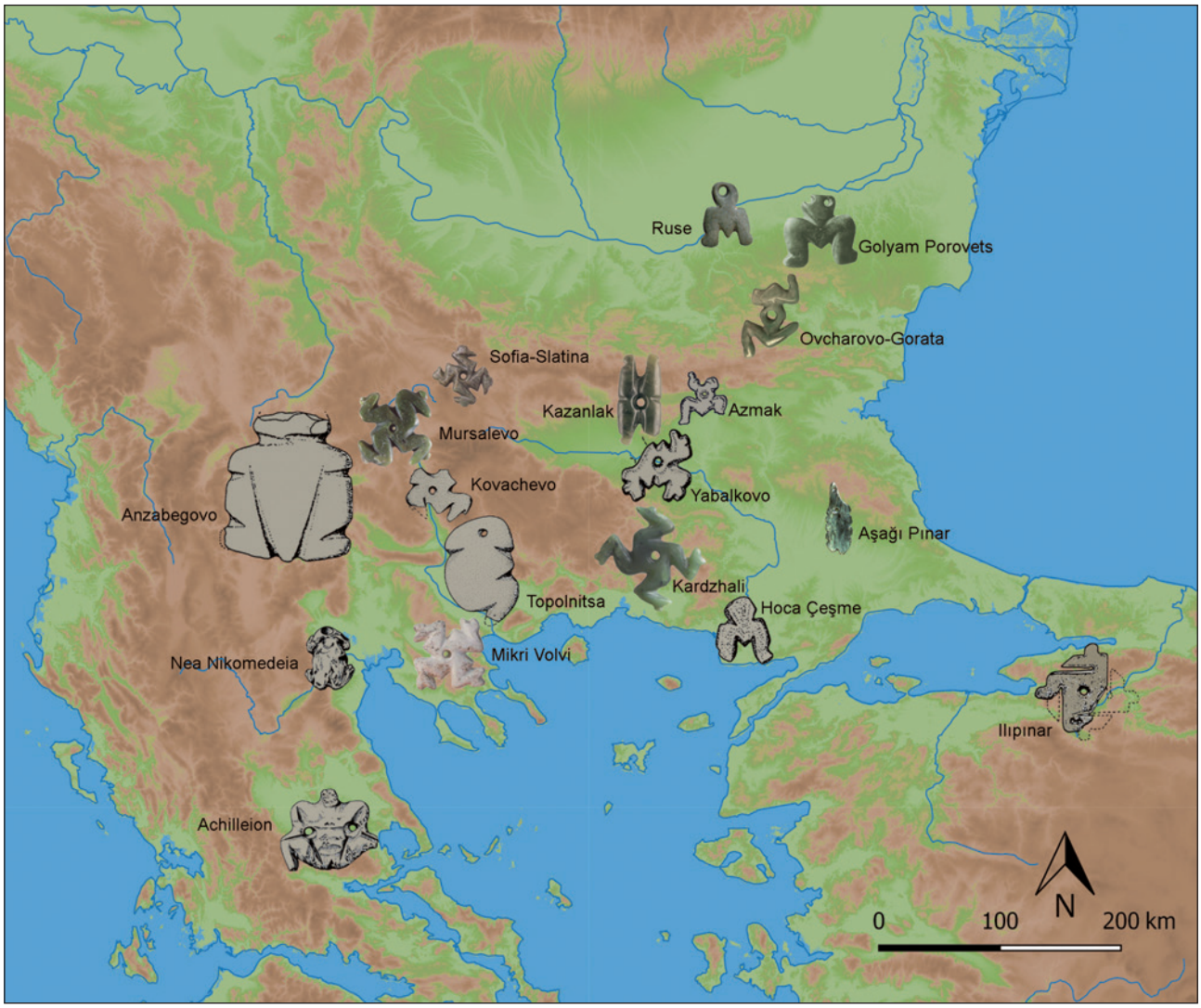


Fig. 213: Spread of Neolithic pendants made of green stone. The objects are reproduced on roughly the same scale (for reference of the individual pieces, see Hansen 2003, fig. 3, Krauss 2014, fig. 104 and Krauss 2020, fig. 2).

are well-known from the Anatolian Early Chalcolithic, this corresponding to the earliest Neolithic in South-eastern Europe. In South-eastern Europe, quite depictions are evident on vessels (albeit not always immediately recognisable as such).

Regardless, with the advent of the earliest Neolithic in South-eastern Europe, visual representations of domesticated animals most prominently occur, these suggesting the high esteem in which these animals were held. Already from the Palaeolithic onwards, the wild species of ox (the European aurochs) played a vital role not only as game, but also within humans' conceptional world. From the Neolithic onwards, two types of oxen were accessible, similar in appearance, but differing economically and, moreover, symbolically in their use. Some of the plastic cattle figurines display remarkable details presenting suggestions both of the animal being led by a nose ring and, possibly, also already of the animal bearing a load. Of significance to the history of culture is the depiction of a person seated on a bull, which currently counts as the earliest example of its type. Moreover, amorphic figures with two horns are considered as index fossils for the earliest phase of the Neolithic from the Aegean to the Carpathian Basin, these generally being interpreted as heavily abstracted depictions of cattle heads. The dispersal and typology of these objects and indications of their use will now be discussed.

