

**MINISTERUL EDUCAȚIEI
UNIVERSITATEA „1 DECEMBRIE 1918” DIN ALBA IULIA
ȘCOALA DOCTORALĂ DE ISTORIE**

PhD THESIS SUMMARY

**Scientific adviser:
Prof. univ. dr. MIHAI GLIGOR**

**PhD student:
ANA FETCU**

**ALBA IULIA
2024**

**MINISTERUL EDUCAȚIEI
UNIVERSITATEA „1 DECEMBRIE 1918” DIN ALBA IULIA
ȘCOALA DOCTORALĂ DE ISTORIE**

**THE ENEOLITHIC FUNERARY COMPLEX FROM ALBA
IULIA-LUMEA NOUĂ. OSTEOARCHAEOLOGICAL
ANALYSIS**

TABLE OF CONTENTS

CHAPTER I.....	Error! Bookmark not defined.
INTRODUCTION	
CHAPTER II	Error! Bookmark not defined.
ARGUMENT	Error! Bookmark not defined.
CHAPTER III.....	Error! Bookmark not defined.
HISTORY OF RESEARCH IN THE NEOLITHIC AND ENEOLITHIC SITE FROM ALBA IULIA - LUMEA NOUĂ.....	Error! Bookmark not defined.
CHAPTER IV.....	Error! Bookmark not defined.
DESCRIPTION OF ARCHAEOLOGICAL CONTEXTS..	Error! Bookmark not defined.
MASS GRAVES	Error! Bookmark not defined.
ALN Sp. II/2003 (Mariş property)	Error! Bookmark not defined.
ALN Sp. III/2005 (Colda property).....	Error! Bookmark not defined.
ALN Sp. I/2011 (Teoc property)	Error! Bookmark not defined.
ALN Sp. II/2015 (Opruța property)	Error! Bookmark not defined.
ALN Sp. II/2019 (Drăgan property).....	Error! Bookmark not defined.
Individual inhumation in ditch structures	Error! Bookmark not defined.
ALN Sp. VI/2005 (Sobaru property).....	Error! Bookmark not defined.
Mass graves in ditch-like structures.....	Error! Bookmark not defined.
Systematic research from 2013 - 2014.....	Error! Bookmark not defined.
Secondary depositions	Error! Bookmark not defined.
Sp. I/2014 (Bogdan property).....	Error! Bookmark not defined.
Sp. III/2018 (Pusta property)	Error! Bookmark not defined.
Individual inhumations in rectangular pits	Error! Bookmark not defined.
Sp. II/2018 (Țâr property)	Error! Bookmark not defined.
Sp. V/2018 (Seserman property).....	Error! Bookmark not defined.
CHAPTER V	Error! Bookmark not defined.
The chronology of funerary discoveries.....	Error! Bookmark not defined.
Mass graves.....	Error! Bookmark not defined.
ALN Sp. II/2003 (Property Mariş).....	Error! Bookmark not defined.
ALN Sp. III/2005 (Property Colda)	Error! Bookmark not defined.
ALN Sp. I/2011 (Property Teoc).....	Error! Bookmark not defined.
ALN Sp. II/2015 (Property Opruța)	Error! Bookmark not defined.
Individual inhumation in ditch structures	Error! Bookmark not defined.
ALN Sp. VI/2005 (Property Sobaru)	Error! Bookmark not defined.

