

The role of salt sources in Transylvania in the process of neolithisation of Central and Southern Europe

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Abstract. *The paper examines, through the richness of salt in Transylvania, the causes that led to the migrations from Anatolia to the southern Balkans and then to central Europe, especially in Transylvania. Among the factors that led to these migrations were firstly climate changes: warming in Holocene, favourable climate in Transylvania around 6000 BC, the salt riches here that provide salt for several millennia. The Holocene warming has led to desertification (the disappearance of forests in the lowlands of Anatolia), the settlements have a shorter timespan, and most of them have only one habitation level (after 6000 BC). These have led to migrations towards the Aegean Sea (Kirokitia) and through the islands or the coasts of Thrace to mainland Greece and from there through the Balkans to the Carpathian Zone, where important salt deposits can be found. Successive migrations have also determined a great cultural unity, observable especially in the evolution of ceramics in the Early Neolithic in the Balkans and southern Central Europe, situations analysed and presented with similar developments from those areas.*

Rezumat. *Lucrarea analizează prin prisma bogățiilor de sare din Transilvania cauzele care au determinat migrațiile din Anatolia spre Balcanii de sud și apoi spre centrul Europei, în special în Transilvania. Dintre factorii care au determinat aceste migrații au fost în primul rând schimbările climatice: încălzirea din Holocen, climatul favorabil din Transilvania în jur de 6000 BC, bogățiile de sare de aici, care asigură sarea pe mai multe milenii. Încălzirea din Holocen a dus la procese de deșertizare (dispariția pădurilor din zonele joase ale Anatoliei), așezările sunt de mai scurtă durată, cele mai multe având doar un nivel de locuire (după 6000 BC). Acestea au determinat migrații spre Egeea (Kirokitia) și prin insule sau pe coastele Traciei spre Grecia continentală și de acolo prin Balcani spre Zona Carpaților, unde sunt importante zăcămintele de sare. Migrațiile succesive au determinat și o mare unitate culturală observabilă mai ales în evoluția ceramicii, în neoliticul timpuriu din Balcani și din sudul Europei centrale, situații analizate și prezentate cu evoluții similare din acele zone.*

Keywords: salt, migrations, PPN, Starčevo-Criș, Anatolia, Balkans, Transylvania.

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Sources of salt in Europe and the connections to the first migrations

The special development of the Neolithic in Europe, after a cold period between 6300–6100 BC (Figure 2/b), was determined by the salt sources especially in the Carpathian Basin (Figures 1 & 3). They also generated the largest concentration of early Neolithic settlements in Romania³.

The most important source of salt in central Europe lies in the Carpathian arch, including the Wooded Carpathians, and is found in Romania, Ukraine, Poland, Slovakia and Hungary (Figure 1/a).

The optimal climate in Anatolia between 8000–6000 BC (Figure 2/a) favoured the emergence of stable early Neolithic (PPN) settlements, with a special religious architecture, related in the beginning especially to hunting (considering the representations in the sanctuaries).

Ethno-archaeological comparisons

Even in the earliest PPN settlements there were round (Annex 1.1, 6–7, 9, 11), oval (Annex 1.2–3, 6–7, 9, 11) or horseshoe-shaped (Annex 1.4–5, 15–17) buildings and huts. They had a stone base and were covered with skins or vegetal remains used by shepherds, both in the Western Taurus Mountains (see Annex 1: Asikli Höyük Level 3 – 2j⁴; Muraibit at Nahal Oren and Jericho in Israel; Kirokithia-Cyprus; and others⁵) and later in our mountains.

It is known that often the functionality determines the shape of the houses. In the case of the shepherds' hut, this has some ideal forms of construction and organization. This type of *architecture* is important to understand the internal organization of the first Neolithic constructions, but also later constructions of shepherds at us (Annex 1), because in our areas the use of wood has led to a poor preservation of the inner partitions. For this reason, such traces were found only in some situations where they were thoroughly researched (e.g. Gura Baciului). We must note the small number of dwellings on one level or one phase⁶.

Migrations, spreading, chronology

The lack of salt sources, the warming of the climate with its consequences (desertification, drainage of springs, drying of grasslands, etc.) caused the migration from

³ LUCA *et al.* 2011, 7–18; LAZAROVICI G., LAZAROVICI C.-M. 2016.

⁴ RGRUBER, TISSEN 2005; CANEW project.

⁵ MÜLLER-KARPE 1968, Taf. 103.B2, 104.B, 105.19, 110.35, 111.31–42, 113.B14 and other.

⁶ See computer modeling and seriations of the complexes at Gura Baciului: LAZAROVICI G., MAXIM 1995, figs 10–14; LAZAROVICI C.M., LAZAROVICI G. 2006, 82–85; LAZAROVICI G., LAZAROVICI C.-M. 2016; and others.

Anatolia (Konya, Cilicia and Cappadocia) to southern Central Europe and the Balkans, where at the end of the cold period between 6300–6100 BC (Ereignis) appeared the first shepherds⁷ (Figure 1/a). The second major migration to southern Europe starts from the Mersin area on the coasts of the Mediterranean Sea, at first on the northern, but also on the southern coasts (Figure 1/b).

Although on the shores of the Aegean Sea salt could be harvested on the rocks of the shores, it does not have the same taste and qualities as the one from the Transylvanian underground salt mountains.

The first migrations

With respect to the first migrations (according to some, colonizations⁸), the following work method was employed. At first, in our chronological system, we used the method of compared stratigraphy⁹. We continued this analysis using the databases¹⁰ with connected algorithms, cluster analysis and fuzzy analyses¹¹. We also used the ¹⁴C data, but without absolutizing them, taking into account the comparative stratigraphy of the early Neolithic (FNT) in the Balkans¹², which we framed in our chronological system, focused on the excavations at Gura Baciului and in Banat¹³, which we have constantly improved by collaborating with younger colleagues who have accepted the methodology: Zoia Maxim, Anamaria Șeulean/Tudorie, Cornelia-Magda Lazarovici, Suci Cosmin, Sote Angeleski, Florian Dumitrescu-Chioar and others with whom we completed our databases¹⁴.

Thus, for the first phase of Neolithization, we defined three migrations of the Starčevo-Criș culture (abbreviated SC, followed by phases) SC IA, SC IB, SC IC/IIA¹⁵, subsequently completing with other migrations and diffusion the areas in the Carpatho-Danubian region¹⁶.

⁷ Upper Figure 2/a: Our processing is based on data and tables: DAIM, NEUBAUER 2005.

⁸ We opt for the more general migration term; *apud* dexonline: *coloniza/colonize* 1 Transformation into the colony. 2 Populate with settlers. 3 (îs) ~a vânatului/ of hunting Introducing a species of game into a land where it did not exist. This kind of phenomenon happened later, beginning in Antiquity and in historical times: LAZAROVICI G., LAZAROVICI C.-M. 2016.

⁹ LAZAROVICI G. 1969; 1977; 1979; and others.

¹⁰ LAZAROVICI G., MAXIM 1995: we have seriated the complexes, when analyzing migration processes we only considered the materials at the base of the pithouses; for other themes see: CIORTEA, LAZAROVICI G. 1996; LAZAROVICI G. 2008; 2009; LAZAROVICI G. *et al.* 2015; 2015a; and others.

¹¹ DUMITRESCU 1984; DUMITRESCU, TOADERE 1987; DUMITRESCU, LAZAROVICI G. 1990; and others.

¹² LAZAROVICI G. 1995; 1996; 1998; 2000; 2006; LAZAROVICI G., LAZAROVICI C.-M. 2016; and others.

¹³ LAZAROVICI G., MAXIM 1995, 68–79, 124 ff.; LAZAROVICI G. 2008.

¹⁴ MAXIM 1999; LAZAROVICI C.-M. 2002; 2015; SUCIU 2009; ȘEULEAN 2012; recently colleagues from Moldova and others.

¹⁵ LAZAROVICI G., MAXIM 1995.

¹⁶ LAZAROVICI G., LAZAROVICI C.-M. 2016.

Based on these methods, we have developed our chronological system completed with new data.

A second major migration, connected especially to the Mediterranean Sea, also targets the salt areas on the shores of the Mediterranean, the Adriatic, defined as the Cardial civilization (Figure 1/b).

The first two-three migrations are also in the vicinity of these first settlements: Cristian, Băile Ocna Sibiului, Băile Miercurea Sibiului, Șoimuș, Gura Baciului etc.; on their way from the south they pass by Băile Govora and settle in the vicinity of the great sources of salt in the Carpathian Basin.

But then there is diffusion from these centres to other salt areas (Fundătura, Moruș, Vultureni in the Cluj area etc., Figure 3/b¹⁷). In the first cities of the early Anatolian Neolithic there were practically no spaces for keeping the animals within them, hence the idea of “cities of worship” (Figure 2/a: Çatal Höyük, Hacilar, Aşikli Höyük, etc.). In the Near East and South of Anatolia, after the warming from 8000–6000 BC, a desertification process begins, the spring dry out, the big tells are abandoned, the settlements have fewer levels of habitation (see Figure 2/a; phenomena occurring between 6000–4500 BC).

From Greece, small communities are moving fast along the Balkan Mountains, through Serbia and Bulgaria, towards the Carpathian Basin, the treasure of salt areas (Figures 1/a; 3). They settle most of the time in the vicinity of the great salt sources, which, from the Neolithic to the present day, are salt sources exploited as springs, mines, wells, baths, permanently inhabited during the eight millennia of civilization (Figure 3).

Sources of salt in the Carpathians related to the first processes of neolithisation.

Ethno-archaeological case studies

It is said that salt sources in Romania provide reserves for another 1,000 years; depending on the surface, it would be 16.206 km², with an average thickness of about 250 m¹⁸. The whole Carpathian Arch is surrounded by salt strips (Figure 4). Such strips, but fewer, can be also found in western Romania or in the plains. In various myths it is said that salt is the piss of the gods, and in others it is the tear of the gods.

In all historical ages salt has been used, although some say that in earlier times this mineral was not used. The ¹⁴C data in Moldova, from Lunca-Poiana Slatinii (Neamț County), where two settlements (SC and Cucuteni) and a spring were researched, show that Mesolithic communities also used the spring, because at that time Moldova had not yet been neolithised, and the ceramics published from Lunca, as well as from other discoveries in Moldova, do not

¹⁷ Moruș: LAZAROVICI C.-M., LAZAROVICI G. 2006, 79, Figure II.19a; LAZAROVICI G. *et al.* 2009; Vultureni: MAXIM 1999, 119, 194, 282.

¹⁸ BĂRBAT 2012a, 95–98 and bibl.

attest materials such early as in Transylvania (such as those from Cristian I, Gura Baciului, Ocna Sibiului, Miercurea Sibiului, etc.¹⁹).

As one can see, the Olt, Mureș and Someș rivers were the main ways to access salt sources throughout history (Figure 5/b).

The quality of salt and salt sources in Romania have often been studied, including several international interdisciplinary congresses on salt, ethno archaeology or archaeometry²⁰. The curative use of salt is mentioned in the Bible²¹. Numerous volumes about these researches have been published lately, but there are also hundreds of studies, dozens of doctoral theses, hard to enumerate. We analyse below the main settlements during the first migrations that played an important role in the Neolithisation of the Carpathian-Danubian space. There are, of course, other important settlements, but archaeological research has not been significant.

Cristian I

Currently, according to the monochrome aspect of the ceramics, it is the earliest settlement in the SC IA phase, but also with the richest archaeological materials for this phase in southern Central Europe.

Monochrome ceramics have two phases, but at this point ¹⁴C data are available only for Monochrome II. The area is in the centre of the salt hills of Ocna Sibiului and Miercurea Sibiului, where five Neolithic settlements all related to the first migrations were discovered and researched on the occasion of the construction of Highway A3. All five settlements are from the monochrome levels to the early stages of White painted. The term White painted is an incorrect association, like the “Gura Baciului-Cârcea horizon”, those who use it mix at least three stages of migration and diffusion from different areas and on different ways of penetration.

In the area of Highway A3 at Cristian, in sites Cristian I, II, III, materials from several eras were discovered: Neolithic Starčevo-Criș²², Bronze Age and Noua Culture²³, Iron Age and Basarabi culture²⁴, Roman and medieval sporadic settlements²⁵. ¹⁴C data shows a duration of

¹⁹ LUCA *et al.* 2008; LAZAROVICI C.-M. 2015.

²⁰ CAVRUC, CHIRICESCU 2006; MONAH *et al.* 2007; DUMITROAIA, MONAH, GARVĂN 2008; ALEXIANU, WELLER, CURCĂ 2011; ALEXIANU & WELLER 2009; ALEXIANU, WELLER, BRIGAND 2012; HARDING, KAVRUK 2013; BRIGAND, WELLER 2014; OJEDA-MESTRE, DUMAS, CURCĂ 2017; CAVRUC, HARDING 2008; MARC 2006; PORUCIUC 2008; ALEXIANU, DUMITROAIA, MONAH 1992; ALEXIANU 2017; for modern times in Moldova: VITCU 1987.