11.4. Images of Cattle

The European domesticated cattle (*Bos taurus*) numbers among the earliest domesticated animals of Eurasia,

reaching Southern and South-eastern Europe at the turn of the 7th to the 6th millennium BCE with the neolithisation process. According to the results of genetic studies, the region of the middle Euphrates and the upper Tigris can be identified as the sole place of origin for all European domesticated cattle, where their breeding from a local variant of the aurochs (*Bos primigenius*) occurred over the course of the PPN-B (~9000 calBC) (Bollongino et al. 2012. – Scheu 2012, 5–6). The genetic sequences of the Early Neolithic domestic cattle within the Balkan region display a high congruency with animals from the domestication region, with remarkable local discrepancies evident, for example, between the sites of Kovachevo and Koprivets in Bulgaria compared to a reference population in Iran (Scheu 2012, 103). The greater correspondence of the cattle at Kovachevo to those from the area of origin in comparison to those of Koprivets could be an indication for different routes of neolithisation towards middle Europe. Interbreeding with the European aurochs has been repeatedly excluded by genetic studies (Bollongino et al. 2008. – Scheu 2012, 108–112).[33] Even after the introduction of domesticated cattle into Europe, aurochs continued to be hunted, as is revealed by the butchering remains from the relevant settlements. Hence, the first agriculturalists and pastoralists in Europe evidently engaged with two fundamentally different types of cattle: on the one hand, with a trusty domesticate, whose milk they already knew how to use from a very early period onwards, as is demonstrated by recent studies (Evershed et al. 2008. – Vigne 2008), and, on the other, a dangerous wild animal, the hunting of which commanded a considerable social reputation, with this ultimately also resulting in its extinction in the Early Modern era (Benecke 1994, 263–264). Hence, cattle assumed a special position among the large mammals of Eurasia. Since the warm phases of the Palaeolithic, it had numbered among the most popular of game, and counted as one of the largest wild animals of European forestland after the reduction and partial extinction of Ice Age fauna. The symbolic meaning of cattle, novel and yet familiar in its form, representing a smaller, more docile and (in the truest sense of the word) 'domesticated' version of the indigenous aurochs, cannot be overemphasised (Bánffy 2019, 103–112). As befitted its significance for humans, visual representations of cattle can be followed throughout the history of the cultures of the Old World. The aurochs is among the most popular motifs of Palaeolithic cave painting (Leroi-Gourhan 1981, 121–123). Following the Magdalenian, there is a lacuna in the archaeological record in terms of depictions of humans and animals in Eurasia. Remarkably, however, depictions of aurochs do reappear during the PPN in the Near East. Accordingly, aurochs were depicted along with other species dangerous to humans on the reliefs of the T-shaped pillars at Göbekli Tepe near Şanlıurfa in northern Mesopotamia (Schmidt 2011, fig. 14). A reduction of the animal to its characteristic horned head may already be encountered there (Schmidt 2011, fig. 36) which has endured from that time within the history of culture as the 'bucranion' or 'bucephalon'.[34] The image of the aurochs also plays a special role in Anatolia's early ceramic Neolithic. Its connection to hunting is clearly visible at Çatalhöyük on the famous fresco of Mellaart's *Hunting Shrine*: a powerful bull with its tongue hanging out (Cutting 2007, 130. – Hodder 2012, fig. 17). Cattle skulls, their horns, or sculptures of bull's heads number among the most commonplace accessories in rooms at Çatalhöyük, to which a particular use has been ascribed (Cutting 2007, 126–127. – Hodder 2012, fig. 9a). The special treatment of entire heads of aurochs, the animal's skull, or its horns *pars pro toto* may also be noted with the advent of the Neolithic in Europe. Among the most famous examples are the cattle skulls integrated into the building of the 'shrine' at Parţa (Lazarovici 1998). In the Banat, horns of aurochs are already found regularly deposited in Early and Middle Neolithic settlement pits.[35]

An independent development in the portrayal of cattle may be noted on ceramics at the transition from the Late Neolithic to Early Chalcolithic (according to Turkish terminology). At Köşk Höyük in central Anatolia, cattle can be found as relief applications on a pottery vase (Öztan 2012). Nevertheless, it remains unclear whether these are wild or domesticated cattle, as other vessels from the same site display the head of a red deer with characteristic antlers and a hunting scene with donkey (or onager) herds (Öztan 2012, figs. 35, 39). It is also entirely possible that aurochs are also depicted here, rather than domesticated cattle. Similar

33. It is only from very recent studies of historical aurochs skeletons that it might be presumed that possible crosses of individual wild examples occurred at a much later date (Schibler, Elsner, Schlumbaum 2014. – Park et al. 2015).

34. Within Greek Classical art, βουκράνιον denotes only the fleshless cattle skull, whereas the head as a whole is termed βουκέφαλιον.

35. As may, for example, be found at a kidney-shaped pit at Maroslele-Pana (Paluch 2010, fig. 5). A comparable pit with the horns at its base was also uncovered under the present author's direction during excavations at the Early Neolithic settlement of Bucova Pusta IV at Sânnicolau Mare (see Chapter 8.7, Figs. 176–178).

