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LATE BRONZE AGE AND THE BIGINNINGS OF THE EARLY IRON AGE IN THE BLACK RIVER BASIN.

Habitat and Material Culture

DOCTORAL THESIS SUMMARY

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The aim of this thesis is to analyze a period of the Bronze Age, specifically the Late Bronze Age, within a well-defined micro-region located at the edge of the Eastern Carpathian Mountains. The time period studied spans approximately 1600 to 850 BC, covering the development of the Noua and Gáva cultures.

The material analyzed consists mainly of items from the collections of the Székely National Museum and the National Museum of the Eastern Carpathians, as well as objects (mainly metal) preserved in various institutions across the country (e.g., the National Museum of Transylvanian History or the Aiud History Museum). Another objective of the research is to introduce into the scientific circuit previously unpublished materials from the Late Bronze Age discovered in the Târgu Secuiesc Basin. Unfortunately, research on the Late Bronze Age has, in many respects, remained at the level of the 1960s–1980s. The works from that period selected only the most representative pieces, allowing knowledge of only a narrow segment of the material, which led to superficial or partial conclusions. Thus, in the absence of new research, recent studies are often based on publications written in the 1960s, resulting in a kind of terra incognita regarding the Bronze Age in southeastern Transylvania. In the present work we also aimed to systematize, typologize, and place the material not only in a cultural context but also in a geographical one.

From the perspective of the terminology used in the present work, the term “Hallstatt” has been deliberately omitted, as it is considered outdated and potentially misleading. However, for relative periodization, we have used the chronological system established by Paul Reinecke, as it continues to be used by the majority of researchers to this day. This system includes the term “Hallstatt” (Ha), but in our area of study, it does not reflect the concept of the Hallstatt period as it is understood in Western Europe.

In the Romanian archaeological literature, the division of the Late Bronze Age is interpreted in several ways. Some researchers consider that the Bronze Age ends with the decline of the Noua culture, around 1200–1150 cal BC. The subsequent period is commonly referred to in scholarly terminology as “Early Hallstatt,” “Hallstatt,” or “Hallstattian cultures”—where the original term bear little relevance to the cultural realities of the eastern Carpathian Basin. The other mainstream hypothesis is based on the cultural periodization of the Pannonian Plain and Central Europe, which considers that the Bronze Age ends in the Ha B period, with the decline of the classical Gáva culture and the emergence of eastern influences. In this view, the end of the

Late Bronze Age is placed around 800 cal BC, following a four-phase periodization. This periodization has gained considerable traction and has been embraced by the new generation of archaeologists in Transylvania. In the present work, we have also chosen to adopt this periodization, as it facilitates a clearer and more transparent classification and comparison of the material from the research area with that from western Transylvania and even from east of the Eastern Carpathians. To define the Late Bronze Age manifestations, we have used the specialist terms *culture* or *cultural group*.

The study area is the Târgu Secuiesc Depression, which largely coincides with the drainage basin of the Black River. The upper and middle basins of the Cașin River, a tributary of the Black River, have not been included in this work. The Târgu Secuiesc Depression (also referred to as the Black River Depression) is part of the Brașov Depression and represents its easternmost component. It is a well-defined microregion, surrounded by mountains, and connects to the rest of the Brașov Depression to the southwest via the Reci corridor. The area under study covers a surface of 149,884 hectares (1,498.84 km²).

In the second part of the chapter addressing the geographical framework, there is a subsection that attempts to reconstruct the natural environment of the research area. Based on the available data—primarily from neighboring regions—it can be observed that in the first part of the Late Bronze Age, the climate was relatively warm. Starting in the 12th century BC, a cooling trend and an increase in precipitation can be noted, a shift attributed to geological events such as volcanic eruptions. This climatic change is also reflected in the cultural and archaeological record, as the period coincides with the emergence of the Gáva culture and, on a broader scale, with the collapse of Bronze Age cultures in the Aegean region.

For the research area, the data suggest the existence of much more extensive marshy zones than those present today. Although there is no concrete evidence of deforestation, it is highly likely that forests were absent around settlements, just as they were around fortified sites, since wood was a fundamental resource for building fortifications and interior structures.