²¹ MONAH 1991; 2008; 2008a; ALEXIANU, DUMITROAIA, MONAH 1993.

²² The ones from Cristian I will be commented separately: LUCA 2012, Figure 19, complexes C235, C245–255, pithouses with 1–2 rooms: C243, C245, C245a, 255, semi subterranean houses, pits C329a, 329b and others important for the architecture of the period.

²³ LUCA 2012, Figure 11 and complexes C203–210.

²⁴ LUCA 2012, 202.

SC of approx. 200 years (Figure 2/d), although the beginning is not clearly mentioned: it may be earlier than the ^{14}C data currently available because there are some features uncorrelated (Figure 7/a) and without ^{14}C data.

The most important features belong to the Starčevo-Criș culture. It is appreciated that it was a marshy area, probably after the Roman period, we believe, otherwise the pithouses in the Cristian I area could not have functioned.

Cristian I. The sanctuary with pits

At Cristian I (Reisdorf on the Austrian maps — “rice village”) two neighbouring areas were investigated:

Cristian IA, a cult area with pits with offering deposits, pot deposits, graves near the pits or in their neighbourhood. In this area there are two stages of the Monochrome ceramics. Here, over 60 vessels were discovered in the worship area, all of them monochrome. The shapes of the pots are of a great variety. ^{14}C data are a bit later, but they are related to the first migrations (Figures 2/d & 6). As we have already said, if we gather all the vessels from this time from the Balkans (SC I), we do not find as many as were discovered at Cristian I. It must be noted that this is a cultural series determined by a certain psychology of the community based on cultic rituals.

Sabin Adrian Luca in 2015 and Anamaria Șeulean/Tudorie in their statistics and conclusions state that in the area of Dwelling L1, predominates semifine ceramic, which represents a cultic situation, serving as a place for offerings or deposition of the deceased for a larger area²⁶, which is very probable. In the other settlements (Miercurea Sibiului I-IV), although large areas were researched, no graves were found. It is therefore a regional ritual²⁷, unlike at Gura Baciului²⁸ or Trestiana (SC IIIB-IVA²⁹), where some of the deceased were buried in the dwelling; only tomb M10 in the B28a feature at Gura Baciului had stones arranged over the skeleton³⁰, but other ritual elements differ from one case to another.

²⁵ LUCA 2012, Figure 9, 12, 20 and others.

²⁶ LUCA 2012; ȘEULEAN 2012; they used in their analysis databases and databases of information, with cluster and seriation analyzes.

²⁷ Perhaps this phenomenon also occurs in other civilizations where no more graves or cemeteries were found. In the early Middle Ages, a cemetery was found at the Cuptoare Șfogeia, and the settlements were 4–6 km away; in Cornereva zone there were about 20 hamlets and the graves were in the center of the commune: LAZAROVICI G., UZUM 1977; LAZAROVICI G. *et al.* 2010; LAZAROVICI G. *et al.* 2015, 145.

²⁸ VLASSA, PÁLKO 1965, 13; VLASSA 1972; 1976, 251; NECRASOV, ȘTIRBU-BULAI 1965, 25–26; LAZAROVICI G., MAXIM 1995, 183–188, 401–402, Figure 36 and Pl. XII/2, XIII/2, XVII–XVIII, XIX/4, XX/4, XXI.

²⁹ POPUȘOI 1980.

³⁰ LAZAROVICI G., MAXIM 1995, 188, Figure 36.

Most of the monochrome vessels from Cristian IA are made of semifine paste, they are different from those from Gura Baciului, which are also made of fine paste with a better firing, which shows two different ways of penetration, preserved in the next stages too, in SC IB, when there are connections through the large dot decoration on good quality ceramics between Gura Baciului, Cârcea, Donja Branjevina, the Danube Gorge³¹. The large dots also have a later version, on a weaker quality ceramic, as it appears at Târgu Mureş and Ajman³² (phase SC IC), associated with various motifs consisting of white lines³³. The findings from Cristian, through their position in the centre of the southern Transylvanian salt areas, the presence of skeletons and some elements of architecture (Figures 7/a & 8), have analogies at Ohoden, in the NW of Bulgaria (Figure 7/b), showing the road from the west of Bulgaria to the Olt Valley and from there to the salt areas of southern Transylvania (Cristian, Ocna Sibiului, Miercurea Sibiului). The pithouses from Cristian I and Ohoden are similar, in both cases pillars placed on the edge of the perimeter of the dwelling were used (Figures 7/a-b & 8).

The cultic area from Cristian (Figure 8) seems to have been covered or fenced, as evidenced by the many stones that fixed the vegetation of the roof³⁴. In the salt areas of Provadia-Varna, on their beaches and their edges with golden sands in Bulgaria, were researched features, facilities for exploitation and drying of the salt, fortification systems with stone bastions and a series of pits. The discoverers called these a Pit-Sanctuary. Initially, we had some reservations about the term, but after the publication of Cristian I by Sabin Adrian Luca (Figure 8), we consider they are possible and archaeologists have arguments for such situations. The materials resulting from the researches from Cristian I were published by archaeological complexes, with plans, photographs, drawings, materials with synthetic descriptions³⁵. All the pots in the cultic area are made of monochrome paste, some of them, the special ones, such as the two-mouth pot, have red engobe. In the settlement, which is a few tens of meters away, there are semi subterranean houses like those from Gura Baciului, improperly called “nests”³⁶. In our excavations at Gura Baciului we have demonstrated that

³¹ In many studies we analyzed the chronological and cultural series from Romania, Serbia, Bulgaria, Macedonia and others: LAZAROVICI G. 1977; 1978; 1979; 1979a; 1983/1984; 1994; 1995; 1996; 1998; 2000; 2005; 2006; there are also many collaborations with other colleagues about architecture, art.

³² STALJO 1986; RADOSLAVLJEVIĆ-KRUNIĆ 1986; BEREZKI, HÁGO 2012 have a beautiful collection of materials from SC IC-IIB, insufficiently published, which plays an important role in the neolithisation of the Center and the Transylvanian Plain. Rescue excavations made by DMI (Historical Monuments Directorate) in 1960 at Târgu Mureş.

³³ STALJO 1986.

³⁴ For the cultic zone at Cristian I, on what has been published so far by S. A. Luca we reconstructed image from Figure 6, but some pits still need to be analyzed. We have the offer of S. A. Luca to reconstruct and interpret the complex on the basis of the details and materials discovered.

³⁵ LUCA 2012, 58–61; 2015.

³⁶ VLASSA 1972, 8; LUCA 2012, 58.

they are semi subterranean houses that form a series over time, often overlapping, and which are located around a central space (see below Gura Baciului).

The settlement with pithouses and semi subterranean houses from Cristian is like those from Gura Baciului, but also from other areas (Cârcea-Hanuri, Dudeștii Vechi, Fundătura, etc.)³⁷. The housing area is separated from the cultic area that was eastward; at Baci the tombs were found in some dwellings.

The monochrome aspect of the pottery in the cultic area is obvious and it was defined by S.A. Luca as Cristian IA. Issues that arise are related to vessel typology and ¹⁴C data. Below we present other situations with salt-rich areas in Transylvania. Analysing the wealth of complete pots, more numerous than in any other settlement of the Balkan monochrome horizons, we observe two clusters:

In the first cluster, perhaps earlier, the vessels in the graves from Cristian do not correlate with each other (Figure 9/a), although there are several vessels in the same complex;

In the second cluster (Figure 9/b) they correlate with settlements in salt areas from the horizons SC IB, maybe IC.

We also notice that most of the recipients have the bottom made on the mould on which the vessel was modelled³⁸, although vessels with ring-shaped bottom can also be found. These offer greater stability. Being amphorae, we think it is possible that they have been deposited with brine for the deceased to have salt beside him for his needs in the “afterworld” (“the hunting grounds” of the Native American peoples).

In Cristian we have two Monochrome horizons, one with vessels without ring-shaped bottom, belonging to the first migration, and those with ring-shaped bottom, which together with the globular vessel shapes indicate a later horizon in what S. A. Luca defined as Cristian IA (the cultic area, see the second cluster: Figure 9/b).

From the second cluster (Figure 9/b) we can see that Cristian is located in time between the discoveries from Gura Baciului, pithouse B1 and Seușa, dwelling L1, the latter being determined by the globular vessels (G3, G4, G5, G10), so between SC IB-IC. These relative timeline frames coincide with the absolute chronology data (¹⁴C, above Figure 6), the series ranging from Gura Baciului pithouse B1 and Cristian I ¹⁴C data Beta-707716, to Cristian I, ¹⁴C data Beta-407701.

When we will have more ¹⁴C data, from other complexes too, we will be able to make further clarifications. But the monochrome aspect of the entire cultic place remains, and the

³⁷ MCPHERON, SREJOVIĆ 1971; NICA 1984, 36; LICHTER 1993, kat. 27; LAZAROVICI G. *et al.* 1996; LAZAROVICI C.-M., LAZAROVICI G. 2006, 84–126.

³⁸ LAZAROVICI G., MAXIM 1995; ȘEULEAN 2011, 10, Figure 3, 109, 269 types J1–J6; 2012, 153, Figure 76; LUCA 2012, 91, 141, Figure 111, where appear between 20 and 2 fragments.

neighbouring settlement is synchronous with SC IB-IC³⁹. Let us not forget that in the cemetery area there are some early pits that S. A. Luca regards as SC IA, as well as perhaps the first part of the graves as they appear from the series (Figure 9/a); but the data being uncorrelated, we should have some reservations. We have to say that only in Cauce Cave, settlement from SC IC, there are no sources of salt, in all other settlements there is salt, but this cave connects to the southern areas of the Oltenian Subcarpathians (e.g. Băile Govora), where there are sources of salt, but not as rich as those in Transylvania.

In the Cristian settlement, the presence of barbotine, especially from pithouse B9⁴⁰, causes us to consider that this settlement may have lasted longer, until SC II.

We insisted on the findings from Cristian I, being so far the earliest in the Carpatho-Danubian region and better defining the SC IA stage (Figure 9/a with Gura Baciului, abbreviated in the tables as GB; B2A series head correlated with GB B1 in Figure 9/a). We remind that at the beginning we defined with certain reserves SC IA due to the few ceramic materials from Gura Baciului. The second cluster from SC IB, painted with large white dots, not associated with straight or wavy white lines, continues with Gura Baciului pithouse B1 (GB B1 base and GB B1 filling of the hut), correlated with three types of globular vessels (O16, O36, O35).

Cristian I is 10 km away from one of the richest salt areas in southern Transylvania, the one from Ocna Sibiului. At the moment there are over 13 lakes with salt water, as well as a great spa and tourist resort. In many of these lakes there were salt exploits (mines). In time these old mines collapsed and turned into salt lakes, some communicate, others not, on several levels, and in some cases, with all the recent arrangements in the baths and salt lakes, collapses occur. From a recent collapse one can observe the good quality salt rock.

Salt exploitations, in the form of brine or salt rock, we think have been used since the early Neolithic. The settlement at Triguri, researched by Iuliu Paul⁴¹, is on a “mountain” of salt, and the terrace on which the settlement stays chokes the salty brook that passes through Ocna Sibiului. Springs, salt lakes were everywhere. Many are located at the base of the slope, which explains the many traces of exploitation from all periods. As a result of the collapse of the steep banks, even today on the edges of the lakes transformed into touristic, rest and treatment points (sludge, salt, iodized salt), salt cliffs emerge, the whiteness of which is reflected in the lakes (Figure 10/c). The names of the lakes are related to former salt mines (Ocna Pustie, Gura Ocnei, Ocnița; later they were renamed Horea, Cloșca, Crișan).

These exploitations are marked on the first Austrian maps (Figure 10/d–e) as salt pits. Over time they have been transformed into lakes for rest and treatment. In the days of the

³⁹ The material in the settlement area has not been published on complexes, so we can not refer to it.

⁴⁰ LUCA *et al.* 2015, 168, table 5 and și graphic 5.

⁴¹ PAUL 1970; 1989, 3–27; 1990; 1995, 19–70; 2009; and others.

Habsburg Empire were erected the first buildings with a beautiful architecture to function as baths on the shores of some lakes.

Ocna Sibiului - Triguri (Salzburg — De. 'Salz' = salt)

The archaeological area

At the border of the village are signalled 34 archaeological sites⁴². On Triguri Hill, east of the village, Iuliu Paul researched 10 archaeological features (pithouses, semi subterranean houses, dwellings and pits) from the time of Starčevo-Criș culture (named by I. Paul Precriș⁴³) (Figure 11/b–c). There are traces of Paleolithic (Mousterian) housing in the area, seven areas with Neolithic discoveries, some isolated, six with Copper Age discoveries and others.