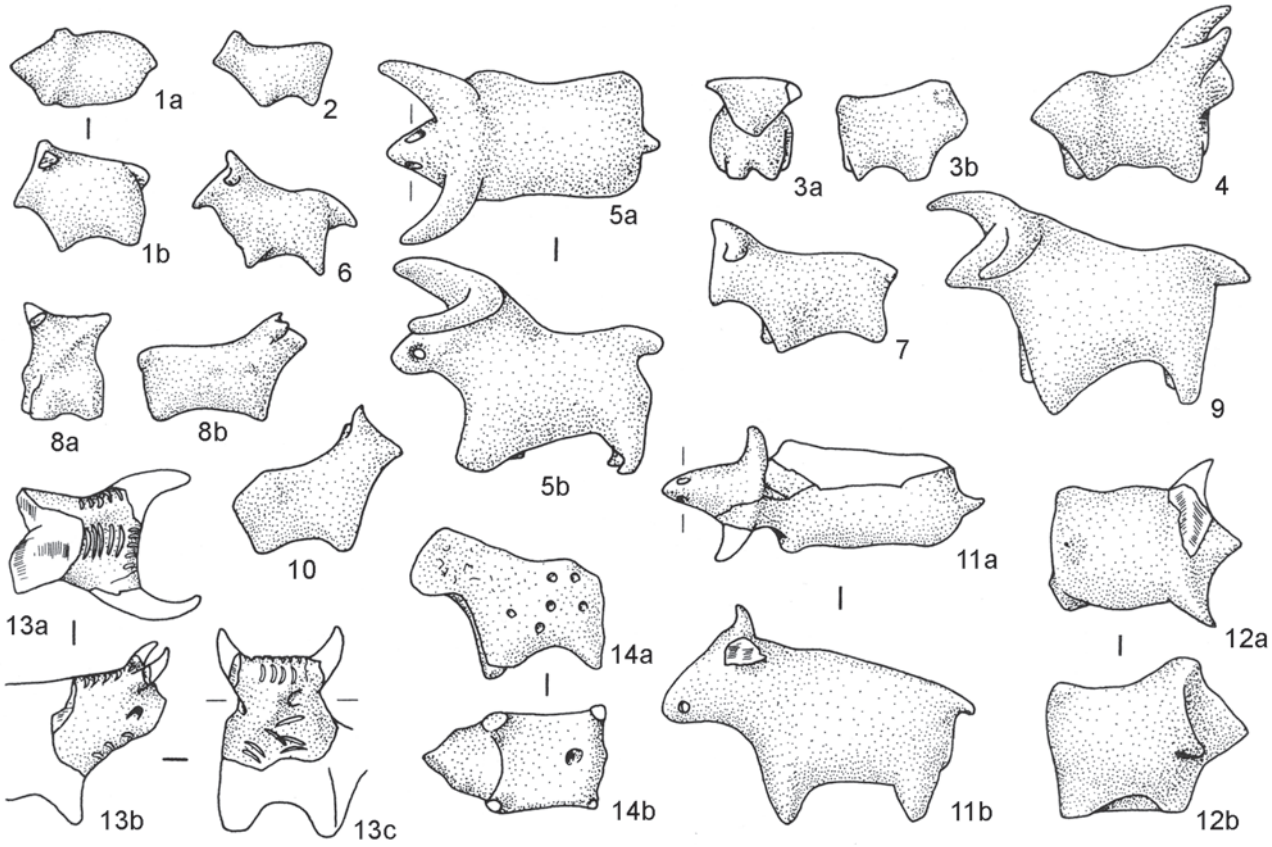


Fig. 214: Usoe. Ceramic figurines of cattle (after Todorova, Vaysov 1993, fig. 198).

relief depictions from the site of Tepecik-Çiftlik with lyre-like widely flared horns are rather reminiscent of depictions of aurochs (Biçakçi, Godon, Çakan 2012). Remarkable is the depiction of the animals where the body is presented in profile, but the head displayed frontally. In this manner of portrayal, the artist prioritised maximal recognisability over a correct perspective. The frontal reproduction of the head ultimately permits the reduction of the motif to merely the characteristic detail of the top of the head of the horned animal. Bull heads realised in relief may be found on the pottery from the site of Hacılar in the south-western Anatolian Lakes region, most noticeably in Level VI (Mellaart 1970, 112, 263). Later, it evidently became sufficient to depict the bucrania motif as a drawing on the vessel (Mellaart 1970, 353). Simple plastic horns derived from the bucrania motif on vessels' pierced lugs can also be found in western Anatolia, as in Ulucak Vb and Ege Gübre (Çilingiroğlu, Çevik, Çilingiroğlu 2012, fig. 30. – Sağlamtimur 2012, fig. 18).

Plastic figures of cattle may also be noted throughout Anatolia's Neolithic and Chalcolithic cultural history. Already before vessel pottery had been developed, clay figures can be evidenced at pre-ceramic Çayönü, among these a small



Fig. 215: Foeni Sălaș. Round, plastic cattle figurine made of fired clay (h: 4.9 cm, l: 9 cm) (after Drașovean, Popovici 2008, cat. no. 62).

bull. A stone pendant from this site could also depict an ox (Siebenmorgen 2007, cat. no. 217). Among three ceramic animal sculptures from Köşk Höyük, one of them is remarkable on grounds of the clear presence of udders. The prominence of this anatomical detail permits its identification as a mother animal, and (in any case) as a domesticated cow. With the advent of neolithisation, not only the animals themselves,



Fig. 216: Ceramic figurines of ungulates with horizontally pierced snout. – 1. Sitagroi (after Papathanassopoulos 1996, cat. no. 260: h: 10.6 cm, l: 16.4 cm, w: 9.9 cm). – 2. Szentgyörgyvölgy-Pityerdomb (after Bánffy 2003, fig. 6: h: 6.9 cm, l: 13 cm, w: 4.5 cm). – 3. Belovode (after Heyd 2016, fig. 9, without measurements). – 4. Varhari (after Boyadzhiev, Boyadzhiev 2011, without measurements). – 5. Jablanica (after Petrović, Katić, Spasić 2009, cat.no. 152: h: 1.8 cm). – 6. Sapareva Banya (after Jacob, Fol 2004, cat. no. 41).

but also their depictions reached South-eastern Europe (Fig. 214). Some of the ceramic figurines, for example from Kovachevo, Yabalkovo, Slatina-Sofia, Usoe, Grivac, and Ovcharovo-Gorata (to name but a few), may be interpreted as representations of oxen (Todorova, Vaysov 1993, fig. 198. – Lichardus-Itten et al. 2002, pl. 22/21. – Bogdanović 2008, pl. 6/3. – Nikolov 2011, 106. – Krauss 2014, fig. 101/9, 11–13. – Roodenberg, Leshtakov, Petrova 2014, 347 and fig. 5). One expressive sculptural depiction of a bull originates from Foeni Sălaș in the Romanian Banat (Fig. 215). This Early Neolithic site is among the earliest in the Carpathian Basin, and demonstrates how swiftly not only the Neolithic

lifestyle, but also the symbols of the Neolithic ideology could be disseminated into the subcontinent.

Over the course of the Balkan Neolithic, the symbolism of cattle may be further traced, although the depictions frequently become more abstract, and, time and again, only characteristic traits as symbols for this animal might be found (Bánffy 2019, 33–86). A good example of the dismantling of this image type is presented by small three- and four-footed tables: in addition to the tables' anthropomorphism identified by Nikolov (Nikolov 2007, 105–112), the corners of some of these special vessels are shaped into bulls or rams (Schwarzberg 2005, 282–301).