Our contribution to the research history of the Noua and Gáva cultures consists of a detailed presentation of the findings and information related to discoveries in the Târgu Secuiesc Depression. We have attempted to gather the earliest bibliographic references concerning such discoveries. Regarding the studied area, two major periods in Late Bronze Age research can be distinguished: the first spans from the second half of the 19th century to the end of the Second

World War, and the second from 1945 to the present. It should be noted that this division is subjective and is based primarily on the manner in which the collection of different museums accumulated—namely, through donations, accidental finds, systematic or rescue excavations, and field surveys.

The beginning of the Late Bronze Age in the Eastern Carpathian area is marked by the end of the evolution of Middle Bronze Age cultures (such as Wietenberg, Monteoru, Costișa, etc.), a transition attributed to the arrival of a population from the forest-steppe zone of the North Pontic region, known as the Noua culture. These events begin in the 16th century cal BC and intensify during the following century. In our research area, the Wietenberg culture populations were either displaced or assimilated. This cultural impact led to the disappearance of the distinctive Transylvanian pottery, which was replaced by a more restrained and modest ceramic style, with simpler forms and poorer decorative motifs—yet relatively homogeneous across a vast territory stretching from the Apuseni Mountains to the Crimean Peninsula. To place this event within a calendar-based framework, we have used radiocarbon dating. The data obtained for the research area allow for an absolute periodization that is independent of other regions.

The beginning of the Late Bronze Age (**LBA I**) in the studied area is marked by the arrival of the Noua culture's population. These events begin in the 16th century cal BC. During this period, the pottery shows influences from Middle Bronze Age ceramics, particularly elements of the Late Monteoru tradition. With the appearance of Noua communities in the Târgu Secuiesc Depression, settlement strategies shift—a phenomenon most evident in the sudden disappearance of fortified settlements. This change is most likely linked to the lifestyle of these communities, centered around animal husbandry, crop cultivation, and seasonal herding. The location of most settlements along the banks of the Black River and its tributaries also suggests the existence of communication routes following these natural corridors.

The settlements are situated in areas with soils favorable for agriculture, while the proximity of floodplains along the streams and the Black River made grazing possible as well. The known dwellings have a structure similar to those documented throughout the Noua cultural area: wooden frameworks with wattle-and-daub walls. Another characteristic feature of these settlements is the presence of so-called "ashmounds", most likely used in daily domestic activities and possibly serving as communal hubs.

In the classical phase of the Noua culture (**LBA II** – Noua II), a homogenization of vessel forms and ornamentation can be observed across the entire area of distribution. The earlier, more complex elements inherited from the Middle Bronze Age disappear, while certain decorative techniques—such as grooving—are adapted to the new, simpler ceramic styles. During this period, most of the settlements are established, with many of them yielding between one and ten "ashmounds". This phase can be approximately dated between the mid-15th century and the early 13th century cal BC.

The final phase in the development of the Noua culture (Noua III) corresponds to the third stage of the Late Bronze Age (**LBA III**). In terms of relative chronology, it can be placed in the Br D–Ha A1 period, which roughly spans from the beginning of the 13th century to the first part of the 12th century cal BC. Sites that can be at least partially attributed to this phase include Cernat–*Róbert-tag*, Poian–*Kőhát*, Sânzieni–*Táncospad* and –*Urakszerelábja*, as well as Turia–*Csoboth-telek*.

As a result of western influences in the southeastern Transylvanian distribution area, new elements emerge alongside the well-known ceramic forms and motifs from the previous phase. As far as current research indicates, these developments are the result of contact with the Band-Cugir group, which was present in western Transylvania. A particularly interesting phenomenon is the appearance of metal objects currently thought to emerge during the Br D phase—namely, Transylvanian-type celts and hooked sickles.

