

### CHAPTER 3

## SALT USE IN THE EARLY AND MIDDLE NEOLITHIC OF THE BALKAN PENINSULA

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### Introduction

The Neolithic period was regarded as a calm and peaceful period of human adaptation to the new conditions, sometimes as a dismal struggle for survival for an individual and a community as well. However the general impression on the Neolithic period was lacking a distinct character, and the studies were somehow limited on small groups and small territories, which miraculously, especially in the region of the 'Fertile Crescent', produced huge migrations which inhabited large territories. The discovery of Neolithic and even pre pottery Neolithic cities such as Çatal Hüyük, Jericho or Çayönü demonstrated the ability and readiness of Neolithic man to live in densely packed towns, with excellent urbanism. And of course, the study of everyday life, subsistence patterns, exchange or barter of exceptionally praised commodities such as obsidian, Spondylus, flint across almost the entire Neolithic world, has lead us to start perceiving the complex organization of this early societies. I hope that the following hypothesis can add a few new elements to the study of the dynamic nature of the Neolithic world.

At the end of the Ice Age, the Balkan Peninsula was inhabited by bands of hunters and gatherers who left rather few traces. The exception is of course the Lepenski Vir culture with sedentary way of life and it's exquisite material culture. During the period of the climatic optimum, some time around 6200 BC, the first groups of stockbreeders and agriculturists started inhabiting this region. Their settlements have been ascertained in Southeast Europe over a vast area: from Greece in the south to Hungary in the north. Further development of Neolithic communities gave rise to hundreds of settlements and a rather dense population pattern. This "cultural boom" and expansion of agriculture and stockbreeding occurred during the first centuries of 6th millennia BC. The cause of the change in subsistence pattern and the process of this epochal shift from hunting and gathering to agriculture and food production are still a controversial issue among archaeologists. Two main hypotheses exist which tend to explain and find origins of this change. The one traces the source of this development to the regions of Anatolia, Levant and Mesopotamia, where the climate and resources offered the most favorable conditions, and the other one searches for local origins of the Neolithic revolution. It is not my intention here to argue for either one of the hypotheses, but to establish a link, useful for the further investigation of the Early Neolithic in the Balkans and the process of Neolithization. This possibly useful link could be salt.

During the history of mankind numerous relationships, alli-

ances and animosities have depended on salt. Salt was the cause for waging many a war. One example, among many, could be the animosity between Autariates and Ardiei. One seasonal salt spring existed in the bordering region between these two Ilyrian tribes, and as Strabo informs us - it was the constant cause for war (Papazoglu 1969: 71-72). Salt was the source of wealth, and a cause of the rise or destruction of many a state. Although it is still a basic strategic commodity, only recently we have come passing over it, at least in everyday life.

### The salt value

In spite of its character as the most necessity commodity (yet so perishable from archaeological records), salt has been taken for granted and overlooked in discussions about the problems of the genesis of the Neolithic. The importance of trade and exchange in the Neolithic period has been discussed amply in archaeological literature, often dealing with obsidian, flint, sulfur, bitumen, Spondylus, cinnabar etc. However, proper attention has been paid neither to the use of salt nor to the trade and exchange of this indispensable commodity. The most probable explanation for this is its above mentioned perishable nature and a relative abundance of salt in the regions of primary Neolithization. There is more than one use of salt that could be vital to the Neolithic economies. Salt is used in human and animal diet, food preservation, curing and preserving of hides and probably for ritual and medical purposes.

Saline and places of salt trade and exchange have usually left salt-related toponymy behind, such as Salzburg, Salona, Salisbury, Hallstatt, Hallein, Halle, Tuzla or Tuz Gölü. For example, there are more than twenty places throughout Serbia, Romania, Bulgaria and Macedonia named Slatina, and some of them are connected with Neolithic sites.

The importance of salt as a vital commodity has already been recognized by Gordon Childe, who tended to explain the golden finds from Merseburg by the exchange and "commercial importance" of salt (Childe 1929: 244). There are of course numerous papers on the salt-exploitation in Hallstatt, Hallein and Halle. However, these sites belong to a much younger epoch of prehistory. Paradoxically, the significance of salt has been neglected in studying the cultures of the Neolithic – the time of sedentarization of human populations, of domestication of animals and cultivation of plants. Except for brief notes concerning salt trade (e.g. Sherratt 1997; Anati 1962; Runnels and Van Andel 1988: 91; Gimbutas 1991: 72) there have been no attempts to explain the con-

nection between salt use and the Early Neolithic. Most experts agree that the need for free salt, for human and animal diet, started at the beginning of the Neolithic period. (Nenquin 1961: 11, 126, 156; Adshead 1992: 26). However, that statement is usually the end of the discussion concerning salt in the Neolithic. The methodological obstacles seem too high for drawing any useful conclusions. The evidence of exploitation of salt in Neolithic is either totally lacking or circumstantial - such is the case of polished stone axes found in rock-salt mines and the occasional finds of Neolithic pottery close to the installations for artificial evaporation (Nenquin 1961: 127, 128.).