With the spread of the Neolithic to Central Europe, the significance of cattle depictions actually increases. In comparison to the Balkan Neolithic, anthropomorphic depictions in the LBK are rarer (Bánffy 2003, 19. – Hansen 2007, 302). Additionally, zoomorphic figures or applications in the form of animal heads are also evidenced on vessels, particularly of cattle (Becker 2007). An animal figurine from the Transdanubian site of Szentgyörgyvölgy-Pityerdomb displays telling decorative and representational details probably depicting a bovid. The settlement dates to the transition between the latest phase of the Starčevo culture and the earliest LBK (Bánffy 2003, 1). The animal's hide is reproduced with ornamental incised lines. Yet, even more remarkable is the horizontal piercing of the snout, by means of which it "could be led about by the nose" (Bánffy 2003, 8). A striking number of the cattle depictions from the South-eastern European Neolithic show a horizontally pierced snout (Fig. 216). Is this thus intended to portray a beast of burden? Leading by means of a nose ring would represent in itself a new stage of domestication, and could, in turn, serve as a preliminary step towards exploitation of animal labour.

Eszter Bánffy has emphasised that it is most prominently zoomorphic and later anthropomorphic vessels and house models which belong to the new images created by this novel lifestyle (Bánffy 2003, 16). According to her, all of these will become the most important and frequent objects of the cultic find inventory of the South-eastern European Neolithic (Bánffy 2019, 87–102). Only the custom of erecting monumental stone sculptures (like those from Lepenski Vir) disappears from the cultic record of the early farmers migrating to Europe. At the same time, there is a general consensus among all researchers of the Near Eastern pre-Neolithic hunters and gatherers that it is hardly coincidental that these novel, already Neolithic forms of sculpture arose in the period in which the first concrete indications of sedentarism and social organisation occur. The vessels with figures appearing within South-eastern Europe's cultural milieu at the advent of neolithisation must nevertheless be considered to be novel creations, as they were first adopted at an already completely developed stage, as with the entire ceramic technology. An example for a particularly early figural vessel in the form of an ox originates from the Early Neolithic settlement of Rakitovo (Matsanova 1996, pl. 8). While the early animal vessels are simply hollowed out, and the vessel itself portrays the body, a new type with a bowl set on top would develop from this over the course of the Neolithic. One example is a painted vessel in the form of a bull from Settlement Level III of the mound at Sitagroi in northern Greece, from whose back a peg protrudes; it can be presumed that a small bowl would be attached to this, as known from other figurines (Schwarzberg 2005, fig. 29/1–2, 4). The question is thereby raised as to whether these animals only carry vessels in a metaphorical sense, or whether these are depictions of the realities of Neolithic life and, therefore, of the actual activity of cattle bearing burdens.



Fig. 217: The Bull Rider of Haúsa (after Nikolov 2015).

11.5. The Bull Rider of Haúsa

A representation of a bull which is remarkable in various aspects was discovered at the Late Neolithic site of Haúsa at Kapitan Andreevo at the border between Bulgaria and Turkey (Nikolov et al. 2014. – Nikolov 2015, 24–25). The figurine is worked as a vessel, has an anatomically correctly reproduced orifice on its reverse, and is marked as male on the underside with a depiction of a penis. While the rear legs are modelled as simple cylinders, knee joints and even the typical cloven hooves of the animal are depicted on the front limbs. The triangular head is highly stylised, but also displays anatomical details such as the elongated snout, ears, and eyes suggested by two perforations. The short, thick

horns of the animal protrude upwards and rather resemble those of a domesticated ox. The artist devoted particular effort to the reproduction of the animal's hide, realised in the contemporary manner of Late Neolithic pottery by means of incisions with inset white paste. These comprise intertwined bands of spirals, the intervals of which were very carefully filled with fine dashes. Preserved seated on the bull's back is a human figure's lower body (Fig. 217). The individual's legs hang down both flanks of the bull, while the body is broken away above the hips. Incised lines frame the noticeably jutting pubic region; two parallel lines stretch across the person's hips, probably delineating the edge of a short robe. The site of Haúsa can be dated with certainty to the Balkan Late Neolithic on grounds of its finds; the absolute chronological framework is set by the excavator at 5200–4850 BCE (Nikolov 2015, 22). This would therefore, represent the earliest known depiction of a person seated on an animal in the world! The cultural historical consequences of this portrayal cannot be emphasised enough. It remains uncertain as to whether the activity performed might already be termed riding as this would also presuppose control over the animal's movements, whether by steering or leading. The seated position on the animal nevertheless symbolises the power of the individual over the bull, and thus demonstrates one of the most important technical prerequisites for actual riding. In addition to the proven exploitation of milk (Evershed et al. 2008. – Vigne 2008), did the secondary use of animal labour already begin in an era well before the discovery of the wheel and cart? Contradicting a regular use of cattle as beasts of burden, or work animals is the lack of any evidence of such exploitation on the bones or horns of the animals.[36] Temporary riding or a sporadic use of cattle for the bearing of loads would, however, have hardly left traces upon skeletal material. A ritual interpretation of this representation would still include the real performance of the activity. The case of the figure from Haúsa does not depict something akin to a hybrid creature which might merely be taken as an allegory for the activity of riding, but instead comprises two figures with their own respective corporeal identities which are connected to one another by means of the portrayal. The figure identifiable as human on grounds of its surviving lower body sits on a standing or walking bull. Even more noticeable than the figure's upright carriage is the manner in which the figure sits with its legs hung over the animal's flanks, displaying the person's power. To put this another way, it is in precisely such a manner that one must actually sit upon a bull in order to ride it.

11.6. Bucrania Idols

In addition to figures of women and depictions of cereals (for example in the form of entire ears or of individual corns),[37] depictions of cattle number among the Neolithic's most common symbols. These are nevertheless merely the archaeologically visible elements of an ideology disseminated with the Neolithic.[38] In addition to the realistic depictions of humans, animals, and things, there is also a series of Early Neolithic objects with the character of amulets or idols which do not initially betray what they seek to portray from their own form, this making the interpretation of their function more difficult. Particularly insightful in this context are certain objects which might neutrally be termed T- or Y-shaped.[39] Common features of these objects are their small format (as most of these can be encompassed in an adult hand), and their minimalist reduction to a pillar-like triangular or pointed oval or teardrop-shaped body, at the end of which two horns

36. Traces of ploughing from south-western Iran evidence the harnessing of cattle already around 5000 BCE (Benecke 1994, 269). Numerous visual representations and finds from wheeled vehicles or models of such are known from Europe and the Near East from the 4th millennium BCE (Bakker 2004. – Burmeister 2004. – Maran 2004. – Schlichtherle 2004. – Turetskij 2004). Demonstrably, cattle pulled these vehicles (whether sledges, travois, or carts) (Benecke 2004. – Boroffka 2004).