All this shows interest in using and exploiting salt: 10 stone axes have been discovered at Triguri, approx. 15 axes from different periods, some used to cut the salt (see also the Achim Museum collection: Figure 11/d, crushers, perforated massive axe, Neolithic, Roman era artefacts)⁴⁴.

Relative and absolute chronology

Many of the archaeologists from Cluj (N. Vlassa, Gh. Lazarovici, Zoia Maxim) and colleagues from Alba Iulia and Sibiu have developed doctoral theses based mainly on the excavations from Ocna Sibiului, Șeușa, Miercurea Sibiului and others or have made references to different materials⁴⁵.

We must note that in the 19th century there were numerous lakes downstream of Ocna Sibiului, marshes, salty areas (Figure 11/c), but there are also fresh water streams and springs, as well as places favourable to fishing and hunting. The terraces on which the settlements of Triguri and Fața Vacilor are located, are flat fields, favourable to agriculture, and at the base the salt sources, essential for cattle and humans. The essential element was the salt that determined these long, steady settlements.

⁴² LUCA, PINTER, GEORGESCU 2003.

⁴³ Comments on the term and chronology: LAZAROVICI G. 2005 and bibl.; 2006, 140, figs 36, 142, 143, 147–148, *sub voce* OS; and others.

⁴⁴ PAUL 1970; 1989, 3–27; 1990; 1995, 19–70; 2009 and others; CIUTĂ 2005 and bibl.; LUCA *et al.* 2003, s.v. Ocna Sibiului and bibl.

⁴⁵ CIUTĂ 2000; 2001; 2002; 2005 and others; DUMITRESCU-CHIOAR 2010; with references to others LUCA 2014, 8 no. 4 and others.

The earliest painted materials show that habitation begins at Ocna Sibiului with SC IB-IC (ceramic painted with small or oval dots arranged in opposite triangles, Figure 15/a-b) and lasts until SC III.

We extracted from the databases the correlations between Ocna Sibiului and Gura Baciului, for which we have close ^{14}C data (Figures 6 & 12) and those from Anzabegovo I, and on the other hand we followed the ^{14}C data that mark the communities coming through the Olt Valley from Bulgaria, through Veliko Târnovo – Džiuliunica, on the Struma valley towards south, and from there towards west. The beginnings come from Macedonia, at Strumica, which connects with Western Balkan settlements.

From Tables 12 we can see that in Ocna Sibiului there are some materials that seem earlier, but we know from most settlements that the decorative motif AP from pithouse B1 in Ocna Sibiului (OSB1) is later, and it is correlated with the larger number AP motifs with OSL4 and OSL8.

We have previously mentioned that, at Ocna Sibiului, in the deep pithouses, the soil gets compacted and materials from the upper levels penetrate the levels below of the pithouse⁴⁶. We know that the AP-type pressed marks on the lip are associated with SC IC phase materials in other settlements with monochrome ceramic after large white dots too.

At Cristian, they also appear in level SC IC in the dwellings area, late stages (Figure 9). These observations are important because now along the same path from the centre of Bulgaria comes the grooved ornaments: Džiuliunica, Gălâbnik, and at us in Şeuşa (see Figure 14/a-e)⁴⁷. The salt sources at Ocna Sibiului played an important role for the Veliko-Târnovo area and the SC I settlements in the eastern and southern part of Bulgaria (Gălâbnik, Figure 14/e; Krainici⁴⁸, Figure 14/f, ceramic decorated with dots – compare with Figure 13, OS and MS).

We also note at some vessels the arrangement of the perforations of the handles in a vertical position (Figure 14/a-b), which serves to hang, so the liquids or the brine do not spill by mistake, perhaps having also myths related to it, the urine being considered the piss of the gods (salty water or piss destroy the vegetation).

There are also some asymmetric vessels in the SC culture that have four large handles, as wide as a backpack, allowing the transport of liquids on the back (water, brine) over long distances⁴⁹. The rivers and their tributaries from Ocna Sibiului flow northwards between the Hărtibaciului Plateau and the Secaş Plateau towards the Transylvanian Plateau, whose southern side has no salt, then they flow into Târnava Mare River (Figure 5/a-b).

⁴⁶ PAUL 1995, 31, fig. 2.

⁴⁷ LAZAROVICI G., LAZAROVICI C.-M. 2017, fig. 5.

⁴⁸ CHOHAZDZHEV 2001, 253, Abb. 1; DEMOULE, LICHARDUS - ITTEN 1994, 608; LAZAROVICI G., LAZAROVICI C.-M. 2016, fig. 7, 23.

⁴⁹ LAZAROVICI G., LAZAROVICI C.-M. 2015.

The splendid ceramic painted with dots is organized in decorative motifs (Figure 15/a–b), but in the same features there is also pottery decorated with pinches and white motifs in a network, characteristic of SC IB-IC, similar to those in pithouse B1 from Gura Baciului (Figure 24).

At Miercurea Sibiului there are: salt sources and spa resort with salt; areas with salted sand, used for public roads in winter (Figure 17).

There are four early Neolithic settlements in the city's perimeter, three linked to the first migrations: one systematically researched in the Pietriș point (MS1) with magnetic survey, two on the route of Highway A3, two investigated by rescue excavations and one probed (MS2 = Pustia).

These settlements show again how important salt sources were for the first Neolithic communities.

Two globular vessels (MS – B10⁵⁰; Figure 9/b forms O24 and O25, Luca et al. 2008, linking to Cristian – C083⁵¹) from Miercurea Sibiului are related to the SC IB phase, but predominant is the monochrome appearance of the IB – IC horizon (with large dots, of poor quality (Figures 14/g–h & 15/e–i), and the monochrome pottery represents over 93% of the total.

Based on ¹⁴C data (Figures 4 & 16), the feature would belong mostly to SC IC. So it would be the second Monochrome phase, born perhaps from the evolution of Cristian. But the association with white lines (thin or wide, small dots: Figure 15/g–h) has analogies at Vaksevo (Figure 18/b.5) and Măgura-Buduiasca (Figure 18/a.4–5, 8–9, 12), which, associated with thin curved lines, cross-shaded triangles, lines without a precise contour, large white spaces associated with red, triangles (variants of that solid style) also imply an SC IC, maybe IIA (for Figure 24/a.1, 6), characteristic elements for Gura Baciului II (SC IC/IIA).

Radiocarbon data confirms our relative chronology series according to the comparative stratigraphy and ¹⁴C data (Figures 2/d, 6, 9, 12.13, 16), as well as those of other colleagues, based on other classification codes⁵². Characteristic is B10 (a semi subterranean house feature), but this also reaches SC IC/IIA⁵³. These involve a southern movement along the Olt between Oltenia (Grădinile⁵⁴ with that Solid Style⁵⁵) and western Muntenia (Măgura-

⁵⁰ MS B10 (in fact semi subterranean house): LUCA, SUCIU 2008; LUCA *et al.* 2008, 329, plan 6 and fig. 18, C14 data, upper at fig. 4.

⁵¹ Cristian, LUCA *et al.* 2015, 23–24, 28, 95–96, 120 and others: they come from the pits covered with lids, at the top of the pit, and in pit G83 also in the middle: figs 82–84.

⁵² LUCA *et al.* 2008, 329, fig. 1, photo 1; ȘEULEAN 2012, 71, 123, 125.

⁵³ LUCA *et al.* 2008, plan 5–6.

⁵⁴ ANDREESCU *et al.* 2003.

⁵⁵ NICA 1981; 1983; 1991; 1986, 38, figs 5/9; 9/1–4, 6, 8–11, 15.

Buduiasca⁵⁶), which show tight connections with areas in the eastern Balkans (Džiuliunica⁵⁷, Vaksevo and others⁵⁸).

The painted pottery from Ocna Sibiului and Miercurea Sibiului being in the same fashion (technology, shapes, ornaments), is slightly different from that of Seuşa site, where it is in smaller proportion, perhaps because fewer features have been researched and which would relate to the phenomena coming from Serbia.

Radiocarbon data shows that at Şeuşa there is another migration, on the same routes as phase SC IB from Gura Baciului or Donja Branjevina, but later. The dots from Gura Baciului in features SC IC are scarce and associated with brown painting they are organized on rows, opposing triangles (Figure 15/a–b), with analogies on the Olt Valley towards south in Cârcea, Grădinile and others. In fact, the findings from phase SC IC-IIAB in the Danube Plain (Grădinile, Cârcea, Măgura-Buduiasca, Figure 18/a) have links—as we have shown above—towards western (Gradešnica A⁵⁹) and central Bulgaria (Džiuliunica⁶⁰, Figure 19), but also towards south-west, at Nevestino, etc.⁶¹

We must note that since the early Neolithic, the roads of the shepherds, related to migratory pastoralism⁶² were associated to the salt roads, being ethno-cultural communication routes, for which the mountains were not a problem but a favourable factor during the warm and dry season (May–August).

The Middle Mureş Basin

There are no extensive researches on the middle course of the Mureş, the works at the Alba Iulia–Cluj-Napoca Highway are in progress, and the results of the research have not yet been published. The doctoral thesis of Alexandru Bărbat analyses very competently some of these settlements⁶³.

Şeuşa

⁵⁶ ANDREESCU, BAILEY 2002; 2003; 2004; ANDREESCU, MIREA 2008.

⁵⁷ ELENSKI 2000; 2002; 2004; 2008, 2008a; ELENSKI, LEŠTAKOV 2006; and others.

⁵⁸ CHOHAZDZHEV 2001; CHOHAZDZHEV *et al.* 2007; and others.

⁵⁹ NIKOLOV 1974; SCHUBERT 1999, 62–63. Schubert has done a very analytical work, well documented, with broad visions. Its data was not introduced into our databases because most of the information about the painted ceramics was from the primary sources, but there are other information we did not have.

⁶⁰ ELENSKI 2000; 2004; 2006; 2008; KRAUSS *et al.* 2014.

⁶¹ CHOHAZDZHEV *et al.* 2007, and others.

⁶² ARNOLD, GREENFIELD 2006.

⁶³ BĂRBAT 2012a; 2012b.

The settlement is not located along the communication routes, nor close to large salt sources. The settlement was not very large, few features have been researched, but they were well published⁶⁴, which allowed us to include the information in our databases, but they were not processed on the computer like those from Gura Baciului, Miercurea Sibiului or Cristian I⁶⁵. It is characteristic of SC IC, being at the head of the series (Figure 9/b). Bentonite and salt water with the known characteristics has been used, perhaps, for its curative role⁶⁶.

Șoimuș

In the Deva-Hațeg area there is a salt fracture that goes to Transylvania (Deva, Hațeg, Orăștie, etc.)⁶⁷, and here and there salt ponds and salt lakes appear.

The settlement is north of Deva and Mureș River, on the Highway. Two areas with numerous features were investigated, with pottery and flint tools (it is the yellowish flint with whitish spots⁶⁸). As sources for this type of flint are mentioned those north of the old Balkan mountains⁶⁹, called Stara Planina⁷⁰, which continue towards Serbia.

The pot of Șoimuș (Figure 21/c) has analogies at Crăciunești in the Balogu cave (Figure 21/d), with brown angobe⁷¹. At Gura Baciului this type of vessel appears in the B8, B9, G33 and B20 features, dated to SC IC-IIA⁷².

Gura Baciului

The site, through systematic excavations and the exhaustive processing of materials in databases, is important for the evolution of architecture and ceramics, but also for the

⁶⁴ CIUTĂ *et al.* 2000a; 200b; 2002; the most important work is CIUTĂ 2005; towards Precriș terminology at PAUL 1989; PAUL *et al.* 2005 (and others), and CIUTĂ 2000; 2002; 2005 we have had some comments: LAZAROVICI G. 2001; 2005; and others.

⁶⁵ ȘEULEAN 2012; TUDORIE 2011; 2014; and others.

⁶⁶ BĂRBAT 2012a, 95 analyzes apud CIUTĂ 2005, 53, 72 for Ocna Sibiului.

⁶⁷ BĂRBAT 2012a, 96–98.

⁶⁸ BĂRBAT 2012a, pl. CXLIII–CXLIV.

⁶⁹ BĂRBAT 2012, pl. III.2, XLVII, LVI.

⁷⁰ NACHEV 2009, 17, 18; GUROVA 2011; 2013 groups from figs 1, 5 correlations.

⁷¹ Engobe is characteristic for SC IC, unlike the brown colour obtained during firing, that is earlier. BĂRBAT 2012a, 93 and notes 301–302 and bibliography at Chapter III–Repertory: there are also sources of andesite, material used for tools. Appears at Ocna Sibiului in dwelling L2: CIUTĂ 2005, 184–185.

⁷² LAZAROVICI G., MAXIM 1995, s.v. mentioned complexes.

interdisciplinary researches undertaken here (geography, geology, fauna, anthropological analyses, pedology, ceramics, tools, architecture etc.⁷³).