Studying the Early Neolithic of Southeast Europe and its connections with the Near-Eastern Neolithic, mapping the sites and superimposing them on the maps of salines (according to the presently known deposits, marshes or brines, and relying on the toponymy research), one comes to the conclusion there is a close interrelation between Early Neolithic settlements and salines. Therefore, I am arguing that the settlement pattern in the zone of primary Neolithization and its penetration/diffusion into Southeast Europe is to be seen as closely connected with salt-rich soils and salines.

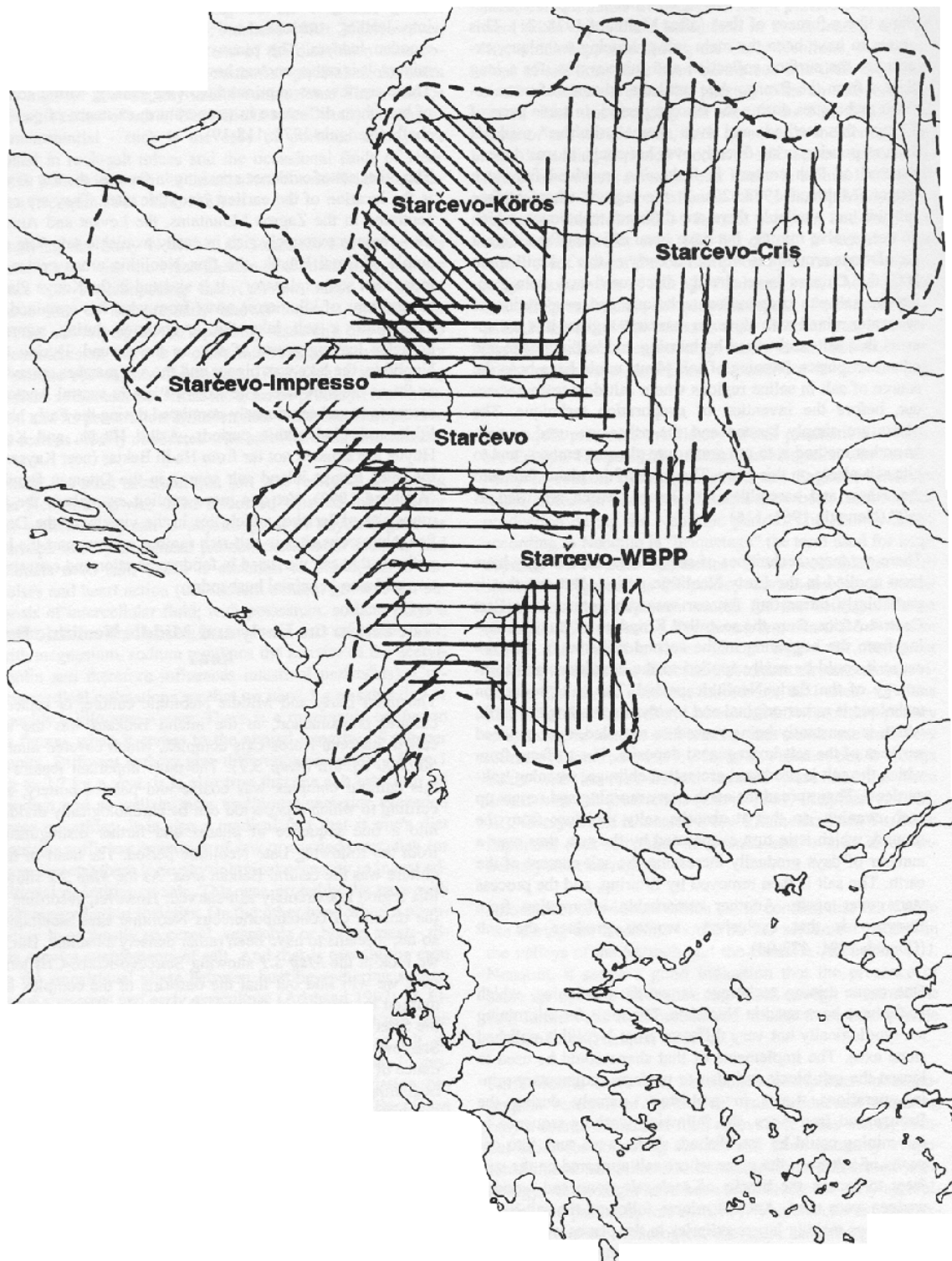
Firstly, we must ascertain that salt was really in use during the Neolithic. It was often discussed whether the need for (or addiction to) salt is physiological or psychological or perhaps merely a cultural phenomenon. Both humans and animals need salt, which is essential to blood, nerve impulses and heart action (the sodium content governs the osmosis of intercellular fluid; with potassium, sodium plays a major role in depolarizing the nervous and muscular fiber; with magnesium, sodium regulates the activity of the acetylcholin and therefore influences intestinal peristalsis). Current medical estimations are that we need 3 g of salt a day or roughly a kilogram a year. There is a reasonable confusion in figures when it comes to the annual quantity of salt per capita. Different authors give different estimations - from 1 kg to 7.2 kg a year. It is also true that the salt intake in all modern and as well in most traditional societies exceeded these quantities. It is also a medical fact that if one's diet contains sufficient quantities of raw or roasted meat, fish (or even insects) there is no physiological necessity to ingest additional quantities of salt. This was probably the case with hunting-gathering societies. On the other hand when a population lives mostly on cereal, vegetable or boiled meat - diets require supplements of salt. And that is exactly the case in the transitional phase between hunting-gathering subsistence strategies and early agriculture (Adshead 1992: 7). Finally, there are many cultural implications of salt use. The one, which seems very important, is that the use of salt, as everyone would agree, makes important distinctions in gastronomy. Perhaps the key word is the differentiation between those who use salt and those who do not. In the region of Balkan Peninsula where groups of agriculturists, emerging from the south, encountered groups of hunters-gatherers that inhabited the area, and probably did not regularly added salt to their diet. As we are all aware, one of the strongest taboos which had survived until our days are associated with food. This differentiation, among others of course, must have been very important one in Neolithic as well. Them and us!