The continued evolution of the Noua culture into the middle of the Ha A period has been affirmed repeatedly. So far, no data contradict the possibility of this ceramic style surviving until the emergence of the Gáva culture in the second half of Ha A. Some key sites in the Târgu Secuiesc Depression, such as Cernat–Hegyes and Reci–Telek, appear to contain elements suggesting the presence of the Gáva culture as early as phase I in this part of Transylvania. However, the material remains are currently too scarce to draw definitive conclusions. Some features seem to point to the existence of an early phase of the Gáva culture, corresponding to the Gáva Ib material, as classified by Ciugudean

The fourth and final phase of the Late Bronze Age (**LBA IV**) is marked by the development of classical Gáva ceramics. This period is characterized by the widespread presence of grooved pottery and large biconical vessels, distributed across a broad area stretching from the Tisza River to the upper course of the Dniester. Once again, we observe a trend toward

uniformity and standardization in ceramic forms and decorative motifs. This phenomenon likely begins no earlier than the second half of the 12th century cal BC. However, due to the lack of well-documented archaeological contexts, this assertion must be treated with caution. Alongside the transformation in ceramic style, significant changes can also be observed in settlement structures, as well as in the spread of a wide variety of bronze tools and weapons.

The end of the Bronze Age in southeastern Transylvania is, for now, difficult to clearly define. There is no solid evidence for the development of the Basarabi culture, which is characteristic of central and western Transylvania. In light of the discoveries at Cernat—particularly the metal finds—as well as the materials from Turia–Grădina conacului Apor, it can be assumed that the Gáva culture experienced a prolonged development, possibly extending into the Ha B2–B3 period. Such a chronological placement—or perhaps even a later one—might correspond to the material from the site at Leț–Várhegy, which features stamped decoration in the form of a reclining S. This site may tentatively be attributed to the Gáva III phase, as defined by Horia Ciugudean for southern Transylvania. Based on the archaeological material alone, it is difficult to determine whether, after the end of the classical phase of the culture (end of Ha B1), the same ceramic forms and cultural traits continued or whether they represent a distinct new phase in the culture's evolution.

With the arrival of Noua communities in the Târgu Secuiesc Basin, settlement strategies—particularly regarding the placement of habitations—undergo a significant shift. This change is most evident in the case of fortified settlements, which suddenly disappear. Whereas during the Wietenberg period eight such sites located on promontories are known within the research area, none are attributed to the Noua culture. This trend is not unique to the studied region but is characteristic of the entire distribution area of the culture. At present, it is difficult to determine the exact reason for the abandonment or disuse of mountainous zones. Most likely, it is related to the lifestyle of these communities, which revolved around animal husbandry, crop cultivation, and transhumant pastoralism. The placement of most settlements along the Black River and its first-order tributaries suggests that these waterways may have also functioned as communication routes between different regions. The settlements are located in areas with soils favorable for agriculture, while the proximity of floodplains along the streams and the Black River also made grazing possible.

As for the dwelling structures in the studied settlements, they are few in number and have been insufficiently investigated. Based on the available data, they were built with a wooden framework, wattle infill, and daubed with clay. Their surface area ranged from approximately 9 to 16 square meters. Inside, circular or oval clay-plastered hearths were installed.

Another defining feature of these new settlements is the presence of *"*ashmounds*"*, which appear as lighter-colored patches of varying sizes, ranging from approximately 315 to 1,442 square meters. Their number varies from one to ten per site, though typically 2–3 such complexes are present.

It has often been suggested that the known settlements of the Noua culture were seasonal in nature. The periodic occupation of these sites has been linked to the formation of "ashmounds", as noted by Eugen Sava. A shift in settlement strategy appears to be documented during the Noua III phase, when some sites begin to appear in piedmont areas—such as Cernat–*Róbert-tag* and Poian–*Kőhát*—which are less suitable for agriculture. The discovery of objects related to bronze metallurgy at these two sites may also suggest that they served a different function from the settlements located in the lowland plains of the depression, potentially indicating specialized or complementary roles within the broader settlement network.

During the Gáva culture period, a transformation in settlement strategy becomes evident. Fortified settlements emerge, equipped with imposing defensive systems that likely served as residences for local elites. The dwelling structures are consistent across the culture's distribution area. In the research zone, surface-level houses have been documented—particularly at the Cernat–Hegyes site—while semi-subterranean pit-houses have been identified at Reci–Telek. Given the small scale of excavations, it is difficult to determine whether this represents a general trend. However, it is possible that this reflects a deliberate settlement strategy: in open areas exposed to strong winter winds—such as at Reci—it may have been more practical to build sunken dwellings. By contrast, the Cernat fortification, located in a sheltered area, would have been less exposed to wind, and the rocky terrain may have made digging pit-houses more difficult.