The housing begins with a series of complexes with monochrome ceramics (Figure 22/a), partially affected by other, later pits, which is why there were few clear materials, and therefore we defined as hypothetical the SC IA phase in our excavations and those of N. Vlassa⁷⁴. In the Balkans too there are few materials from phase SC IA, most of them found outside features⁷⁵, of which about 50% are from Gura Baciului. The vessels are monochrome fired and they have no slip or engobe. They are red (Figure 22/b.1) or brown (Figure 22/b.2–3).

Phase SC IA-IB

In a later phase there is monochrome pottery painted with large white dots on the monochrome red background of the pot, defined as SC IA-IB (Figure 18) because of the monochrome aspect of the rest of the ceramics predominant in the B2A feature B2A base (Figure 22/a). At this time, there are no pinches made with the nail or incisions.

In addition to the Gura Baciului discoveries (124 fragments), from the South of central Europe we have 227 fragments in the database (but the registrations are over 10 years old, today there are more).

The white painting is organized in dots forming geometric motifs (see above on OS, Figure 15/a–b, triangles, diamonds, zigzags, etc.).

This type of motifs, spread in southern central Europe, shows the importance of migration, as well as the ethno-cultural links determined by the need for salt sources in the first place, but also the exchange of livestock, flint and others.

During the stage SC IB, in the secondary and seasonal settlements, or where there was little research and there are no features with painted ceramics, the Monochrome aspect we have called Monochrome II⁷⁶ is maintained. It has monochrome aspect, but it retains only

⁷³ LAZAROVICI G., MAXIM 1995, see also interdisciplinary studies: studies about architecture: LAZAROVICI G., LAZAROVICI C.-M. 2002; 2003; 2005; 2011; LAZAROVICI C.-M., LAZAROVICI G. 2006; and others.

⁷⁴ VLASSA 1972, in particular pl. 15–16; LAZAROVICI G., MAXIM 1995, pithouse B2A, its base, where cca. 97% is monochrome ceramic, the rest of the material is painted, there are also some impressions, but not pinches. Soem fragments have been fired at 900°C.

⁷⁵ Larissa Argissa Magula: HAUPTMANN, MILOJČIĆ 1969, 6.8–9; MÜLLER-KARPE 1968, 444, Taf. 126A, kat. 97; ASLANIS 1992, 535, Pl. G.2, 4; Otzaki Magula, HAUPTMANN, MILOJČIĆ 1969, 6.7; general, MÜLLER-KARPE 1968, 451–452, Texte kat. 123, and in volume 2 1968, Tafeln 127a and other materials of Balkans.

⁷⁶ Diffusion phenomena take place on Danube and Mureş river, from the south and east, of the white and red painting and Monochrome II, in Hungaria sites at Kopancs, Zsoldos and others: MAKKAY 1965, 7–8; 1982, 35, 39; TITOV 1980, 95, pl. 47/1 and others; AP decorative motif of our codes (rare pressures on the lip) KUTZIÁN 1944, pl. XXXI.6; XXXII.3; and others.

certain elements. If there are secondary settlements formed by families coming from a main settlement, then their members bring with them the knowledge that those families have. Through direct contacts (marriages, family visits, or large celebrations of the former community: marriages, funerals), they come in contact with the main settlements and bring other elements or objects.

If there are workshops (for ceramics⁷⁷ or tools) in the main settlements, they can bring other objects too, that are not manufactured in those secondary settlements. Those new elements we call or define as “fashion” (reflected in ceramics technology, decoration or shapes).

To the seasonal settlements (agricultural works, hill/mountain-plain transhumance, workshops at flint sources) community members took what they needed during the season⁷⁸. In some cultic areas (the case of Cristian I) a certain ritual of the great family they belong to was preserved.

Phase IC

Now the process of neolithisation is spreading throughout the Balkans (Figure 24). In what we define as Monochrome I, we notice that communities go towards the salt sources on two ways, one through Bulgaria (then along the Olt river), another through Serbia (Axios–Vardar), which causes diffusion and migration towards Hungary (Szarvas 23 and Tiszasziget)⁷⁹.

The white painting in Macedonia, Western Bulgaria, Eastern Serbia, Oltenia, Banat, Transylvania has a linear character (triangles, parallel lines, hatched lines, wavy lines, etc. as we mentioned above) and it has in all areas the same aspects. These links we believe to be primarily determined by the need for salt for humans (food, meat preservation) or human or animal health, which leads to permanent contacts, considered as “fashion” elements (especially in decoration and ceramics technology).

From the main settlements—which often control salt sources—swarmings take place, some are seasonal settlements (4–5 km distance from the main settlements) or diffusions where the dynamism and contact with the big settlements is broken and there is a process of stagnation or involution compared to the starting areas. Sometimes these are the beginning of local developments.

Due to lack of statistical analyses and publication of materials on archaeological complexes, comparative stratigraphy relationships cannot be sufficiently defined. Sometimes there are social-religious causes, such as at Cristian I, where the dynamics of evolution is

⁷⁷ Not everyone can make a pottery fired at over 900°C temperature.

⁷⁸ In the analysis of statistical data lacking luxury ceramics, old items are preserved.

⁷⁹ MAKKAY 1981, 96, 100; 1982, 38–39.

different: no decorated pots are deposited in pits or graves. But the evolution of the shapes follows the SC IA – IC stages.

We do not know the social or psychological factors (relating to family or small groups) that stand behind evolution or dynamics⁸⁰. In all the space we study, we find the pithouses and semi subterranean houses, with similar shapes and dimensions, with few pits for pillars.

During SC IIA, the surface dwellings appear, as we encounter in the early Sesklo culture, and in the Carpathian-Danubian region are now being used the dwellings (Gura Baciului, Donja Branjevina, etc.⁸¹).

There are two different developments in ceramics: one in eastern Serbia where white painting has not many different motifs; another in the center and west of Bulgaria (Figure 21b, 24d, f) where the pottery is decorated with large white painted spaces, defined by us as SC IC-IIA, as we have shown above.

In Oltenia stage SC IC-II appears at Grădinile, in Muntenia at Măgura-Buduiasca⁸² (Figure 18/a.3), and in Transylvania (at Gura Baciului II there are few materials with this kind of motifs, being associated in features with motifs painted with red-brown, brown⁸³). Motifs with large white spaces, curved, do not appear in Banat. They are spread only south of the Southern Carpathians. Their area of development is in the Basin of Maritsa, the Struma Valley and the Lower Danube Valley.

The third migration with diffusions (SC IIB-IIIIB)

The red, brown, black painting is now becoming usual, the incisions and barbotine appear, and in some areas the bitronconic shapes will spread more strongly to the south and east of the Carpathians, also linked to the salt sources, which will lead to the neolithisation of other regions⁸⁴. But this is another, more complex theme, in which intervenes the exchange of other commodities (obsidian, flint) besides salt.

At the time of this migration, the centre and north of the Pannonian Plain is neolithised through a migration phenomenon found in all the Danube region, and a diffusion from these areas with a local evolution in Hungary.

⁸⁰ Dynamics is more prominent where there are workshops. Archaeologists often define this by the “group” term, in fact a cultural series.

⁸¹ LAZAROVICI C.-M., LAZAROVICI G. 2006, 100 ff. and others.

⁸² NICA 1981; ANDREESCU, BAILEY 2004; MIREA 2005.

⁸³ LAZAROVICI G., MAXIM 1995, color pl. PC VI–IX, there are more dots but the painting is of poor quality PC V, VI.2.4, VIII.1–6, X.5; appear and pinching ornaments.

⁸⁴ LAZAROVICI C.-M. 2017; LAZAROVICI G. 1992: for the chronological systems see: LAZAROVICI G. 1977; 1979; 1983/1984; 1995 a. s.o.

The fourth migration occurs in SC IIIB-IV (Figure 27b), when Vinča A and the Polychromy (Developed Neolithic) evolve in Oltenia, Moldavia, Bessarabia and Northern Crişana get neolithised⁸⁵, and then the neolithisation processes expand to the centre of Europe. In Transylvania the salt played an important role in the Early Neolithic, especially in the Middle Mureş Basin.

We note that during this period are discovered the salt sources in eastern Transylvania (Figure 27/a-b), and then (during SC IIIB) the ones in Moldova which were intensively exploited in the Middle Ages and recently⁸⁶, and those in the western parts of Central Europe⁸⁷.

These last two migrations play an important role in southern Central Europe, the early Neolithic civilization extends to: northern Hungary, southern Slovakia, SW Poland in the upper Tisza basin, eastern Austria (at Prellenkirchen, Brun at the base of LBK there are SC features⁸⁸).

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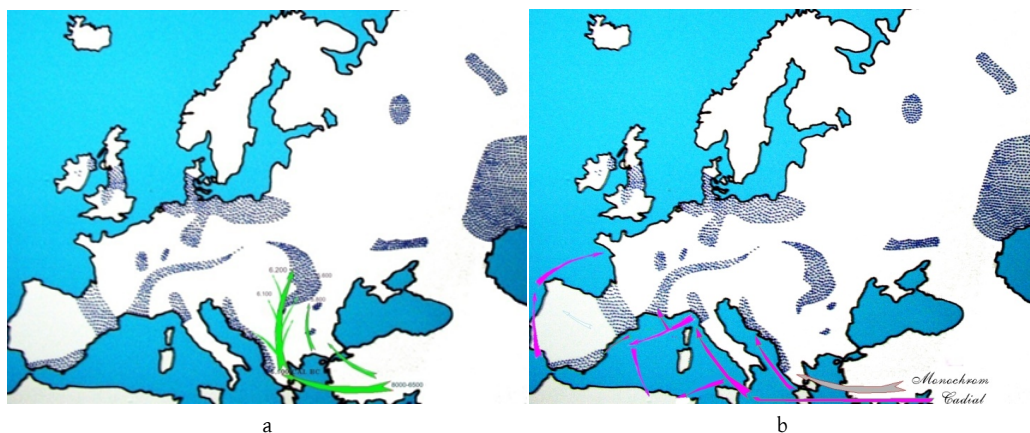


Figure 1. Salt sources in Europe and (a) the first migrations (Monochrome and Cardial), and (b) the Monochrome I migration in Southern Central Europe

⁸⁵ Synthesis — Mexico: LAZAROVICI C.-M. 2017; LAZAROVICI G. 2017; LAZAROVICI G., LAZAROVICI C.-M. 2017; *North Crişana*: VIRAG 2008; *Bessarabia*: DERGACEV *et al.* 1991; LARINA 1994; DERGACEV, LARINA 2015.

⁸⁶ About recent salt sources and exports south to Turkey and East: VITCU 1987; MONAH 1991; 2008; 2008a; WELLER, DUMITROAIA 2005; BRIGAND, WELLER 2014.

⁸⁷ BÁNFY 2013 and bibl.

⁸⁸ STADLER 2005; 2009; 2013; 2017.