Mass grave in ditch-like structures	Error! Bookmark not defined.
Systematic research from 2013-2014.....	Error! Bookmark not defined.
Secondary deposition.....	Error! Bookmark not defined.
Sp. I/2014 (Property Bogdan)	Error! Bookmark not defined.
Sp. III/2018 (Property Pusta)	Error! Bookmark not defined.
Individual inhumations in rectangular pits	Error! Bookmark not defined.
Sp. II/2018 (Property Țâr).....	Error! Bookmark not defined.
Sp. V/2018 (Property Seserman).....	Error! Bookmark not defined.
CHAPTER VI.....	Error! Bookmark not defined.
ARCHAEOETHANATOLOGICAL OBSERVATIONS. TAPHONOMIC ASPECTS ..	Error! Bookmark not defined.
Bookmark not defined.	
Archaeoethanatology and funerary discoveries from Alba Iulia-Lumea Nouă.....	Error! Bookmark not defined.
Bookmark not defined.	
Sp. I/2013 - 2014 - Mass grave in ditch-like structure.	Error! Bookmark not defined.
Sp. II/2015 - Pit mass grave	Error! Bookmark not defined.
ALN Sp. II/2019 (Property Drăgan)	Error! Bookmark not defined.
Mass graves.....	Error! Bookmark not defined.
Sp. II/2003 - Pit mass grave	Error! Bookmark not defined.
Sp. III/2005 - Pit mass grave.....	Error! Bookmark not defined.
Sp. III/2011 - Pit mass grave	Error! Bookmark not defined.
CHAPTER VII	Error! Bookmark not defined.
OSTEOLOGICAL ANALYSIS OF HUMAN REMAINS .	Error! Bookmark not defined.
VII.1 Research methodology	Error! Bookmark not defined.
The Biological profile	Error! Bookmark not defined.
Establishing the minimum number of individuals	Error! Bookmark not defined.
MASS GRAVES	Error! Bookmark not defined.
ALN Sp. II/2003 (Property Mariș).....	Error! Bookmark not defined.
ALN Sp. III/2005 (Property Colda)	Error! Bookmark not defined.
ALN Sp. I/2011 (Property Teoc).....	Error! Bookmark not defined.
ALN Sp. II/2015 (Property Opruța)	Error! Bookmark not defined.
Sp. II/2019 (property Drăgan).....	Error! Bookmark not defined.
INDIVIDUAL INHUMATION IN DITCH STRUCTURES	Error! Bookmark not defined.
defined.	
ALN Sp. VI/2005 (Property Sobaru)	Error! Bookmark not defined.
Systematic research Sp. I/2013 - 2014.....	Error! Bookmark not defined.
SECONDARY DEPOSITIONS.....	Error! Bookmark not defined.

Sp. I/2014 (Property Bogdan)	Error! Bookmark not defined.
Sp. III/2018 (Property Pusta)	Error! Bookmark not defined.
INDIVIDUAL INHUMATION IN RECTANGULAR PIT.....	Error! Bookmark not defined.
Sp. II/2018 (Property Țâr).....	Error! Bookmark not defined.
Sp. V/2018 (Property Seserman).....	Error! Bookmark not defined.
CHAPTER VIII	Error! Bookmark not defined.
THE NEOLITHIC AND ENEOLITHIC EUROPEAN MASS BURIALS.ANALOGIES	Error! Bookmark not defined.
VIII.1 El Trocs - (Spaink)	Error! Bookmark not defined.
VIII.2 Herxheim - (Germany).....	Error! Bookmark not defined.
VIII.3 Asparn - Schletz - (Austria)	Error! Bookmark not defined.
VIII.4 Schöneck - Kilianstädten (Germany).....	Error! Bookmark not defined.
VIII.5 Halberstadt (Germany).....	Error! Bookmark not defined.
VIII.6 Wiederstedt (Germany).....	Error! Bookmark not defined.
VIII.7 Vaihingen (Germany).....	Error! Bookmark not defined.
VIII.8 Vráble - Slovakia.....	Error! Bookmark not defined.
VIII.9 Talheim - Germany	Error! Bookmark not defined.
VIII.10 Esztergályhorváti (Hungary).....	Error! Bookmark not defined.
VIII.11 Bergheim - France	Error! Bookmark not defined.
VIII.12 Potočani (Croatia)	Error! Bookmark not defined.
VIII.13 Jagodnjak - Krčevine (Croatia).....	Error! Bookmark not defined.
VIII.14 Gougenheim - France.....	Error! Bookmark not defined.
VIII.15 Verteba - Ukraine	Error! Bookmark not defined.
VIII.16 Abony - Turjányos - dúlő (Hungary)	Error! Bookmark not defined.
VIII.17 Balatonszentgyörgy - Kenderföldek (Hungary)..	Error! Bookmark not defined.
CHAPTER IX.....	Error! Bookmark not defined.
Violence. Genetic predisposition. Social construct	Error! Bookmark not defined.
Violence in prehistory	Error! Bookmark not defined.
CHAPTER X	Error! Bookmark not defined.
INTERPRETATIONS REGARDING VIOLENCE AND TRAUMA AS REPORTED BY BIOARCHAEOLOGICAL DATA FROM NEOLITHIC AND ENEOLITHIC EUROPE	Error! Bookmark not defined.
X.1.1 Violence as a phenomenon.....	Error! Bookmark not defined.
X.1.2 Trauma and <i>perimortem</i> injuries on skulls.....	Error! Bookmark not defined.
X.3 Funerary discoveries and <i>perimortem</i> injuries.....	Error! Bookmark not defined.

