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Ethnoarchaeology of Salt in Romania

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Introduction

Hallstatt, Vallée de la Seille, and Halle/Saale have been, for more than a century, famous European archaeological sites connected to the prehistoric exploitation of salt. The number of such sites has gradually increased, with the last three to four decades witnessing an unprecedented research impetus across all continents, which consolidated the syntagma Archaeology of Salt. Starting in the 1970s, Southeastern Europe became the spotlight in this regard, producing evidence of the worlds' oldest (Neolithic and Chalcolithic) production of recrystallized salt from salt springs (Bosnia-Herzegovina, Romania, and Bulgaria).

Southeastern Europe is one of the rare areas of the continent with considerable ethnoarchaeological potential. It began to be valued through significant approaches beginning in the 1980s (Nandris 1985, 1987). Despite the progress, this potential is still far from being exhausted (Zidarov and Grębska-Kulow 2013). The importance of ethnoarchaeological research in these resilient areas is enormous for the proper understanding of many archaeological situations in Europe and beyond. This transgressive assertion is justified by the appeal to the classic distinction between the two types of ethnographic analogies. The first operates in the conditions where the two sets of data – archaeological and ethnographic, respectively – are very disparate in time or space or in both and no connection can be demonstrated between the culture that produced the archaeological traces and the culture that provides the ethnographic analogies (Stiles 1977). The second type of analogy is practiced when it is possible to attest a connection in time and/or space between archaeological and ethnographic cultures; in this situation, a degree of continuity can be assumed between past and present. This latter kind of analogy was the basis for the definition of the direct historical method (Ascher 1961). Thus, most researchers believe that this type is most likely to be correct because the time, space, and cultural affinity conditions that produced the two sets of data under comparison are almost analogous.

Romania's ethnoarchaeological potential for salt was highlighted in the last decade of the last century by a pioneering study (Alexianu et al. 1992). In many mountain and hill micro-areas, Romania meets the ideal conditions for undertaking ethnoarchaeological research focused on investigating the role of salt in the evolution of prehistoric communities. This is because this country:

(a) Is very rich in salt deposits and various saline manifestations.

C. Smith (ed.), *Encyclopedia of Global Archaeology*,
https://doi.org/10.1007/978-3-319-51726-1_3042-2

(b) Shows a remarkable density of archaeological sites, close to some salt springs, the oldest evidence for salt production in Europe, and probably worldwide (Weller and Dumitroaia 2005). Here is the so-called trough technique, first investigated in Transylvania (Harding 2013, 63–66; Harding and Kavruk 2013, 47–94).

(c) Still has a number of resilient areas where traditional salt production, distribution, and rituals in rural, and sometimes even urban, areas continue to this day at an unexpected degree of intensity for an EU member country (from 2007).

In the following, I expand on these three characteristics:

(a) Salt deposits on the Romanian territory (Romanescu et al. 2014, 2015) are found in two large areas: the Subcarpathians and the Transylvanian Depression. The area of Romanian sub-Carpathians unfolds along the external margin of Eastern and Southern Carpathians. In terms of altitude sub-Carpathians are hills, while in terms of genetics they are mountains. Salt deposits were created in the lagoon areas situated near the mountain frame. The chemical differences between salt deposits in the sub-Carpathians and in Transylvanian Depression are due to local conditions. Salt deposits within the sub-Carpathians are mixed with carbonates and sulfates, while the salt within the Transylvanian Depression is pure (only halite). The lack of magnesium and potassium salts in the Transylvanian Depression is due to the existence of connection pathways with the open ocean (waters with high concentration of magnesium and potassium are evacuated from the Transylvanian lagoon). In the sub-Carpathians, there are 2–4 layers with different ages, while in the Transylvanian Deposits, there is only one, with a thickness of 400 m. Considering an average seawater concentration of 35%, the following salts are deposited: 78% halite, 17.7% complex potassium and magnesium salts (chlorides, sulfates, etc.), 3.6% gypsum, 0.4% dolomites, and tiny amounts of bromides, iodides, etc. The different percentages of these elements determine the differentiation of salt deposits in Romania. In Romania there are approximately 200 salt massifs and around 2000 salt springs. As far as saline springs are concerned, their accessibility throughout the prehistory and history is obvious, while only a small part of the salt masses could be exploited in pre- and proto-history depending on the depth at which they were located.