In terms of numbers, the known open settlements from this period are roughly equal to those from the previous phase, with the exception that their surface areas are significantly larger, often exceeding 30 hectares. "Ashmounds" appear in a small number of these settlements. So far, such complexes have not been identified in other Gáva sites, and their presence might indicate

the survival of earlier subsistence practices—a possible continuation of the phenomenon of creating these complexes into the Gáva period.

The discussion of the cultural context of the material presents no major difficulties, as the artifacts are clearly characteristic of the Noua and Gáva cultures. Problems arise, however, when attempting to establish an internal periodization of these cultures based on ceramics, due to the fact that most of the material was not separated by complexes and largely lacks well-documented archaeological contexts. As a result, the available data are considerably limited, and some conclusions can only be proposed hypothetically.

Despite these limitations, we have nonetheless attempted to establish a typology and periodization of the material, which can later be tested and refined through future research. In developing the typology of the various artifact categories, we primarily followed a functional approach to the material remains. We aimed to avoid excessive typologization by refraining from defining numerous types and variants of artifacts. The chosen method ultimately proved to be the most effective and more efficient than the mathematical classification models employed by other researchers. Our objective was to trace the evolution of characteristic forms and decorative motifs in the material culture of the region.

For the systematization of the ceramic material, it was deemed necessary to construct a typology of vessel forms and decorative motifs. This typology not only provides a general overview of the material culture but also enables comparisons with other regions.

Even though the idea of a cultural mixture between the Noua and Wietenberg cultures has been proposed for the Transylvanian variant of the Noua culture, this interaction is difficult to trace within the research area. In southeastern Transylvania, the first phase of the Noua culture reveals pottery with strong influences borrowed from the Late Monteoru tradition (types NII.D2, NII.D4, NVI.E1-2, NC.2b-c-d, NF.1c, NF.2a, NG.1a), frequently documented east of the Eastern Carpathians. This aspect of early Noua ceramics is best represented by the material from Peteni–*Alsóhatár*. One unresolved issue remains whether these motifs were adopted from the Monteoru cultural area beyond the Carpathian Arc or whether they were locally inherited within the Black River basin. The presence of Late Monteoru communities within the Carpathian arc is suggested by several finds, including recent burials discovered at the site of Sfântu Gheorghe–*Hosszú*. It is possible that Late Monteoru and Late Wietenberg communities (phase III or C) coexisted in the same region—namely, southeastern Transylvania. It is also worth mentioning the Wietenberg-

type pottery fragments found within Noua settlements in the research area, likely belonging to communities that still used Wietenberg pottery. Contacts with the upper Tisza basin are reflected in a few pottery fragments originating from the Suciu de Sus or Cehăluț cultural environments.

In a later period, beginning in the second half of the 15th century BC, Noua material culture becomes more homogeneous, with Late Monteoru elements appearing only sporadically. It is likely during this time that settlements featuring "ashmounds" become more numerous in the Negru River basin. The pottery from the Noua II phase contains all the characteristic elements known from the culture's broad area of distribution. Although earlier studies have pointed out certain local features of the ceramics, the main vessel types and decorative motifs from Transylvania are very similar to those identified in Moldova. The most typical vessel forms are sack-shaped pots, which appear in various versions. Most of these vessels are decorated with one or two horizontal bands, placed on the neck. Fine ware is represented by small to medium-sized cups with one or two arched handles—*kantharos*-type cups. These handles often have a triangular cross-section, sometimes with raised elements at the top. The decorative motifs on this type of vessel are made using narrow horizontal or oblique grooves, and rarely include impressions.

Western influences during the Noua culture are documented at the end of its development. For this final phase, available data remain limited, and the ceramic material attributed to it often comes from uncertain contexts. The studied assemblage suggests that older ceramic forms—such as various sack-shaped pots and *kantharos*-type cups—are still present, along with traditional decorative motifs like grooved bands or the *Besenstrich* technique. New ceramic forms appearing during this phase include storage vessels with flared rims (types NI.A1–2), coated with vertically applied slip (barbotine) (NH.1a), biconical cups with a single raised handle (NIV.B1–4), and cups with two raised ribbon handles (NV.D3), occasionally fitted with disc-shaped buttons. Some vessels also have surfaces decorated with striations made using a comb (NE.1a). These newly introduced forms and motifs suggest contact and influence from central Transylvania, particularly from the Cugir-Band cultural environment. Sites that can be attributed—at least partially—to this final phase include Cernat–*Róbert-tag*, Poian–*Kőhát*, Sânzieni–*Táncospad* and –*Urakszerelábja*, as well as Turia–*Csoboth-telek*. At present, no

evidence contradicts the hypothesis that this final phase of the Noua culture persisted until the emergence of the Gáva culture in the second half of the Ha A period.