X.3.1. Experimental archaeology. Studies regarding *perimortem* skull fractures. **Error!
Bookmark not defined.**

CHAPTER XI.....	Error! Bookmark not defined.
CONCLUSIONS	Error! Bookmark not defined.
LIST OF PLATES	Error! Bookmark not defined.
BIBLIOGRAPHY	Error! Bookmark not defined.

SUMMARY

Keywords: Eneolithic, Alba Iulia-Lumea Nouă, Foeni group, violence, cranial fractures, *perimortem* trauma, blunt object.

The thesis aims to analyze the archaeological and anthropological aspects of contexts and human bone remains discovered during preventive and systematic research at the Alba Iulia-Lumea Nouă site, attributed to the Eneolithic Foeni cultural group. The main objective of the thesis is to provide a comprehensive examination of Eneolithic funerary discoveries, focusing on osteoarchaeological aspects, and to contribute to the understanding of funerary practices, social structures, and the health status of the Foeni community.

Using methods and techniques of osteological investigation, commingled human remains and complete, or almost complete skeletons were analyzed, to estimate age at death, determine the biological sex, and identify palaeopathologies, with a particular focus on the *perimortem* traumatic injuries, as well as other relevant characteristics. The contextualization of results, both archaeologically and anthropologically, intended to understand and observe aspects related to similar behaviours in prehistoric communities, demonstrating that violence and conflictual relationships have always been present. At this stage of research, all the identified funerary contexts are exclusively positioned within the settlement, delimited to the southwest by the fortification system.

The thesis is structured into eleven chapters, accompanied by figures, tables, and plates.

CHAPTER I and **II** represent the argument and the introductory part of the thesis, including the motivation for choosing the topic. This part also outlines the situation regarding the specificities of the discoveries from the Lumea Nouă site, emphasizing other Eneolithic funerary findings within the territory of present-day Romania.

CHAPTER III makes a presentation concerning the history of research within the mentioned site. Lumea Nouă is located on the second terrace of the Mureş River, in the northeastern part of the municipality of Alba Iulia. Research campaigns have been carried out here since 1942, identifying multiple cultural layers. Of particular note, are the mass graves uncovered here since 2003 (**Sp. II/2003**, Mariş property), signalling the commencement of remarkable aspects associated with this Foeni settlement. Six mass graves have been identified, five in simple, circular pits, often repurposed, and one in a ditch, likely connected to the settlement's fortification structure. Individual burials are also identified,

represented by funerary deposits in ditches and rectangular pits. A triple inhumation (**Sp. V/2018**) has also been discovered. Secondary deposits were identified during the archaeological excavations from **2014** and **2018** (**Sp. I/2014** and **Sp. III/2018**).

The **IVth CHAPTER** is comprised of the description of each burial context - **Sp. II/2003, Sp. III/2005, Sp. VI/2005, Sp. I/2011, Sp. I/2013-2014, Sp. I/2014, Sp. II/2015, Sp. II/2018, Sp. III/2018, and Sp. II/2019**.