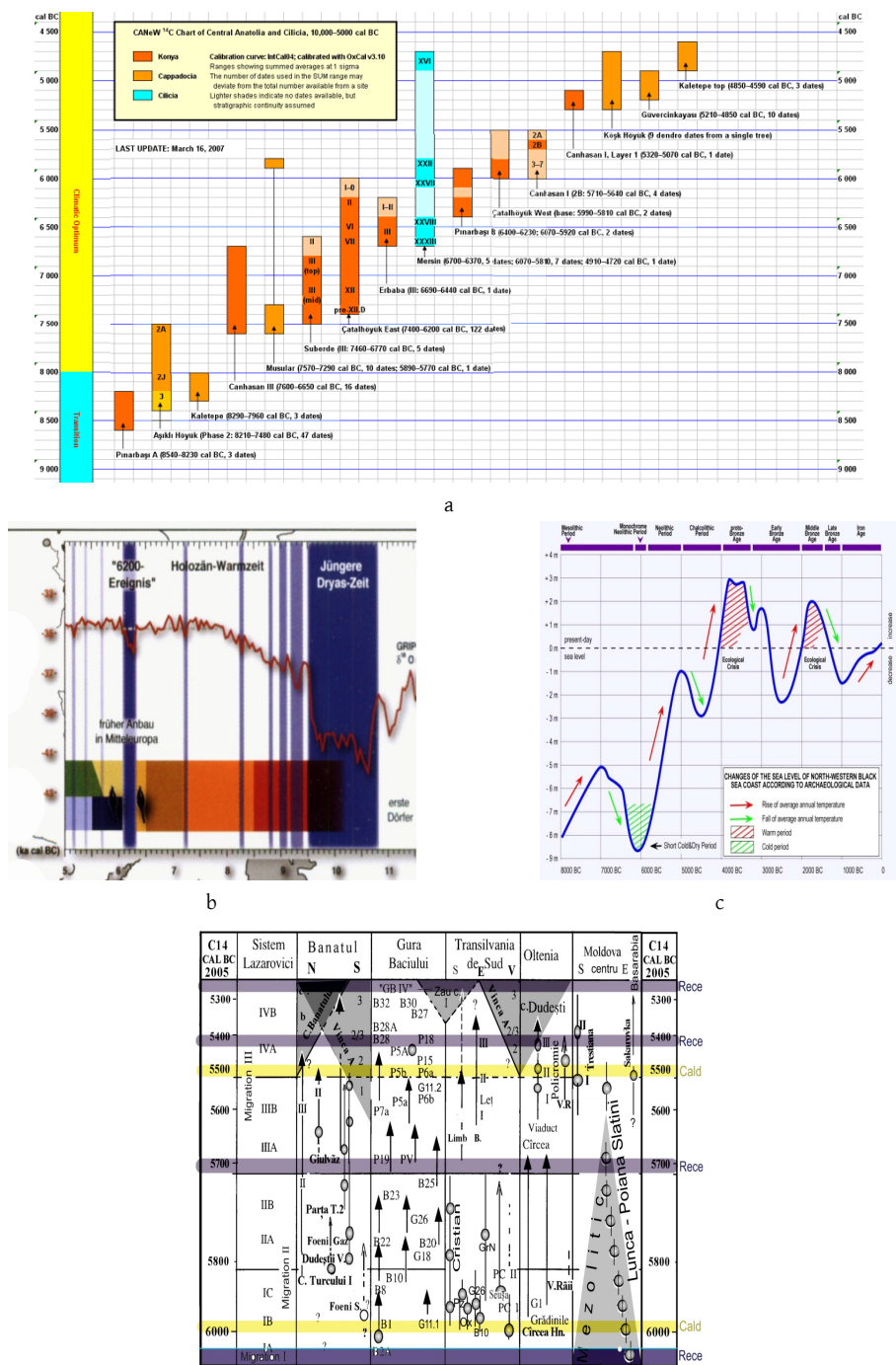


Figure 2. The main PPN settlements between 8000–6000 BCE from Anatolia (a). Climate changes according to DAIM, NEOGEBAUER 2005 (b) and H. TODOROVA communication at Cluj-Napoca 2007 (c). Cold and warm periods on the territory of Romania (d)

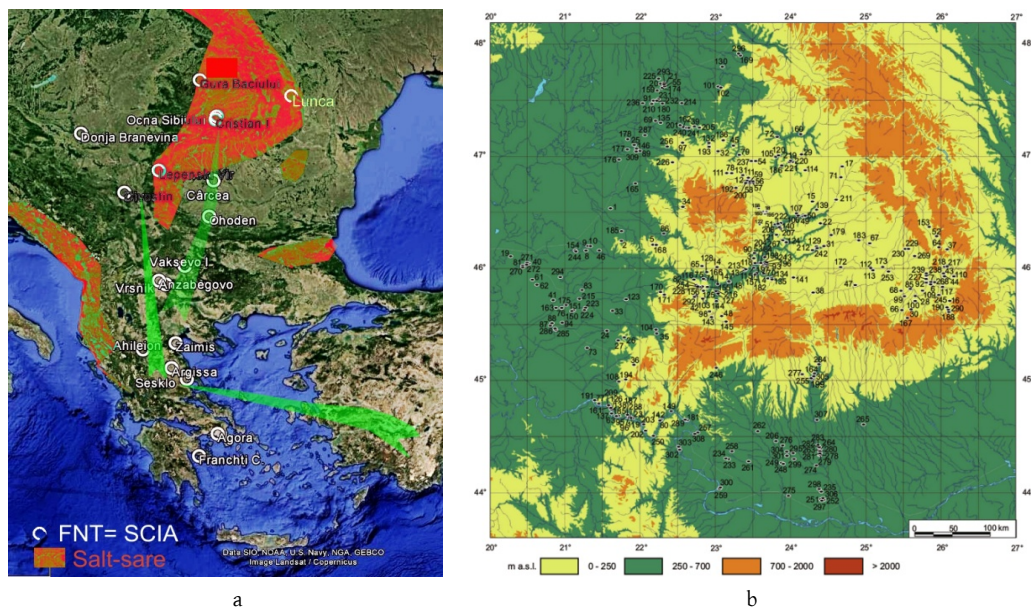


Figure 3. Transylvania and the neighbouring areas: (a) the beginning of neolithization in southern Central Europe; (b) the spread of the Starčevo-Criș culture (SC), apud LUCA & SUCIU 2011

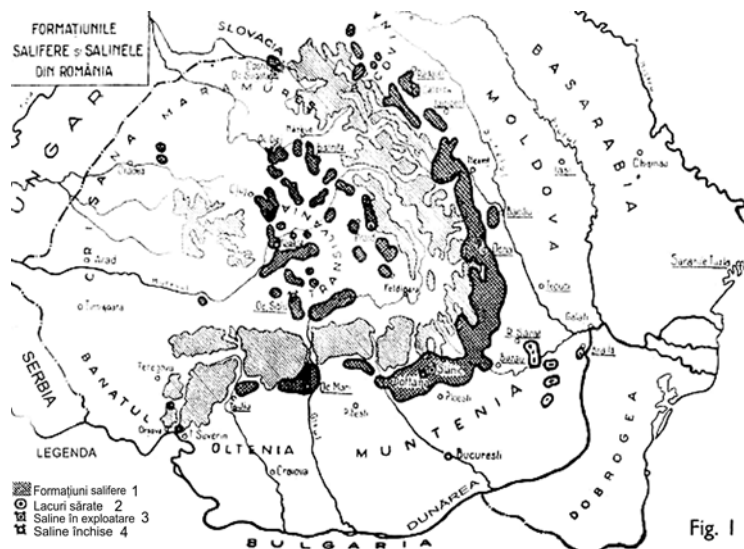


Figure 4. Salt sources in Romania, apud Gramatopol 1997, fig. 1

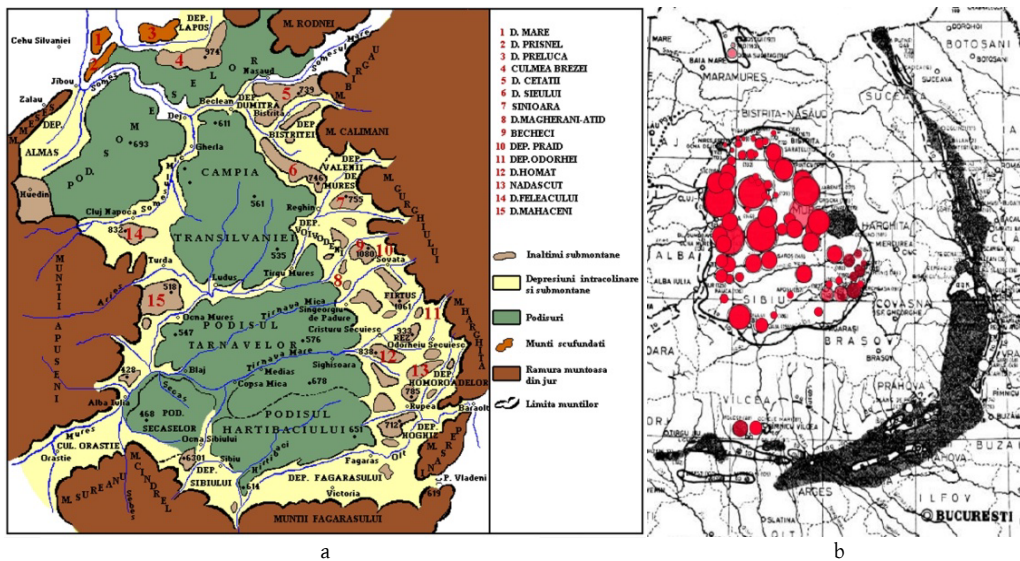


Figure 5. The geography of Transylvania (a) and the intensity of the saliferous areas (ap. A. BARBU; see also Figure 4)

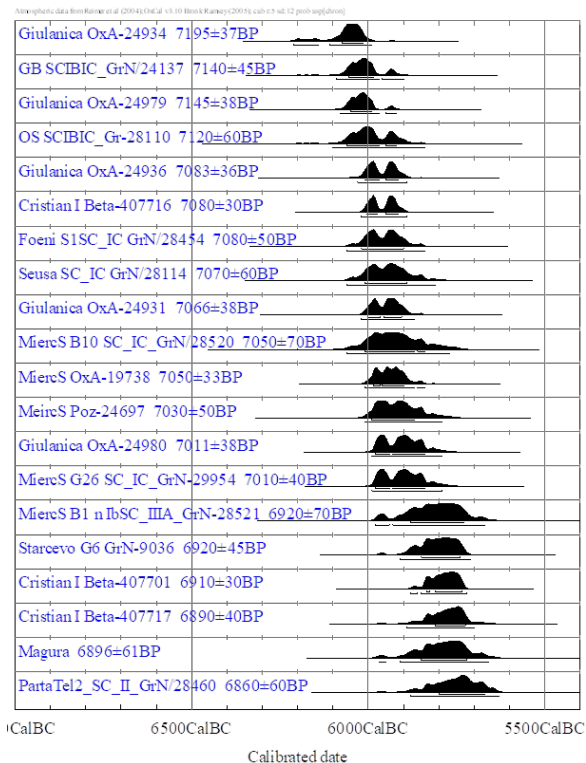


Figure 6. C14 data from settlements related to Cristian I (Giulianica = Džiuliunica)

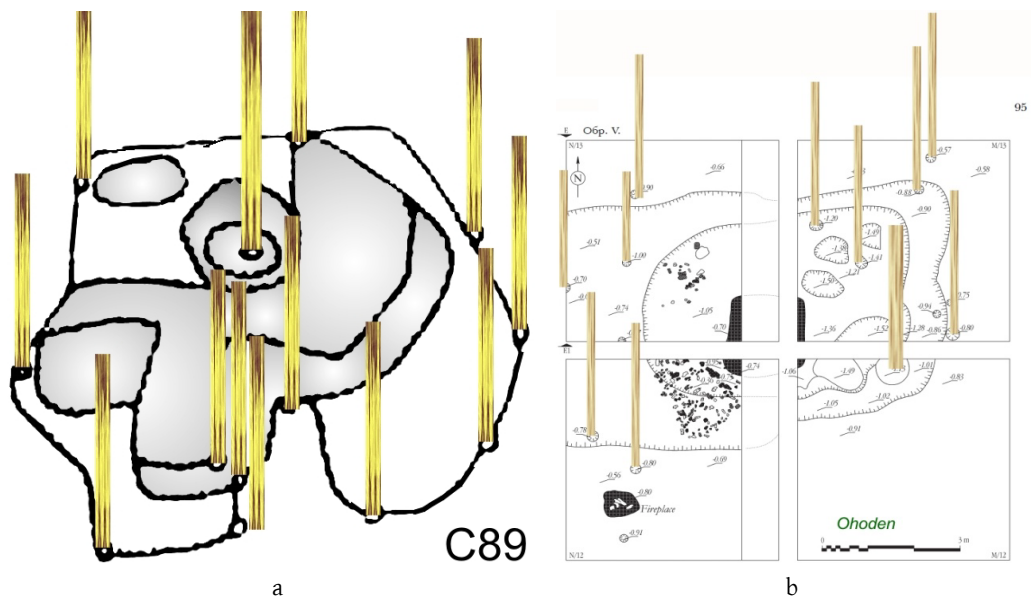


Figure 7. a — Cristian I, C89 (apud LUCA 2015); b — Ohoden (apud GANETSOVSKI 2009)

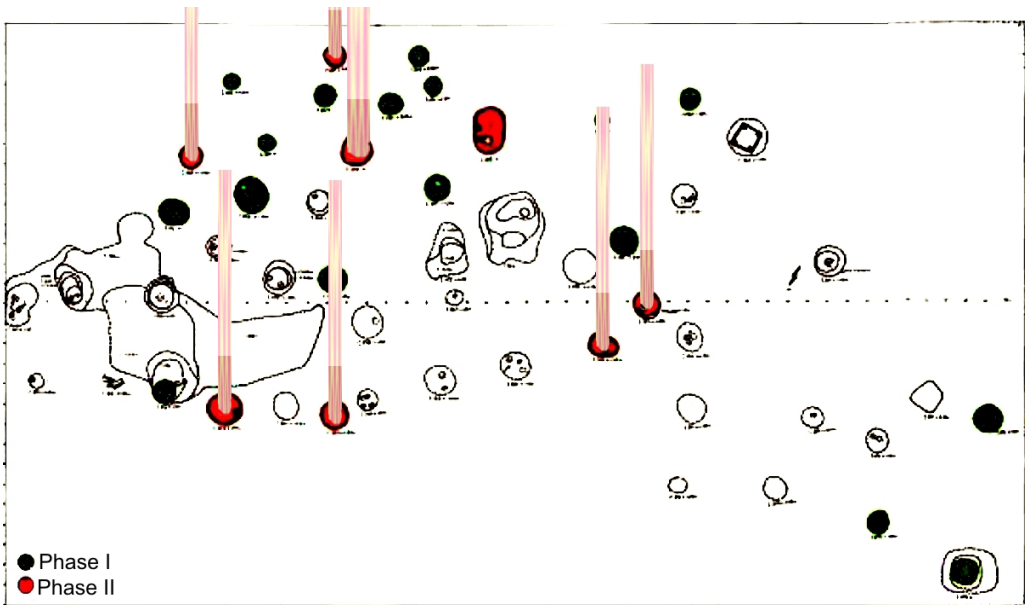


Figure 8. Cristian I, the cultic area (processing apud LUCA 2012)