37. "For the artists, the grain corn embodying the essence of agriculture became an important symbol. This would have symbolised sedentarisation and the production of foodstuffs, and most likely simultaneously served as a sign that one knew the veneration of the higher powers prayed to by these immigrants to the Balkans, and had adopted this to a certain extent. This symbol expresses the desire to align with the world of the early farmers." (Bánffy 2003, 18, trans. by A. Edmonds).

38. "The discovery of agriculture basically transforms not only primitive man's economy but also and especially his economy of the sacred. Other religious forces come into play – sexuality, fertility, the mythology of women and of the earth, and so on. Religious experience becomes more concrete, that is, more intimately connected with life. The great mother-goddesses and the strong gods or the spirits of fertility are markedly more dynamic and more accessible to men than was the Creator God" (Eliade 1961, 126). "The early farmers of south-eastern Europe brought with them a material culture indicating a learned world of belief rich in cultic finds, albeit not yet completely understood. Nonetheless, this culture transformed step by step in the Carpathian Basin, and this metamorphosis continued ever more intensively in the Middle European regions beyond the Carpathians." (Bánffy 2003, 18, trans. by A. Edmonds).

39. As these are termed by Vuković (Vuković 2005, 34–36).

laterally protrude. Not only do these objects possess entirely different forms, but they are also fashioned from various materials; most commonly they are made from clay, and more rarely bone and stone. Occupying a special place among these is a series of large-format examples from stone which will be discussed at the conclusion of this work.

Possibly related to these pieces is a group of plug- or nail-like objects most prominently appearing in Thessaly, Albania, and Dalmatia (Krauss 2017, fig. 3). They can present an upward curved shaft but are otherwise radial-symmetrical in design. These pieces in particular were already described as lip, ear, or nose plugs. It is difficult to establish as to who first introduced this functional interpretation within the academic literature. Vladimir Milojčić was already consciously using this term in the 1960s (Milojčić 1960, 327) and it may well have been adopted from Oswald Menghin who was the first to use this in his *World History of the Stone Age*.[40] Reingruber has summarised the indications as to the employment of these Aegean nail-shaped objects which may have been used for a variety of purposes ranging from hair adornments and pendants to being used as rubbing stones for pigments (for example for paints or cosmetics) (Reingruber 2008, 566–568).

Those objects with a more or less rounded head will not be discussed here, but instead only those with two horns or at least a triangular expansive head; that is those reminiscent of stylised depictions of cattle heads which must probably be understood in this way.[41] Since Stanković's excellent publication of the examples from Knjepište, these objects' full spectrum of forms has become evident (Stanković 1991). These can range from very small and flat to long and large like a pillar. The only feature in common is the small horns jutting from the sides. While the function of these objects remains entirely unknown, the horns would seem to exhibit some manner of connection with the horned cattle heads,[42] which is why they will be termed for simplicity's sake idols or bucrania idols, without fully plumbing the significance of the term idol.[43]

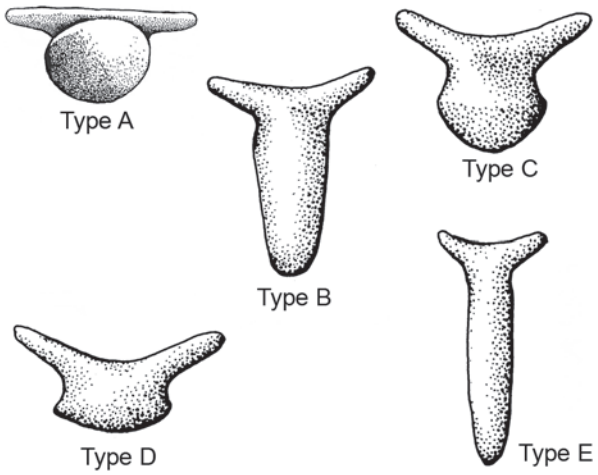


Fig. 218: Typology of the Bucrania idols (after Krauss 2016).

A few arguments for different functions of these horned idols have been summarised and discussed by Jasna Vuković. According to her, it was Karmanski who adopted the terms "labrets" or "labial wedges" for the horned idols from the Balkans in analogy to find contexts from south-western Iran (Karmanski 1987). Contrary to this interpretation, Vuković has rightly noted that wear from contact with teeth would need to be identified on the items, which is not the case, and that the objects currently occur solely in settlement contexts, rather than originating from graves (Vuković 2005, 34–35). Mihael Budja has pointed to the relevant discovery together of clay stamps and plug- and nail-like objects in the Aegean, on the one hand, and clay stamps and "zoomorphic" amulets, as he terms them, in the Balkans, on the other, and considers them to be a novel development of the South-eastern European Early Neolithic connected to the Neolithic economic mode. These may have served as counting stones or as aids in the storage of goods (calculi, counters, or tokens) (Budja 2003). Very early attested is also a very simple interpretation as clay spools for the winding of yarn which Menghin

40. "Most prominently deserving of attention are smaller or also larger cylinders of clay, whose surfaces are somewhat recessed and decorated. These can probably only be interpreted as earplugs. Very similar items occur in Badarian-period Egypt. The larger of these cylinders could, however, also be interpreted as paint stamps (pintaderas)." (Menghin 1931, 327, trans. by A. Edmonds). Regarding the examples from pre-dynastic Egypt, he also notes later as follows "Ear, lip, and nose-plugs were also popular." (Menghin 1931, 343, trans. by A. Edmonds).