(b) The archaeological discoveries on the territory of Romania cover all pre- and proto-historical periods. Some of the archaeological cultures are considered landmarks for European prehistory (e.g., Starčevo-Criş and Cucuteni-Trypillia). In the last half century, the research on the archaeology of salt has boomed in Romania (Alexianu et al. 2011; Harding 2013; Harding and Kavruk 2013). At least two areas are of maximum relevance: the sub-Carpathian area of Moldova, where the oldest traces worldwide of saline springs exploitation were discovered (Weller and Dumitroaia 2005), and the Băile Figa area (Transylvania), where a new technique was discovered for the exploitation of salt and salt sludge deposits – the "trough technique" (Harding and Kavruk 2013).

(c) After World War II, Romania came into the Soviet Union sphere of influence. Even the introduction of the Soviet-inspired kolkhoz system only partially destroyed the ethnographic fabric of the rural Romanian communities, since this system was inapplicable in the mountainous areas of the country that lacked large surfaces suitable for agriculture. After the changes in the political and economic system in Romania in 1989, private initiatives in the rural areas developed as the process of reconveying the lands subjected to collectivization was in full swing. Independent from the great agricultural exploitations, individuals and families still possessed small farms with a pronounced autarchic character, based on agricultural production and animal husbandry. Even today, although they benefit from modern amenities and facilities (good roads, mobile phones, electricity, television, etc.), many Romanian villages still practice an ancestral form of subsistence economy, sometimes even employing caballine and bovine methods for agricultural work or transportation.

These particularities of the Romanian villages clearly set them apart from those of Western Europe, with the Romanian villages maintaining direct, organic relations with the natural environment. This phenomenon of the organic integration of the villages with the environment led to a resurgence of traditional behaviors and the practices of direct exploitation of all the available ecological resources. There is, however, a natural element, which, even when found on private property, is accessible to the entire community; salt springs or salt outcrops are considered a "gift from God" (Alexianu et al. 2007). The change in the economic system in 1989 encouraged private initiatives related to animal breeding (animals need large quantities of salt, including liquid dispersal) and to production and conservation of food. Another element which facilitates the salt springs' exploitation is the fact that these are generally situated on lands belonging to the state or are owned as common property. Consumers can therefore decide to access them freely without the slightest financial, legal, or administrative restrictions or regulations. In a certain sense, one can speak oxymoronically about an unprovoked ethnoarchaeological experiment taking place, as the presence of such community access offers the possibility of investigating at firsthand resurrected traditional behaviors and practices that supply all the elements necessary for the proper functioning of an autarchic economy. In other words, we are witnessing a phenomenon of resiliency unfolding as we speak, which, in a certain way, is somewhat atypical.

A Brief History of Research

Earliest Literary Sources

The traditional exploitation of salt springs in Romania which is mentioned is a work almost 250 years old. The oldest evidence is found in a record of the salt deposits of Transylvania. Its author, part of the Austrian administration who spent most of his life in the region, mentions an unusual technique for obtaining salt crystals by splashing red hot embers with salt spring brine (von Fichtel 1780). The veracity of the account was confirmed by a 1783 manuscript by an Austrian functionary, who conducted a field investigation of the salt springs of Bukovina (Ceausu 1982, 379). The same technique was further described in a travel journal of an English natural historian, mineralogist, and medical man: "It is worth remarking, that the present rude inhabitants of Moldavia and Transylvania, who live in the neighbourhood of salt spring, have the same method of procuring salt which was common amongst the ancient Gauls and Germans; this was to pour gradually the salt water upon a wood fire" (Townson 1797, 395).