10 x 14	O16 LE	O29 LM	O35 LE	O20	O19 LE	O3 LK	C22	G6	O16	O36	O25	B4	C19
Cristian 17	1	2	1										
Cristian 38				2									
Cristian 43				2									
Cristian 61				2									
Cristian 74					1								
Cristian 66					2	2							
Cristian I C							1						
GBG24								1					
GBB1									1	3	1	1	
GBB2A												1	1 1

a

23 x 38	F3	O16	O36	C22	O25	B4	C19	O9	O10	O13	O9	O24	O23	O6	O19	O15	O21a	O21a	O25	O25	LE	O14	G3	2	G10	G5	G4	2+8	8+2	O26	HG	DB	AF	DA	V1	KA	EI	CG	GC	GE							
GBB1 1	1																																														
GBB1	1	3	1		1																																										
GBG24				1																																											
GBB2A					1	1	1	1															1																								
OSB1+L2								1	1	1	1	1																																			
MS												1	1																																		
Cristian 83												1																																			
Cristian 9														1	1																																
Cristian I 74															1																																
Cristian 14															2	1	1	1	1	2			1																								
Cristian 71																						1	1																								
Cristian 68																						2																									
Cristian 93																						1																									
Gura Baciului I																							2																								
Cristian 37																								1	1	1																					
Cristian 69																								1																							
DB																									1																						
OSfig. II a																									2																						
OS																							12			1	2	4	1	2																	
OSL2																																															
Cauce																																															
MSB10																																															
Sensa L1																							1																				3	10	2	1	1

b

Figure 9. The series of SC I features in Transylvania:
a – the first uncorrelated, perhaps early cluster, followed by Gura Baciului from SC IA;
b – the next SC IA-IB clusters, determined by the globular vessels with O.. markings, early shapes

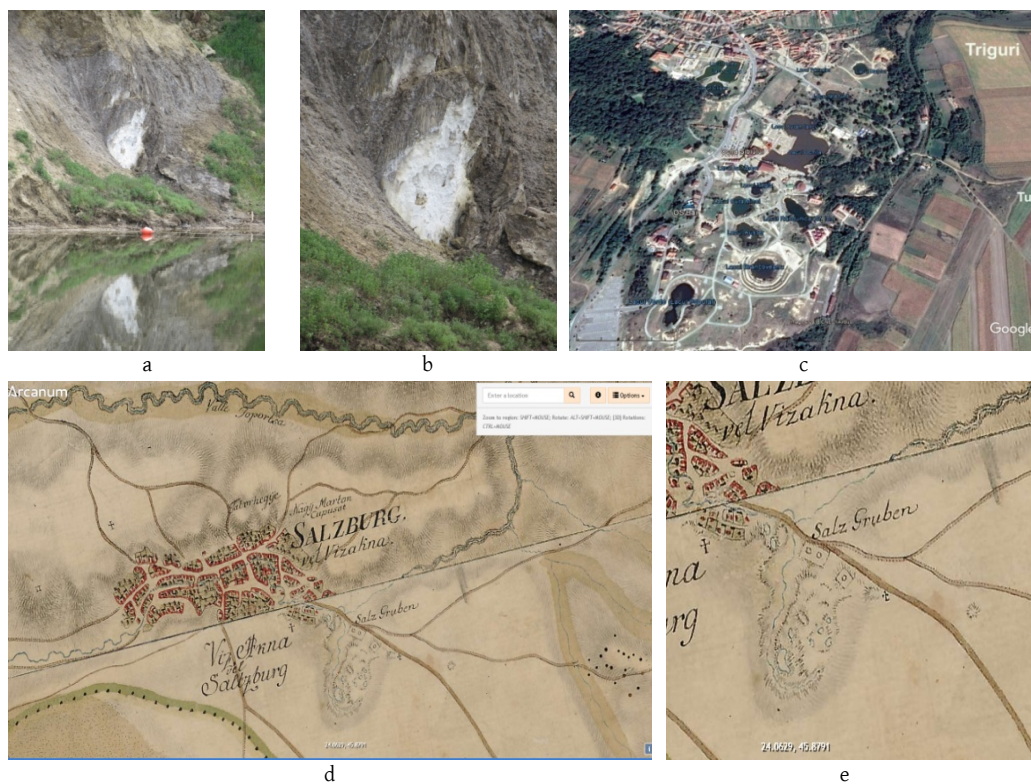


Figure 10. Ocna Sibiului: a-b — salt rocks on the shores of lakes;
c — map with the names of the lakes; d-e — the first map
(apud MAPIRE — Historical Maps Online — mapire.eu)

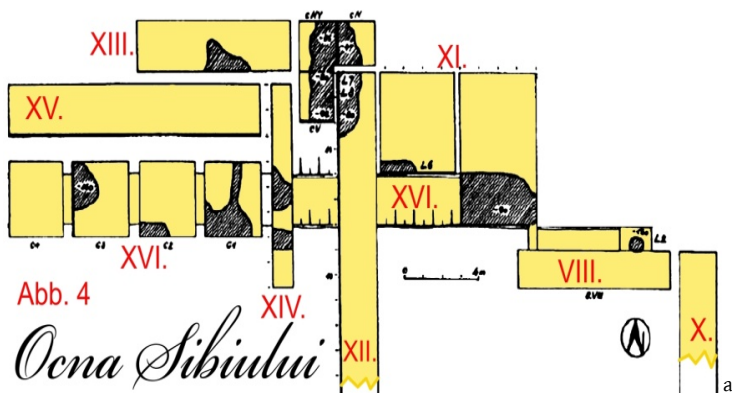


Figure 11. Ocna Sibiului: a – the plans of I. Paul's excavations at Triguri; b – the Ocna Sibiului area with the main researched prehistoric settlements: (1) Triguri (SC phases IB - III), (2) Fața Vacilor (Petrești culture) and (3) Gorgan; c – emblem of the town; d – archaeological artefacts, hammers for salt rocks (Achim collection)

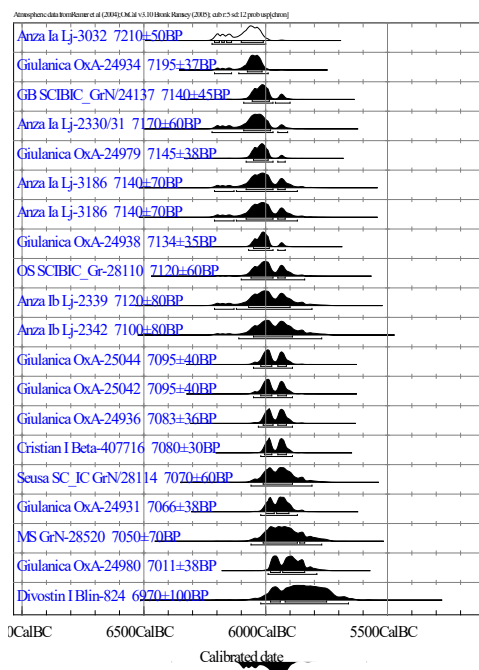


Figure 13	OSB1	OSL4	OSL8	GBB1	Anzabegovo Ia	GBB8	Anzabegovo Ia B2	Anzabegovo Ic
AP	2	7						
IA		4						
AP, IA		6	2					
KO			2					
CM		1		1				
ID			1		3			
KM				6				
JN				9				
FU				2				
CC				2				
BN				2				
JB				1				
JM				2	1			
VD					3			
QI					3			
QO					3			
XD					3			
XE					3			
DJ				1		2		
CD					2		1	
CF					2		1	
AL				1			1	
CP					1		1	
IG					1		1	
CL				1			2	
JK				1			2	
CE							1	1
BO								2
BP								2
GE								2
GP								2

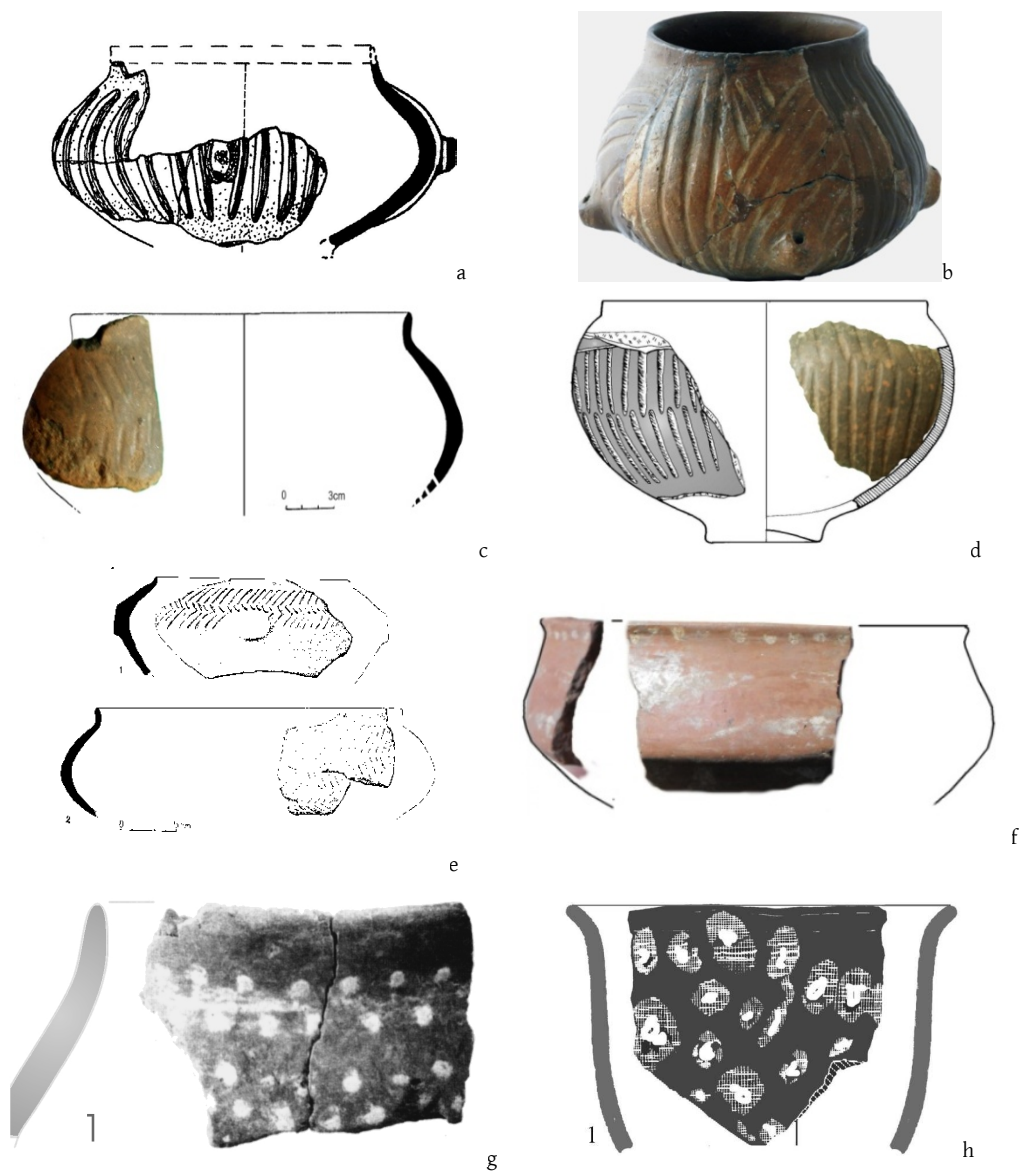


Figure 14: Grooved pottery, SC IC-IIA: a — Ocna Sibiului; b — Şeuşa;
c-d — Gura Baciului (SC IC: huts B2b and B2B); e — Gălâbnik; f — Krainici; g — Grivac; h — Aiman



Figure 15. SC pottery: a-b — Ocna Sibiului; c-i — Miercurea Sibiului
(photo S. Odenie, S.A. Luca and Gh. Lazarovici)