The use of salt in animal husbandry is even more important than its use in human nutrition, because wild species provide sufficient salt intake from large areas of pastures. Once they were taken captive and habituated to the sedentary way of life, which happened during the Early Neolithic, extra portions of salt must have been introduced into their diet. This could be achieved either by grazing them on salt-rich pastures, which was probably the case in the Near East, or in cases of salt-starved soils, such as occur in the central Balkans, by adding imported blocks of salt. Some confusion in figures also occurs when the salt intake in animal husbandry is discussed. There are estimates that cows, especially milking cows, require up to 36 kg salt per year, and there are other estimates that only 10.3 kg of salt is required, and more recent tests of the consumption by horses gave an average consumption of 2.7 kg of salt per year. These figures could help us estimate the actual amounts of salt needed for animal husbandry. The amounts used for these purposes during the Neolithic are probably much lower, but most certainly represent a significant expenditure in salt for any community.

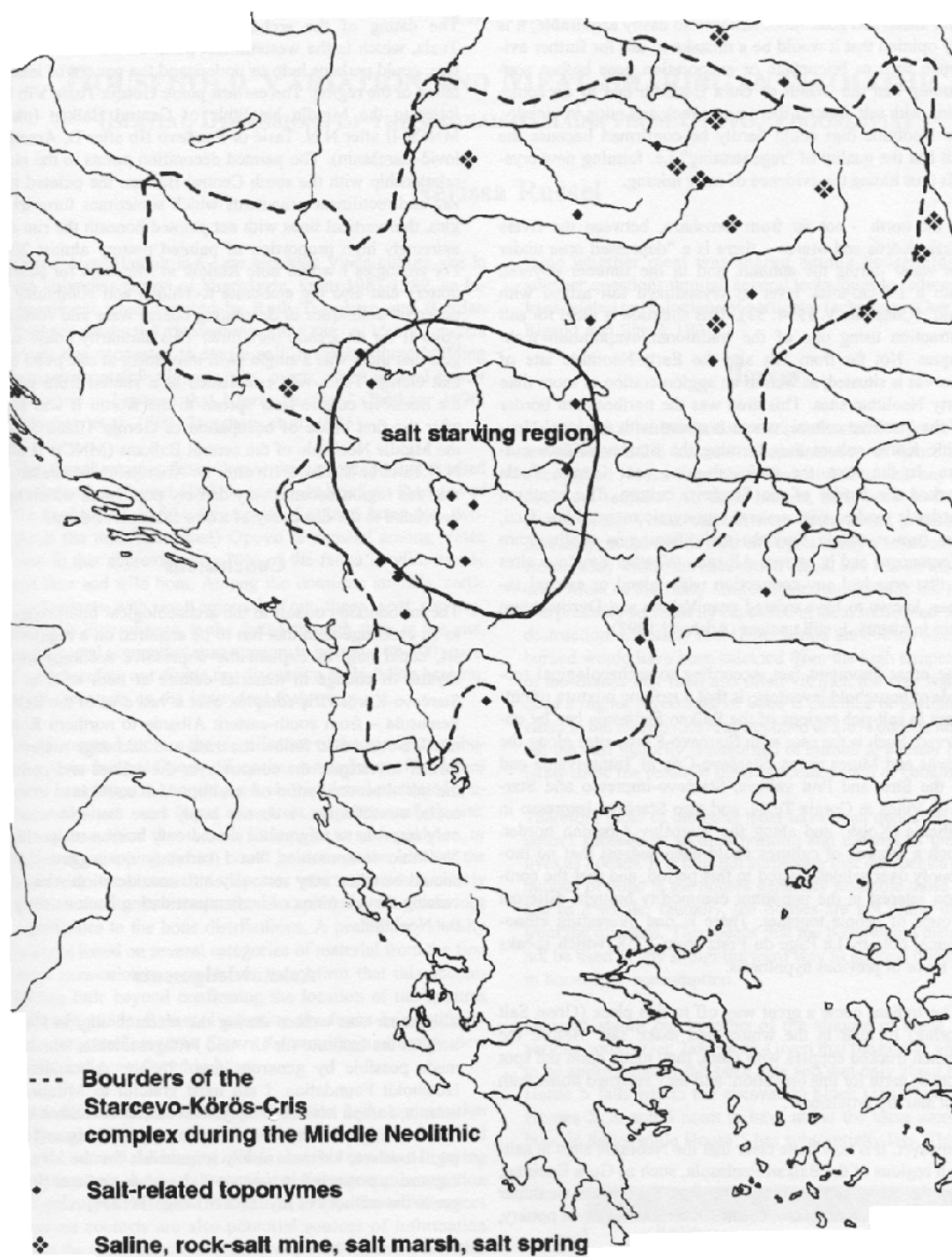
J. Nenquin presented the history of salt production in Western Europe. His particular field of investigation was the territory of France, Germany, Austria and England where he found almost 30 sites, which could have been used for salt production during the Neolithic period. The firm evidence according to Nenquin is "briquetage" the term used for large deposits of ceramic fragments. These assemblages were sometimes regarded as the pottery-workshops, but it is now certain that they represent works for the boiling of brine (Nenquin 1961, *passim*). For the assumption that salt was in use in the Neolithic times in the region for Southeast Europe, we have few direct and abundant circumstantial evidence. The direct evidence is the site of Lunca - Poiana