Prehistoric Archaeology of Salt

The research on the links between the prehistoric communities and the salt springs began as late as the 1960s. The first study in the Romanian literature concerned the archaeological discoveries from Solca (Suceava county), dating from the Neolithic (Starčevo-Criş culture) to the Middle Ages (Ursulescu 1977). The discovery of a Chalcolithic tell at Poduri (Bacău county) in an area rich in salt springs convinced a group of archaeologists to initiate research on the possible relations between these natural springs and the complex dwellings of the tell (Monah et al. 1980; 1991). The importance of the saliferous Moldavian sub-Carpathian area for the multiple development of the famous Cucuteni-Trypillia Chalcolithic complex was recognized by Linda Ellis (1984, 205). In a memorable statement she said: "It is also no accident that the longest area of occupation for the Cucuteni-Trypillia culture (i.e., the Eastern Carpathians and sub-Carpathians) happens to be a region noted for one of the largest salt formations in Eastern Europe. Exploitation of, control over, and trading of this essential resource no doubt contributed to the stability of Cucuteni-Trypillia village life in the face of cultural contact with Eastern steppe pastoralists, as well as enhancing the quality of food, storage, food consumption, and animal and human health." Notable is that the problematics of salt is also found in an ethnoarchaeological study: "One of the most interesting developments recently in Moldavian archaeology has been the emergence of evidence for sites functionally specialised in the

exploitation of salt as far back as the early Neolithic; and a corresponding realisation of the importance of salt in the organisation of Cucuteni society" (Nandris 1987, 209).

This hypothesis was reconfirmed by subsequent discoveries in an impressive site of exploitation at the *Poiana Slatinei*-Lunca salt spring (Neamt county), where the prehistoric exploitation stratum, starting with the Starčevo-Criș culture, is up to 2.65 m thick (Dumitroaia 1987). The rate of such discoveries was intensified by subsequent finds, which led to the first synthetic archaeological studies about the exploitation of salt springs (Monah 1991; Ursulescu 1995; Weller 2000). Taking into account the fact that the archaeological data looked promising, mainly in regard to their antiquity, researchers in international programs came to study the problems of salt exploitation in Romania. Among these, we may mention the following: (1) three British-Romanian projects, *The prehistoric exploitation of salt in Transylvania*, from 2000 until the present, *Research on trade and exchange in the Cucuteni-Tripolye Network* from 2001 until 2005, and *Prehistoric salt exploitation in Romania and Anatolia* from 2002 until 2005, and (2) two French-Romanian projects: *Aux origines de la production du sel en Europe: préhistoire et écologie des Carpates Orientales*, from 2003 until 2004, and, from 2004 until 2016, *Les eaux salées de la Moldavie roumaine: archéologie, histoire et écologie d'une ressource structurante du territoire*. The results of this complex research were emphasized in important studies focused especially on the archaeology of salt in Neolithic, Chalcolithic, and Bronze Age (e.g., Brigand and Weller 2018; Harding and Kavruk 2013).

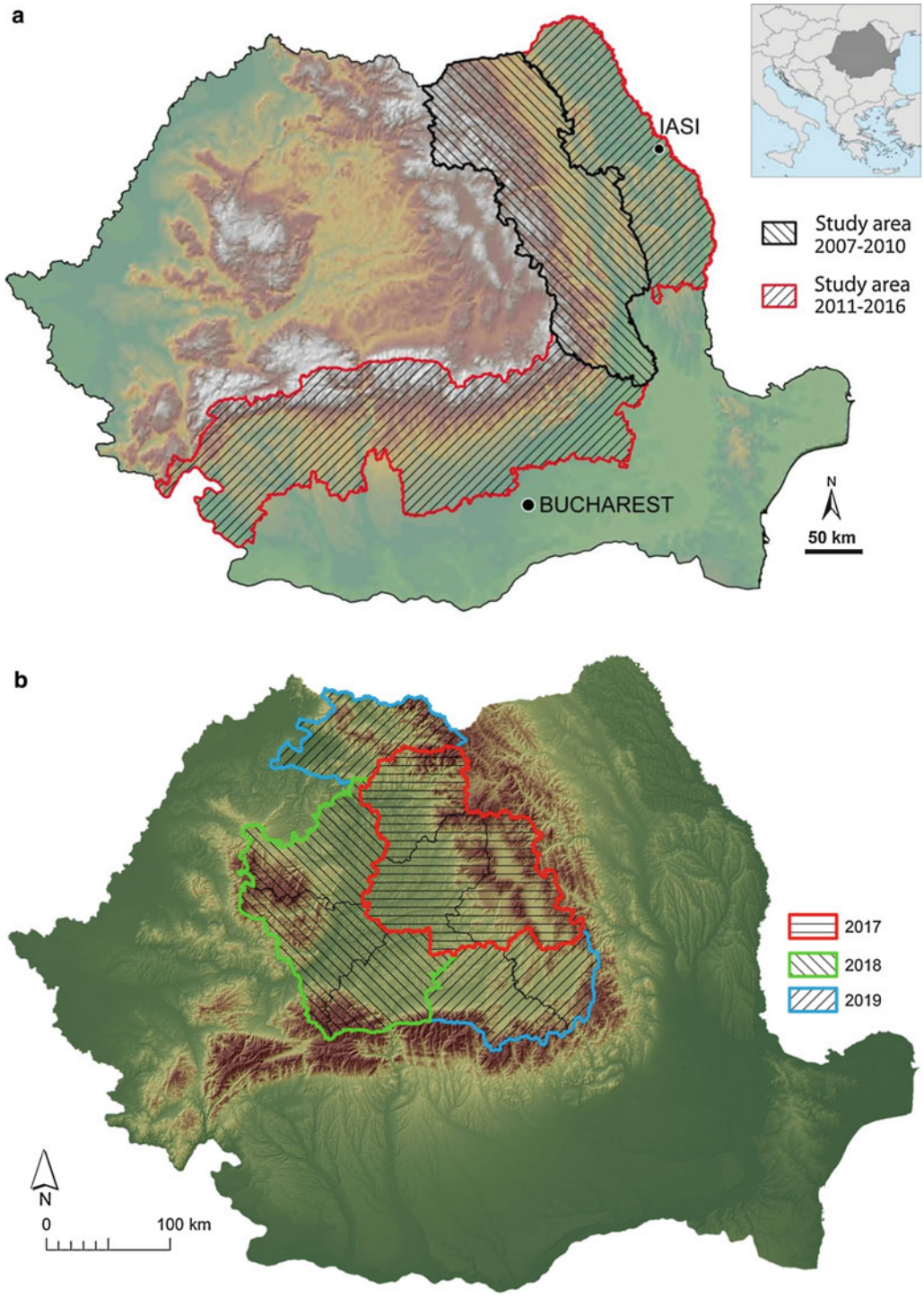
Ethnoarchaeological Investigations on Salt