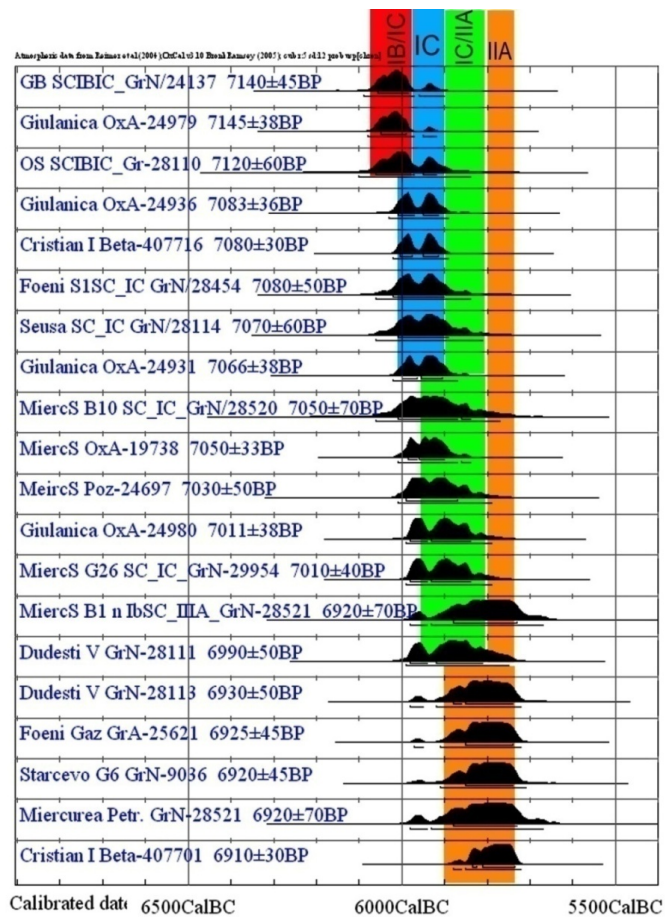


Figure 16. The framing of the Miercurea Sibiului settlements in phases IB/1C – IIA according to ¹⁴C data



Figure 17. Miercurea Sibiului – Baths: piles of salty sand used to melt the ice on the roads
(photo G. Lazarovici)

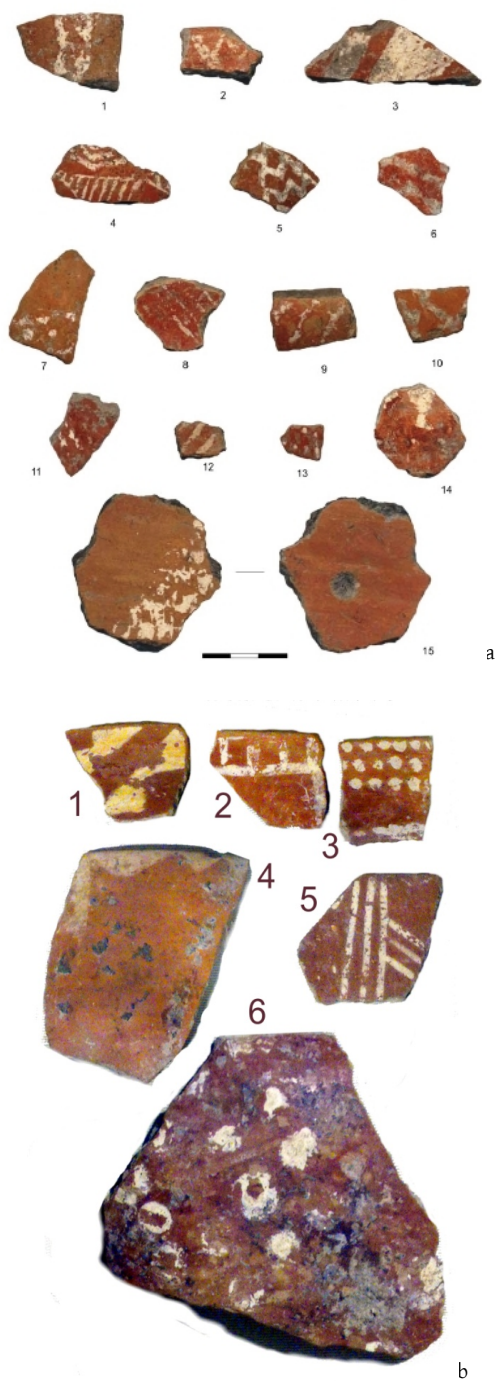


Figure 18. SC IC pottery: a — Măgura-Buduiasca (*apud* MIREA 2005);
b — Vaksevo (*apud* CHODADHZIEV 2001)

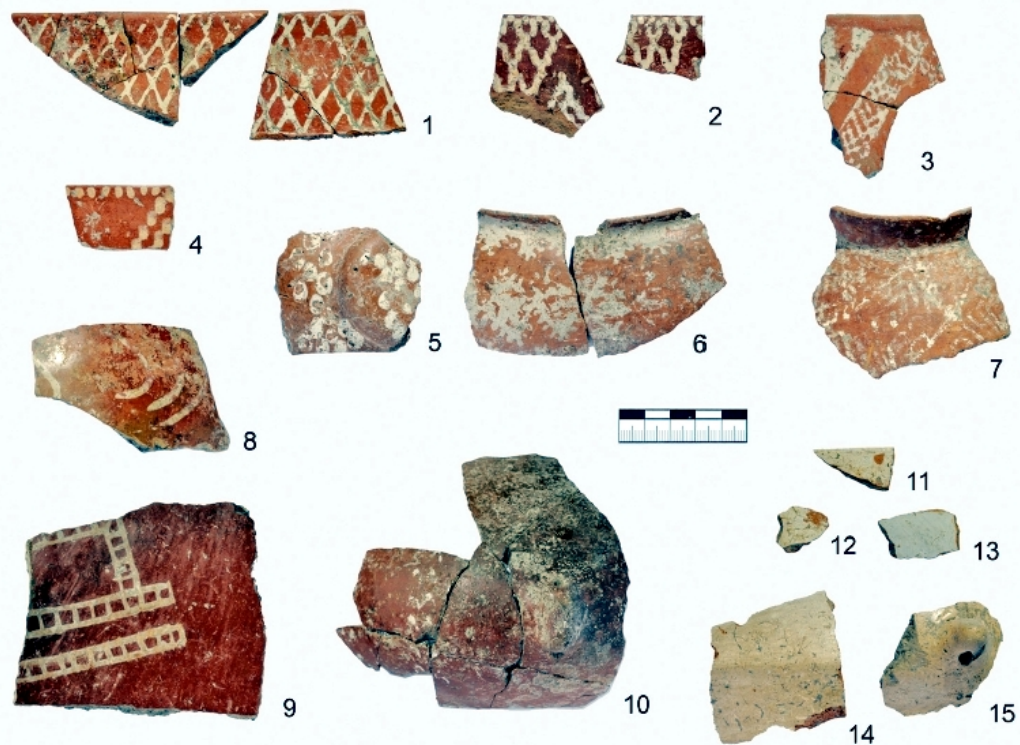


Figure 19. Džiuliunica (*apud* KRAUSS, ELENSKY 2011)

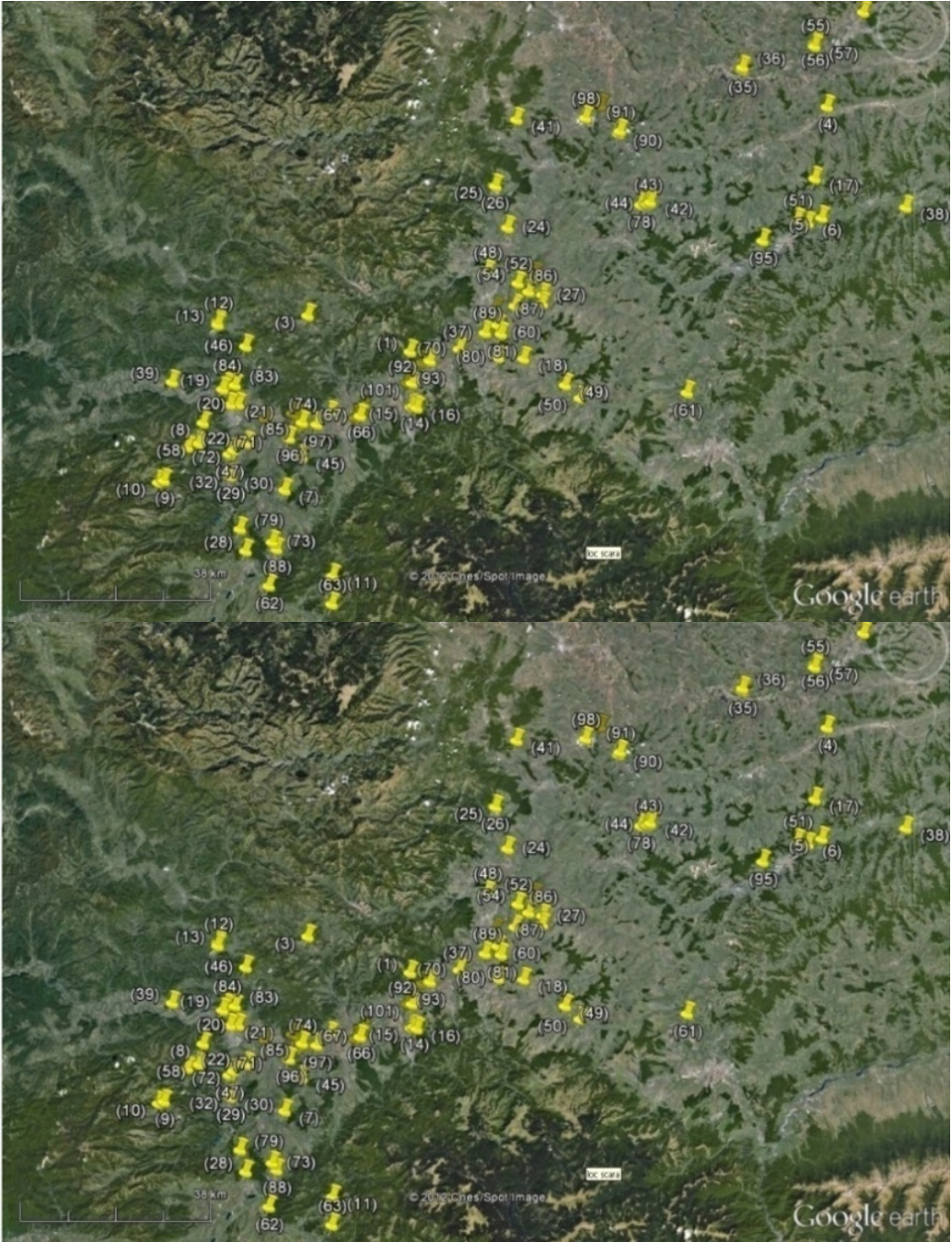


Figure 20. Neolithic settlements from the Middle Mureș basin

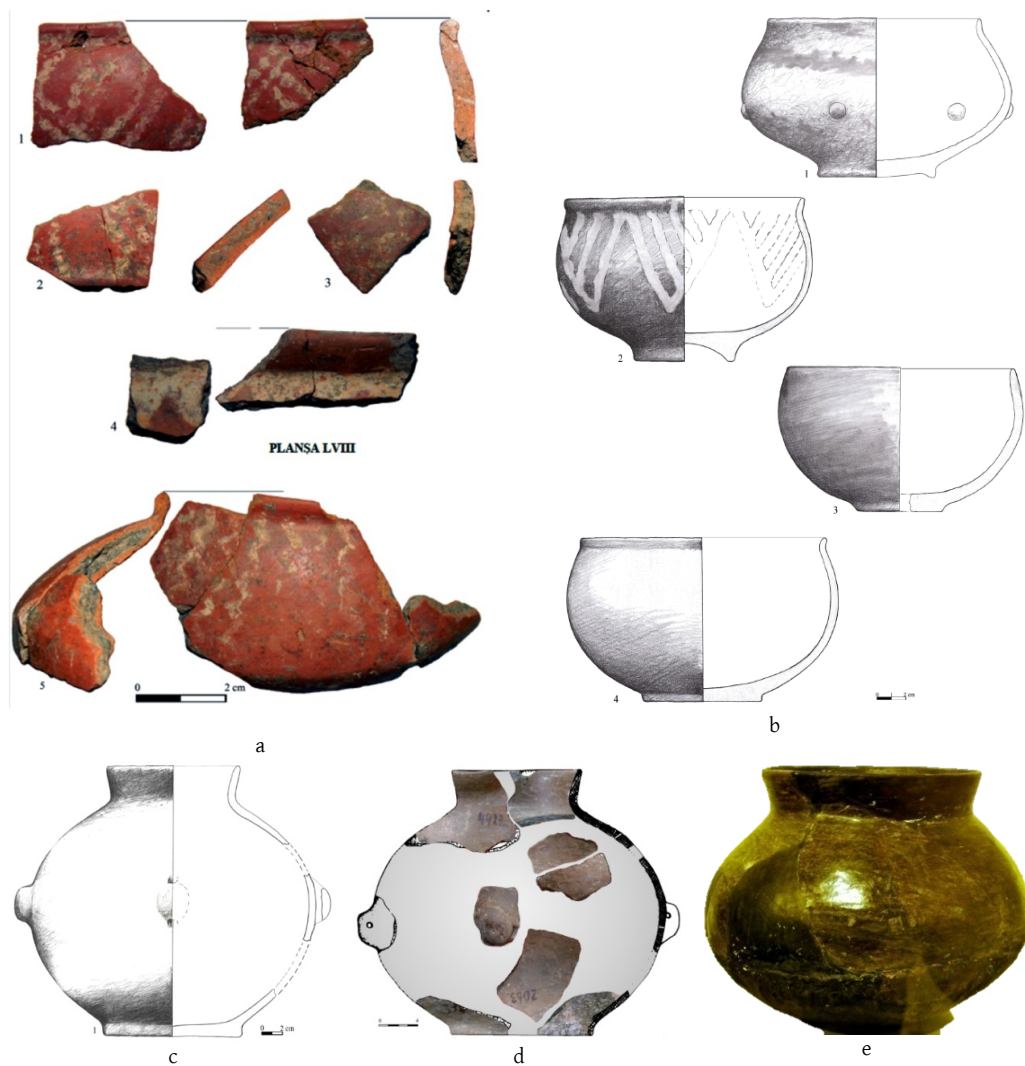


Figure 21. SC IC pots: a-c — Țoimuș (*apud* BĂRBAT); d — Crăciunești-Peștera *Balogu* (reconstruction Gh. Lazarovici); e — Saparevo Banja, Bulgaria