41. "As the historical conditioning in the analysis of archaeological finds may be understood twofold: on one hand, the finds themselves, and, on the other, the archaeologists excavating them as children of their own time; accordingly, the interpretation is entirely uncertain" (Bánffy 2003, 12, trans. by A. Edmonds).

42. "A religious symbol conveys its message even if it is no longer consciously understood in its every part. For a symbol speaks to the whole human being and not only to the intelligence" (Eliade 1961, 129).

43. Here meant solely in the stricter sense of Greek εἴδωλον, that is, form, image, or likeness.

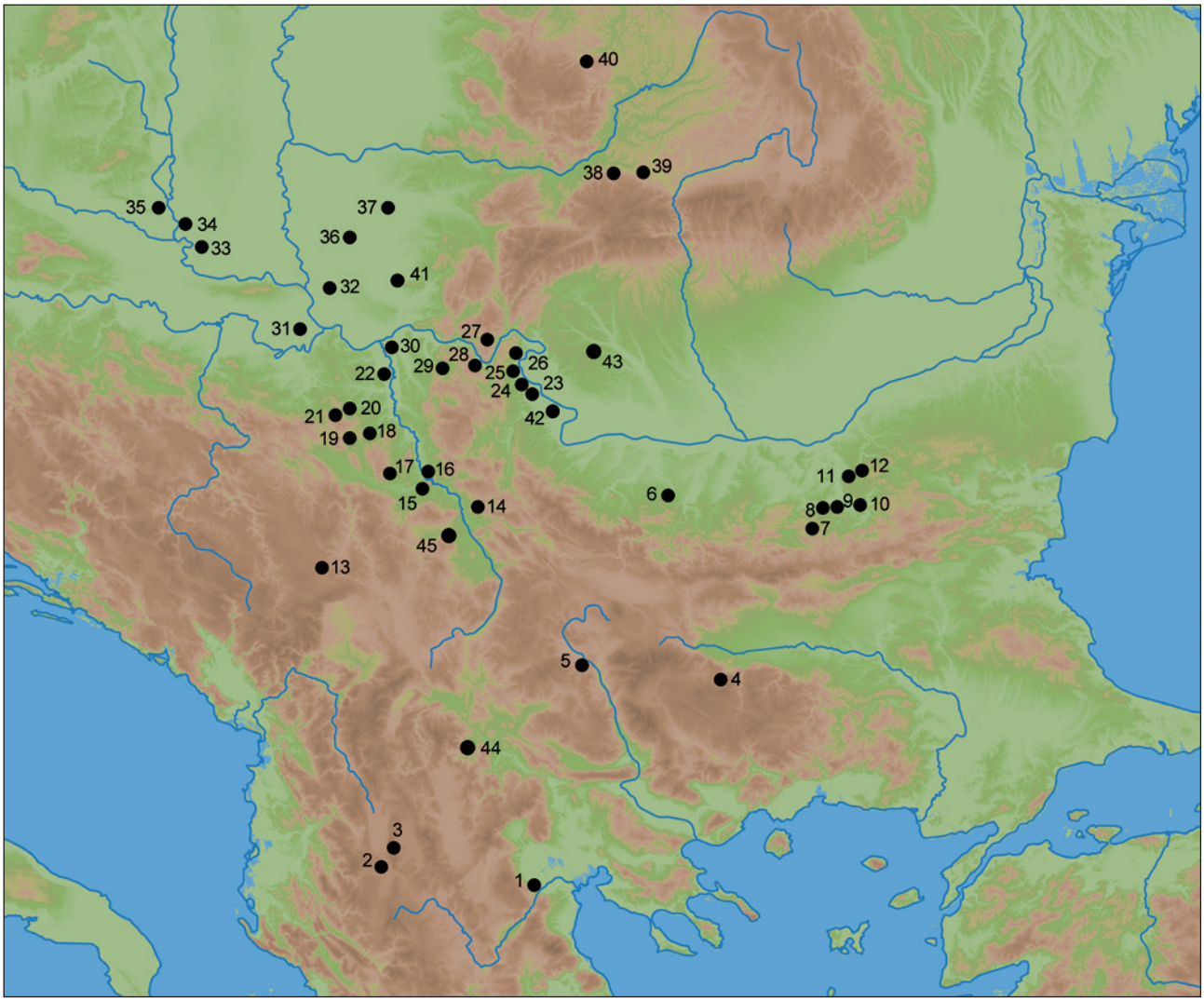


Fig. 219: Distribution of Bucrania idols from the Aegean to the Carpathian Basin. – 1. Nea Nikomedeia. – 2. Vashtëmi. – 3. Podgorie. – 4. Rakitovo. – 5. Vaksevo. – 6. Komarevo. – 7. Skalsko. – 8. Hotnitsa. – 9. Belyakovets. – 10. Dzhulyunitsa. – 11. Orlovets. – 12. Koprivets. – 13. Kremeštice. – 14. Jasenovik. – 15. Ornice-Makrešani. – 16. Drenovac. – 17. Blagotin. – 18. Divostin. – 19. Grivac. – 20. Banya Aranđelovac. – 21. Rudnik. – 22. Minine Vode. – 23. Bukovče. – 24. Ušće Kameničkog Potoka. – 25. Knjepište. – 26. Velesnica. – 27. Dubova-Cuina Turcului. – 28. Lepenski Vir. – 29. Kučajna. – 30. Drmno. – 31. Dobanovci-Ciglana. – 32. Idvor. – 33. Donja Branjevina. – 34. Magareći Mlin. – 35. Zmajevac. – 36. Foeni Sălaș. – 37. Timișoara-Fratelia. – 38. Miercurea Sibiului. – 39. Ocna Sibiului. – 40. Gura Baciului. – 41. Vršac-Kozluk. – 42. Mayor Uzunovo. – 43. Slcuța. – 44. Govrlevo. – 45. Svinjarička Čuka (R. Krauß).