Slatini in the Siret valley, where Middle-Neolithic pottery was clearly in context with a saline that was in use until very recently (Dumitroaia 1987: 253-258). Another one is Gornja Tuzla with its cone-shaped ceramic ware that has been linked with salt production (Čović 1961, Chapman J. 1988: 12). Gornja Tuzla is located a few kilometers from Tuzla, an important rock-salt mine in Bosnia, and is also in an extremely salt-rich region.

Another set of evidence which could confirm that salt was in use during the Neolithic could be the settlement pattern in the valleys of the Salzach and the Saalach. According to J. Nenquin, it seems a good indication that the presence of brine springs was the feature important enough to attract the first farmers and stockbreeders to inhabit these inhospitable surroundings (Nenquin 1961: 52).

Furthermore, there are numerous descriptions in ethnographic research of "primitive" salt production requiring only a source of salt and fuel, or in some cases merely manual labor for collecting surface salt from naturally evaporated inland salt lakes and marshes. No sophisticated technology, which might have been an obstacle for early agriculturists and pastorals, was involved. There is one suitable example from the ethnological literature describing the salt-production installation from the coast of Guinea at the beginning of 18th century. W. Bosman had reported "earthen



**Map 3.1. Local variations of the Middle Neolithic cultures of South-East Europe.**



*Map 3.2. Salt starving region.*

over sheep and goat. Since salt was so easily acquirable, it is my opinion that it would be a mistake to ask for further evidence such as briquetage or evaporation pans before concluding that the wealth of Gura Baciului had to do something with salt. Even if there was a rock salt mine in vicinity, the Neolithic digs could hardly be confirmed because the salt has the quality of "regenerating" i.e. forming new crystals thus hiding the evidence of early mining.