Figure 22. Gura Baciului SC IA (*apud* VLASSA 1972; LAZAROVICI G., MAXIM 1995)

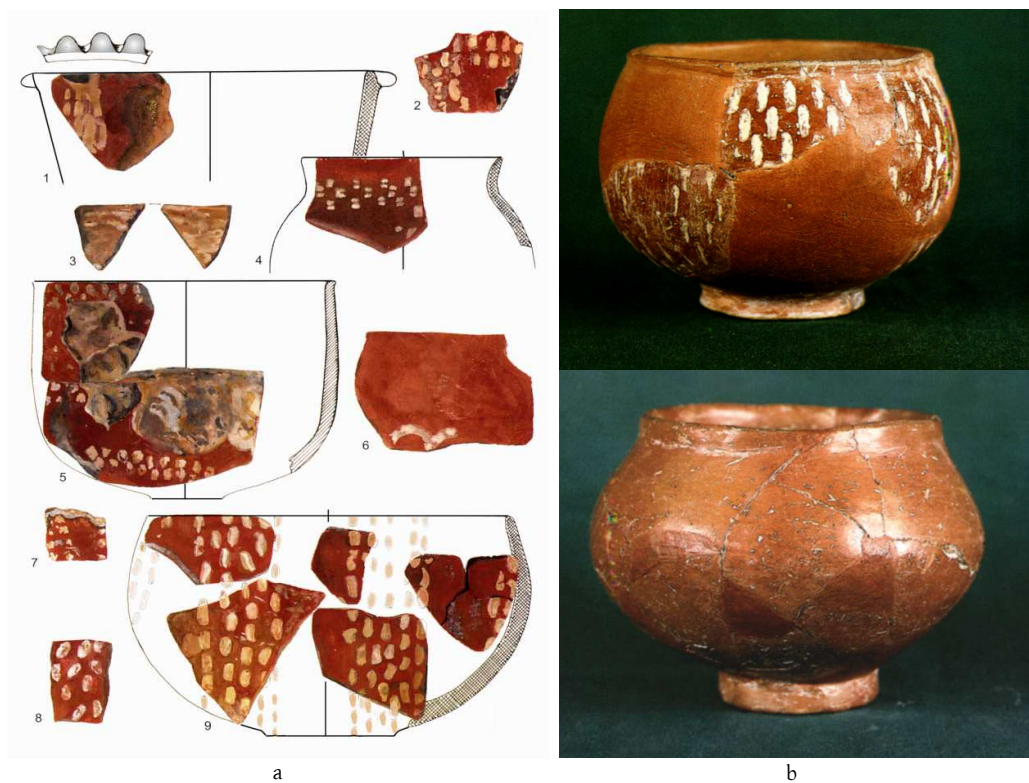


Figure 23. SC IA-IB pottery: a — Gura Baciului, B2 and surroundings;
b — analogies at Donja Branjevina

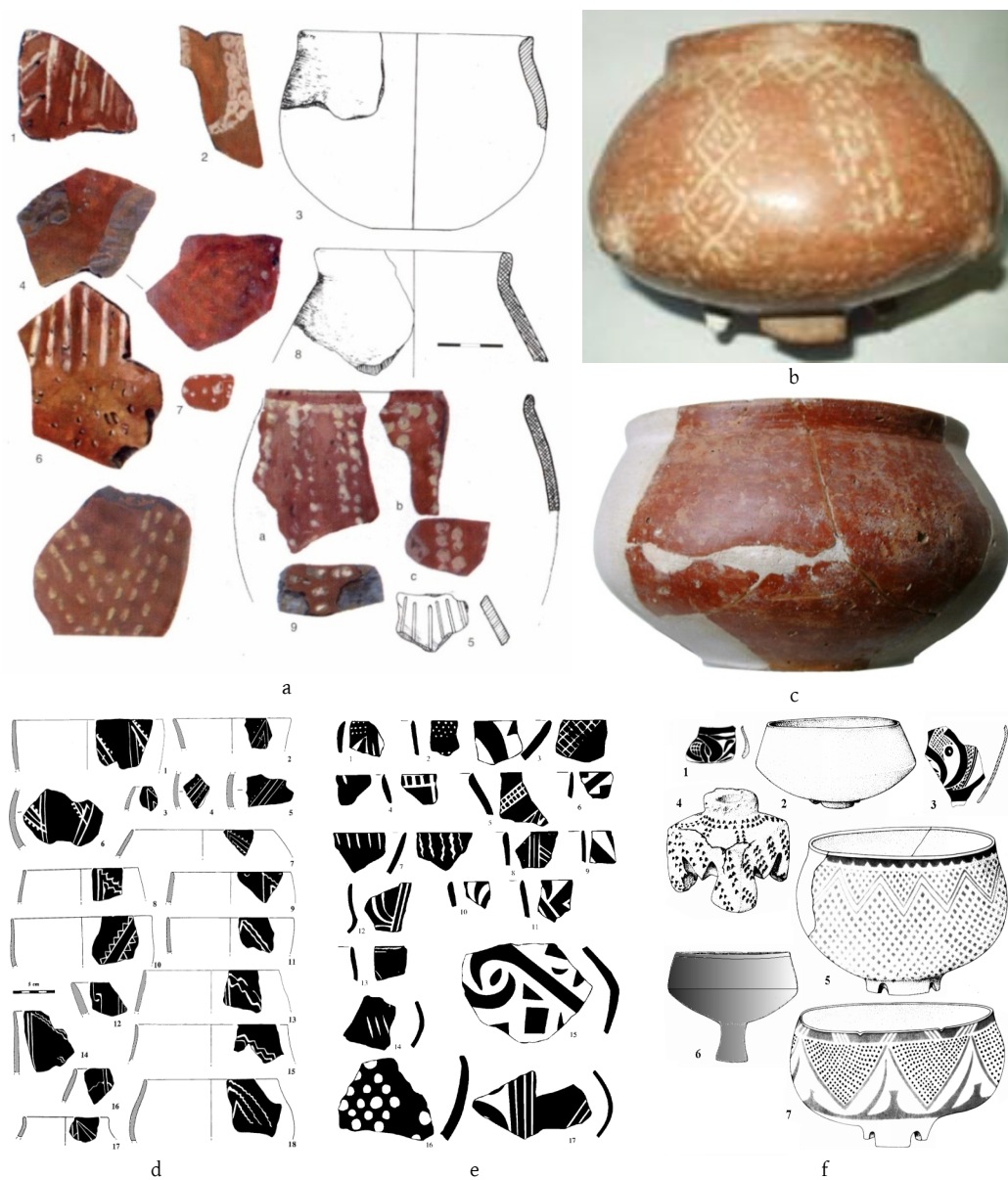


Figure 24. SC IC pottery: a & c — Gura Baciului; b — Cârcea;
d — Vaksevo; e — Nevestino; f — Gălăbni

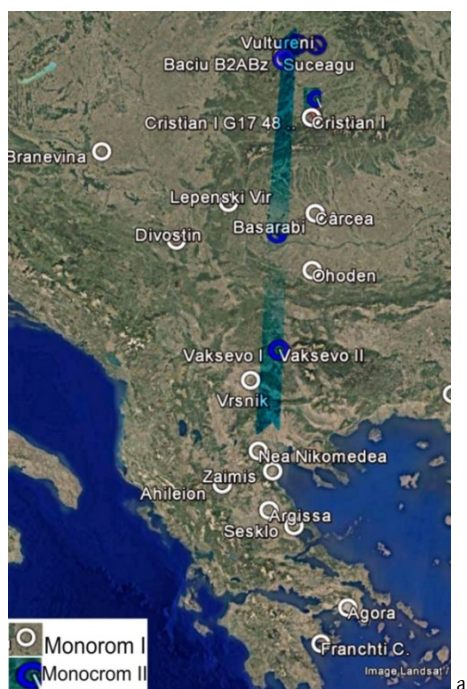


Figure 25. The display of Monochrome and SC IA settlements:
a — Neolithisation Monochrome I and Monochrome II; b — SC IA (decoration with dots)



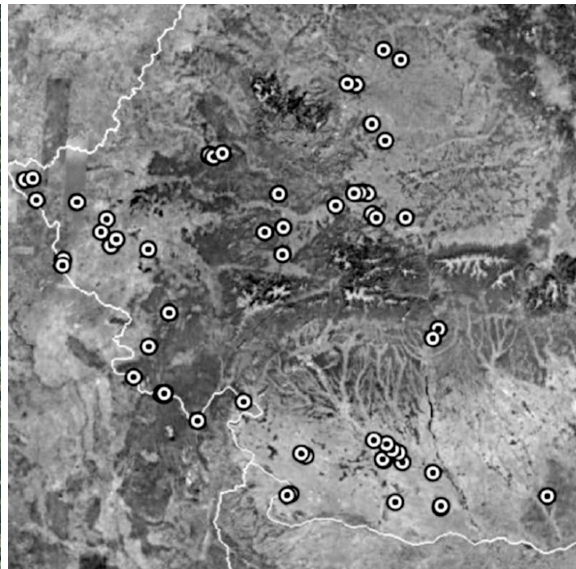
a



b



c



d

Figure 26. SC IB/IC: a — dots arranged in decoration and white lines (red circles);
b — SC IC/IIA (the technology changes, appearing grooves, slip not just engobe,
pinches and impressions with the fingernail, large curved white spaces);
c — migrations and salt sources (mines, exploitations – red colour);
d — SC II in the areas of the first migrations

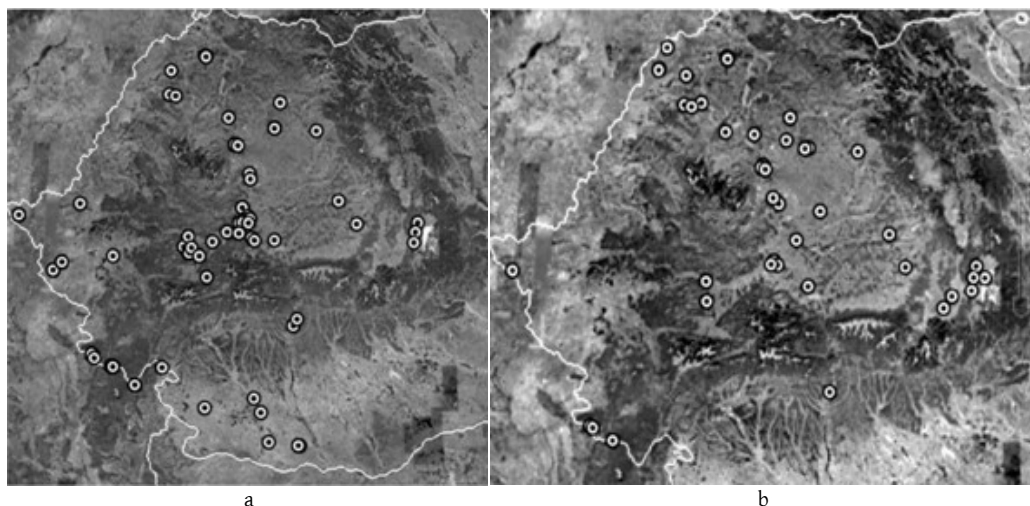


Figure 27. The spread of the Starčevo-Criș Culture in phases SC III-IV (*apud* LUCA, SUCIU 2011)

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