(distinguishing these from his "earplugs") already identified with a clay object decorated with incisions from Knossos which corresponds in form to the idols of Type D as described below (Menghin 1931, pl. XL/5). Based on the grooves on some pieces, Vuković cites a further interpretation of these as having potentially served as hinges and thus forming parts of composite tools (Vuković 2005, 36). Nevertheless, this is also contradicted by the lack of wear on the respective contact surfaces. Sundry interpretations as clothing or hair accessories such as buttons, buckles, clasps, hooks, and so on are thus further excluded.

Should the horned idols of the Early Neolithic in the Balkan-Carpathian region be systematised, then the existing, although disparate typologies by Elenski based on exemplars from central northern Bulgaria (Elenski 2004), by Vuković for the pieces from Serbia,[44] and by Lazarovici

44. Vuković's typology is based on an earlier version by Stanković which could be supplemented with numerous examples from Blagotin (Vuković 2005).

on the basis of finds from the Banat and Transylvania (Lazarovici 2006) serve as a suitable starting point. The polymorphism of the bucrania idols nevertheless displays rather more fluid transitions than neat borders between the individual variants, which may well also be connected to the disparate materials used in their fashioning (Krauss 2016b). Their production also comes across as highly individual, and (in contrast to the fashioning of ceramics or stone tools, for example) does not seem to have been the preserve of specialists. The present author has thus suggested the following simplified typology (Fig. 218).

The first variant, here termed Type A, comprises a complex profiled body with a bent "muzzle" and horns markedly protruding from the "head". A characteristic feature is its double folds, first perpendicular to the head and then once again along the axis of the horns, enabled by the pliable material of clay, as only examples fashioned from pottery are known of this type. These "folded" bucrania are consistently very small and generally wider than they are tall.[45]

A second variant (here Type B) may be distinguished by a very large drop or tongue-like body, from which small horns, round in cross section, laterally protrude. In some cases, the underside is slightly curved. Idols of this type are also fashioned from stone. A few ceramic pieces are decorated with incisions or perforations on their front.

Idols represented by the standalone Type C present triangular bodies and lateral horns, the contours of which are particularly reminiscent of a bull's head. The transition from Type B to C is fluid; characteristic nevertheless for Type C is a lower end which might be described as running to a point or at least sharply tapering. There are broader examples which look like pennants, and thinner ones, the bodies of which can be described as pointed or rounded. Individual pieces fashioned from stone are also known of this type, and at least one ceramic example displays incised decorations on its front. This appears to be a variant local to the central Balkan region.

To be attributed to Type D are idols with a very flat body, the upper and lower parts of which look roughly identical. This presents the shape of a double fork, as if for winding a thread. In other words, these idols resemble the upper parts of Types B and C. Vuković divides these into so-called "shortened" and "spool-like" examples (Vuković 2005, 28).

Should the cattle head, that is, the bucranion, be assumed to be the prototype for these idols, then Type E has experienced the most striking transformation. These types comprise pieces with an elongated cylindrical or spindle-shaped body,[46] which are morphologically proximal to the nail- or plug-shaped "earplugs". A common feature of all of these examples is the long shaft. The upper end is mostly horned, although there are also examples with triangularly protruding head plates without horns.

The typology does not describe any chronological trajectory, as different types can always be found in the same settlement layers at multiple sites.[47] At the important Early Neolithic settlements at Blagotin and Grivac, all of the variants appear together. Nevertheless, multiple types can also be found at more minor sites (Krauss 2016b). The Danube Gorges present a remarkable find concentration of bucrania idols. Types C and D appear relatively rarely by contrast, and demonstrate rather a preponderance in the central Balkans (at least according to the current state of knowledge). Nevertheless, each further find could alter the image of this distribution as the dispersal of these items is hardly decisive considering their low numbers. Chronologically, all of the bucrania idols belong to the early phase of the Balkan Neolithic. They occur with the advent of the neolithisation, and disappear with the arrival of the horizons of Karanovo II or Starčevo-Criș IIa, roughly 5800 calBC in absolute chronological terms. In the eastern Balkans, their occurrence is tied to the earliest pottery up to and including the phase of white-on-red painting, and in the central Balkans up to red painting. Thus, the total dispersal of the bucrania idols describes the overland neolithisation of Europe, stretching from the Aegean to the Carpathian Basin (Fig. 219).

Particular significant in the interpretation of the bucrania idols is the site of Blagotin, as not only have the most pieces by a wide margin been found there (with more than 63 examples), but also detailed information as to their discovery contexts is available. According to this, all of the finds originate from contexts to which a settlement function can be accorded; 25 idols alone come from a single context, at the

45. The individual references to Types A to E may be found in Krauss 2016b.

46. As a clear attribution of these objects is impossible, a phallic interpretation also does not seem any less plausible (cf. Nikolov 2011, 42).

47. The bucrania idols listed by Vuković from the sites of Bukovče, Dobanovci-Ciglana, Idvor, Jasenovik, Kremeštice, Magareći Mlin, Minine Vode, Ornice-Makrešani, Ušće Kameničkog Potoka, and Velesnica cannot be attributed to a type due to a lack of images (cf. Vuković 2005, tab. 1).

base of which these were encountered, distributed at very regular intervals (Vuković 2005, fig. 3). On the grounds of this find situation, Vuković considers the interpretation already presented by many authors that these are ritual objects as being justified, although the distribution of the objects seems more reminiscent of a household's individual cultic practice than that found within a "shrine" (Vuković 2005, 36). In such a context, a few large idols fashioned from stone are informative, these possibly serving as a prototype for the small-format examples of clay.