Many traditional applications are specific to the area where were identified the oldest traces of salt exploitation in Europe. This constitutes a great opportunity for new ethnoarchaeological research. This statement was recently made: Ethnoarchaeology becomes "a real science of reference for interpreting the past, if focused upon well-founded cross-cultural correlates, which link material culture with static and dynamic phenomena" (Roux 2007). As early as 1992, there was a focus on the importance of systematic ethnoarchaeological research on salt springs in the area under discussion, where there are also elements of continuity in the chrono-topical system. This study took into account over 30 salt springs from Neamt and Bacău counties, among others, which incorporated the idea of checking whether there were traces of exploitation from early archaeological times in their proximity (Alexianu et al. 1992, 160–161). We want to emphasize that this ethnological research was not conceived ab initio in terms of the site catchment area theory, but in the completely opposite perspective, namely, the importance of a salt spring for human communities: "We believe that the distribution scheme (of brine from the salt springs, A/N), of a radial nature, is likely, of course on other spatial proportions, to have also worked for habitations detected archaeologically" (Alexianu et al. 1992, 162). I cautiously assumed at that moment that the scheme was currently available to a distance of about 10 km.

Addressing the ethnoarchaeology of the exploitation of salt sources in the resilient areas of Romania, I have concluded that we are in a privileged situation, of the second type of ethnographic analogy.

The ethnoarchaeological studies on this topic were additionally strengthened, thanks to three large research grants from the Romanian government through the National Research Council (CNCS), in particular, the projects *The salt springs of Moldavia*: *ethnoarchaeology of a polyvalent natural resource* (2007–2010), *The ethnoarchaeology of salt springs and salt mountains from the extra-Carpathian area of Romania* (2011–2016), and *The ethnoarchaeology of salt in the inner Carpathian areas of Romania* (2017–2019 — CNCS-UEFISCDI project PN-III-P4-ID-PCE-2016-0759, no 151/2017) all directed by M. Alexianu (Fig. 1a, b).

The main objectives of the Ethnoarchaeology of Salt project are:



Ethnoarchaeology of Salt in Romania, Fig. 1 (**a**) Study areas of the first two projects on the ethnoarchaeology of salt in Romania. (Map by R. Brigand). (**b**) Study areas of the 2017–2019 ethnoarchaeological project on salt in Romania. (Map by R. Brigand)