Some key sites in the Târgu Secuiesc Depression, such as those at Cernat–*Hegyes* and Reci–*Telek*, seem to have elements suggesting the emergence of the Gáva culture as early as Phase I in this part of Transylvania. However, the material is too limited to draw broad conclusions.

In the classical period of the Gáva culture, the defining elements of the culture are also present in the Black River basin. This period is characterized by the spread of grooved pottery and large biconical vessel forms, over an area stretching between the Tisza River and the upper course of the Dniester River. Once again, a standardization or homogenization of pottery forms and decorative motifs can be observed. The small amount of archaeological material discovered in well-defined contexts does not allow for a detailed chronological analysis. At the current stage of Gáva pottery research in southeastern Transylvania, it is difficult to identify a clear evolution of the culture. Most vessel types and decorative motifs are present over extended periods. Even if some types and motifs appear in a specific period, in other regions of Transylvania they may occur at different chronological intervals. We consider that the majority of the settlements can be assigned to the classical period of the culture.

The pottery of the final phase of the culture is difficult to identify. It can be outlined primarily based on typological criteria or the presence of elements characteristic of a later period. In addition to the elements known from the previous phase, the material from Leț–*Várhegy* includes amphora-type vessels with a swollen body (GII.G1), which will become characteristic and widespread at the end of the Bronze Age (Ha B2-3) and the beginning of the Early Iron Age (Ha C1). These types of vessels are decorated with wide vertical grooves, a few centimeters in width (GC.3c), which had not been encountered before with such dimensions. The mentioned material is also associated with a bowl decorated with stamped S-shapes (GC.6e, GH.1b), which begins to spread during this period and is more commonly used in the Early Iron Age. The vessel forms mentioned also appear at Turia–*Grădina conacului Apor*. Other materials with closer analogies to late-phase or Early Iron Age pottery have been discovered at Cernat–*Hegyes* and –*Templomdomb*. Hypothetically, these sites can be attributed at least partially to the final phase of the Gáva culture, but in the absence of stratigraphic and contextual data, these interpretations must be treated with caution.

Regarding the studied area, information about the funerary rites and rituals of Late Bronze Age communities is fragmentary. Compared to the Middle Bronze Age, there are no confirmed graves in the Târgu Secuiesc Depression that can be definitively attributed to Late Bronze Age cultures. As for the Noua culture, even though several possible graves are mentioned in the academic literature, there is no clear evidence from well-documented excavations. These consist of a few complete vessels that ended up in the collection of the Székely National Museum, which some researchers consider to be offering vessels from possible Noua culture graves.

The funerary rite and ritual of the Gáva culture are poorly understood, mainly due to the very limited number of such discoveries compared to the number of known settlements. This situation is true across the entire area of the culture. Most known graves are urn cremation burials; more rarely—especially in Bukovina, Transcarpathia, and southeastern Slovakia—tumuli were built over some of the graves. In our research area, there is no site that can be clearly interpreted as a cemetery or an actual grave. At the Reci–Telek site, two cremation "graves" are mentioned, where fragments of burned human bones were found. However, we do not rule out the possibility that these complexes had other functions, possibly ritual, and not necessarily related to actual burials.

At the end of the text, I have included the appendices, which could not be incorporated into the main body. Thus, the final section contains a catalog of Late Bronze Age discoveries known from the Târgu Secuiesc Depression. Three additional appendices consist of tables providing data on each settlement, including their size and location, and whether they have yielded finds from periods preceding the Late Bronze Age.

The present work can be considered a stage in a broader research project—an assessment of earlier researches, which were, however, based on methods of data collection different from those used today. Although I believe that the gathered data may help guide the direction of future research.