11.7. Of Humans, Animals and Things

In addition to their shrinking in size, the transformation of the image from a representation of a bull recognisable in and of itself into an idol with two horns presents a broad field for semiotic considerations, as the reduction of the body to a simple geometric form with the recognisable attribute of the horns is polyvalent on many levels: despite the obvious connection to the horned cattle head, the bodies of the idols may also represent a person, a hybrid creature, a pole or totem, or even a mixture of all four. As naturalistic depictions of humans and animals are also available from the Early Neolithic, the ambivalence of the portrayal would seem to be intentional. Bánffy has noted the mental dimension of the Early Neolithic representational world in the Balkan-Carpathian region, and its changeability parallel to the alterations in the fledging communities (Bánffy 2003, 15): should the inanimate be able to comport itself as lively, then the animal can feel human, or conversely the human can feel animal. It is in the nature of the external world that all of its participants function in a similar manner so that plants and (most vitally) animals are also able to think and act with human logic. Moreover, the reverse can also occur. The anthropomorphisation of animals is still alive in folkloric tradition even today, while its inverse, totemism, characterises every society of hunters, fishers, and gatherers. Transitional beings (that is, hybrid creatures between human and animal) have certainly existed since the Upper Palaeolithic. In turn, these beings survived throughout the Neolithic; their successors are with great likelihood the monstrous figures of Classical mythology. The transformation of the horned cattle head into the idols of the South-eastern European Early Neolithic can currently be considered specific to this region. From the Neolithic's region of origin in the Near East to the Aegean, related image types occur time and again, these all reflecting the essential elements of the new economy as a theme. With the crossing of the land route in the dispersal of the Neolithic via the Balkan-Carpathian region with its temperate-continental climate to Central Europe (and the challenges connected with this for a lifestyle grounded in agriculture and husbandry), the spiritual conception of human communities evidently changed as well, of which the new type of bucrania idols represents one element. Over the course of the different neolithisation processes, these images disappear and new, more realistic types of representation appear, suggesting an intensified exploitation of cattle, which leads, in succession, to a presumably novel ritual appraisal of these important domesticated animals.

With the introduction of these novel visual representations, it is likely no exaggeration to recognise a tradition enduring until the present day in the countries of the Balkan-Carpathian region. The image of the human-friendly cow is a beloved motif even today in landscape painting. With the triumph of Christianity, the emblem of the "good shepherd" also appears. Furthermore, the bull remains a vital symbol, for example, as an allegory for Mark the Evangelist. The symbolism of cereals was probably equally significant. Through the introduction of novel cultivars originating from America such as the bell pepper, tomato, potato, and maize, the grain of the Old World has also receded in iconographic significance within South-eastern Europe. In such a manner, the socialist symbolism of sickle and ears of corn might also be considered a last glimmer of the Neolithic representational world. As yet, bread has also not lost any of its enormous symbolic worth among the peoples of the Balkan-Carpathian region. Vital rituals depict bread as central. Present-day life in permanent settlements and a nutrition based upon agricultural products has its roots in the Neolithic. It is demonstrable that human groups have been able to cultivate plants and domesticate animals in various parts of the world entirely independently of one another. For Europe, however, the foundations for this lie in the areas around the eastern Mediterranean. From thence, agriculture, husbandry, and a sedentary lifestyle were disseminated to Europe through the immigration of human groups, initially via the Balkan-Carpathian sphere. As has been demonstrated herein, this process of dispersal was very much variable within different regions. Accordingly, there is no single procedure by which neolithisation occurs, but rather a plethora of differing neolithisation processes. The movement of the Neolithic farmers to Europe largely occurred along the Danube and its larger tributaries. Further afield of these main routes, divergent neolithisation scenarios may be observed, where the participation of the prior Mesolithic population would have varied respectively. From an initial uniformity (for example in the products of ceramic manufacture), local traditions swiftly emerge. It is these differences which lend

human culture its charm. In this south-eastern corner of Europe, a rich plurality of languages hardly akin to anywhere else on the continent is preserved. The reasons for this are historically documented, and would seem unrelated to the dynamics of the dispersal of the Neolithic. The linguistic diversity is today the most visible manifestation of fundamental structural principles in South-eastern Europe, which, with all their common ground, still demonstrate time and again the differences in the human cultural expression of commonalities. The roots of this may well also be sought in the differing dynamics of these neolithisation processes.

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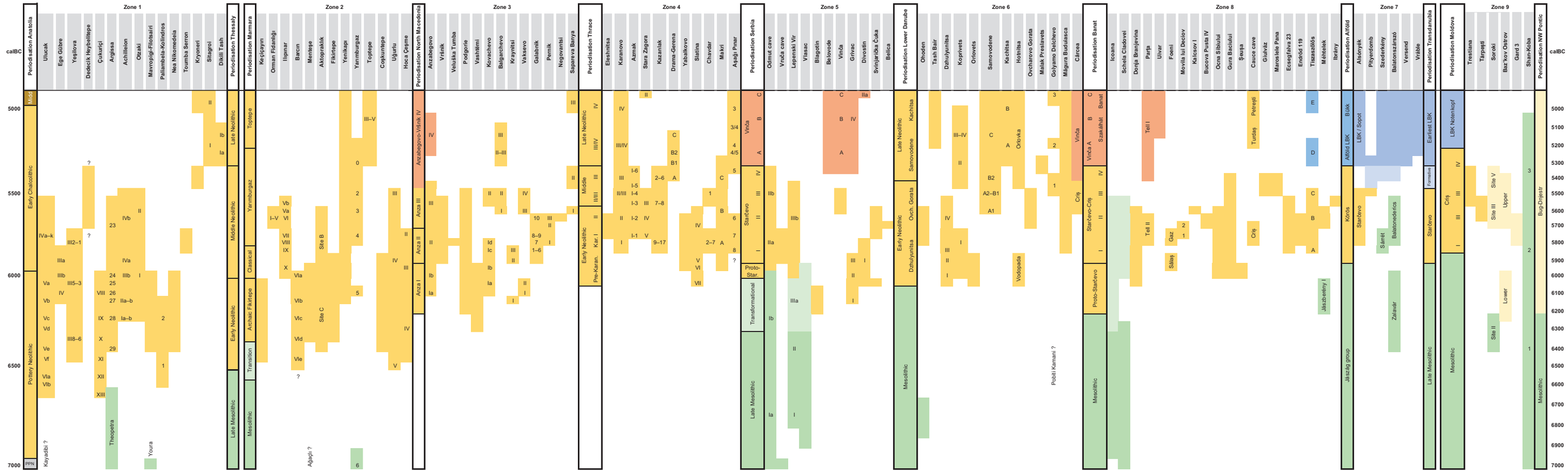
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Folding chart: Comparative chronology scheme for the sites in the study area (R. Krauß).