In the north – not far from Oroshaza, between the rivers Tisza, Körös and Mures – there is a "depressed area under the water during the autumn, and in the summer covered with a 1-3-cm-thick layer of crystallized salt mixed with mud" (Chapman V. 1974: 31). This situation is ideal for salt extraction using one of the traditional evaporation techniques. Not far from this site the Early-Neolithic site of Szarvas is situated, as well as an agglomeration of more than forty Neolithic sites. This area was the northeastern border of the Starčevo culture, where it mixed with the local Neolithic Körös culture thus forming the Starčevo-Körös culture. In the west, the rock salt-mine near Gornja Tuzla marked the border of the Starčevo culture. The southern border is marked with several toponymic names like Tuzi, Tuz (tuz = salt in Turkish) and Sllanice in southeastern Montenegro and in eastern Albania. Whether Starčevo sites in that area had any connection with inland or coastal salines, known to have existed near Valona and Dyrrhachium later in history, is still unclear (Adshead 1992).

The other important fact, according to archaeological records of household inventory, is that a striking mixture of cultures in salt-rich regions of the Balkan Peninsula can be observed. Such is the case with Starčevo-Körös sites along the Körös and Mures rivers, Starčevo-Criș in Transylvania and in the Siret and Prut valleys, Starčevo-impreso and Starčevo-Vinča in Gornja Tuzla, and also Starčevo-Impreso in Albania (Kolsh) and along the Yugoslav-Albanian border. Such a mixture of cultures could even suggest that no monopoly over salines existed in this period, and that the common interest in the important commodity brought different groups of people together. There is one interesting ethnological note by Le Page du Pratz from 1758, which speaks in favor of previous hypothesis:

'The Indians come a great way off to this place (Great Salt Spring) to hunt in the winter and make salt. Before the French trucked coppers with them, they made upon the spot pots of earth for this operation: and they returned home with salt and dry provisions'.

However, it is now quite clear that the Neolithic sites in salt-rich regions of the Balkan Peninsula, such as Gura Baciului, Gornja Tuzla and Szarvas appear to have been wealthier than other contemporaneous sites. The abundance of pottery, ornamental techniques and motifs is striking.

The dating of the archaeological material from Gornja Tuzla, which is the westernmost point of the Starčevo culture, could perhaps help us understand the pattern of inhabitation of the region. The earliest phase Gornja Tuzla VIb belongs to the Middle Neolithic of Central Balkan (phase MNCB II after N.N. Tasić or Starčevo IIb after D. Arandjelović-Garašanin). The painted decoration points to the close relationship with the south Central Balkan: the painted zigzag and rectilinear ornaments which sometimes form triangles, thin vertical lines with net painted beneath the rim and extremely high proportion of painted pottery almost 20%. For analogies I would note Rudnik in Metochia for painted pottery and also the elaborate technique and combining of different techniques in decorating coarse ware and Anzabegovo II for its arcade barbotine. This similarity could suggest that there was a single swift movement at one point and that Gornja Tuzla was established as a station from which the Starčevo culture later spread to the North. It was soon after the first phase of occupation of Gornja Tuzla, during the Middle Neolithic of the central Balkans (MNCB II after N.N. Tasić or Starčevo IIb after D. Arandjelović-Garašanin), that this region became very densely populated, which may be related to the discovery of a new salt-source there.

## Conclusions

The introduction of salt in the archaeological interpretation, as an exchange item that has to be acquired on a regular basis, could help us explain the impressive accuracy in the rhythm of change in material culture at both ends of the Starčevo-Körös-Criș complex over a vast area of the Balkan Peninsula – from south-eastern Albania to northern Romania. We could also follow the trade and exchange routes and further investigate the control over the salines and perhaps the initial accumulation of wealth, which could lead to early social stratification. I do not imply here that salt was the only impetus to migrations or the only source of wealth in Neolithic communities, but I certainly do suggest that it should be taken very seriously into consideration when discussing the questions of human past dating back as early as the Neolithic.

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