ALN Sp. II/2003 (Mariş Property) In trench **C**, at a depth of -0.75 m, was identified a circular pit (**G1**), containing commingled human remains, partially disarticulated, mixed with fragments of animal bone, ceramics, and remnants of a surface-dwelling (**L1**). Upon emptying the complex, on the pit's bottom, an individual in anatomical connection was noted, laying on its right lateral side, oriented **NE-SW**. A copper, oval-shaped loop ring with a rectangular profile, was recovered near a cranial vault.

ALN Sp. III/2005 (Colda Property) In trench **B**, at a depth of 0.65 m, a cluster of mixed, scattered, and disarticulated human bones is identified, mixed with animal bone a pottery fragments, spread over an area of 5 × 2.5 m. Upon dismantling this level, a circular pit (**Cx01**), containing more commingled human remains. Its dimensions were 1.35 × 1.65 m. The bottom of this pit had a substantial layer of burnt material and ash. No grave goods were identified.

ALN Sp. I/2011 (Teoc Property) In trench **D**, at a depth of 0.20-0.40 m, complex **C1** contained commingled and disarticulated human remains in an area measuring 2 × 2 m. The human remains were mixed with animal bone fragments, partially exposed to high temperatures, and pottery fragments. There are no grave goods associated with these individuals.

ALN Sp. II/2015 (Opruţa Property), in trench **D** at a depth of approximately 0.40 m from the current ground level, a series of cranial vaults were identified in a circular pit. It had a diameter of 1.3-1.4 m and a depth of 0.8 m. The excavation technique allowed for the observation of the deposition sequence for each individual. The pit was dug next to a collapsed dwelling, fragments of wattle being found among the skeletal remains. At the bottom of the pit, a support vessel, specific to the Foeni group bearers, was placed.

ALN Sp. II/2019 (Drăgan Property) The mass grave was discovered in trench **A** at 0.59 m. It is the only funerary complex where certain gestures related to funerary practices are observed, namely the deposition of 150 shell fragments from the *Unio* species, flint blades, and a vessel with intact fragments, alongside individuals. The burial is unique because it exhibits two distinct deposition layers: the first with disarticulated and

commingled human remains and the second one, with individuals preserved in anatomical connection. Animal bone remains, pottery fragments and medium-sized rocks are also identified here, discovered both in the first layer and deposited on individuals from the second one.

ALN Sp. VI/2005 (Sobaru Property)

The research captured a portion of the settlement's fortification ditches. At a depth of 1.70 m, within research unit **S I/St. 2**, a female individual was discovered, oriented SW - NE, deposited on its right side.

Sp. I/2013-2014 (Systematic research)

The archaeological field-school research uncovered a ditch-like structure, where nine individuals were identified, two disarticulated, one in its fill and another in its proximity. Seven other individuals, in anatomical connection, were found on its bottom. The ditch's length was 14.31 m, with a maximum opening at the top - 0.95 - 1.10 m, average width at the bottom 0.30 - 0.40 m, and a maximum depth of 1.70 m.

Secondary deposits

ALN Sp. I/2014 (Bogdan Property), Within trench **D**, in **Cx01**, arranged in a space of 0.70×0.70 m, six human cranial vaults deposited on a *Bos taurus* pelvis were discovered

ALN Sp. III/2018 (Pusta Property), trench **B**, **Cx001** represents a cluster of Foeni ceramic fragments (approximately circular and measuring 2.10×2.70 m), where the remains of a human cranial vault were identified. No grave goods were present.

Individual burials in pits

ALN Sp. II/2018 (Țîr Property) within trench **A**, at -0.74m, **Cx001** is represented by the burial of a non-adult individual, in a rectangular with rounded corners pit. No grave goods were present.

ALN Sp. V/2018 (Seserman Property), trench **B**, **Cx002a**, in an irregularly shaped pit, alongside faunal material and pottery fragments, two individuals in anatomical connection were identified at a depth of 1.86 m, deposited almost obliquely on the pit wall. After their removal, at -3.05 m below scattered wattle fragments and stones, a third individual is identified, deposited on its left side. No grave goods were found with these individuals.

The **Vth** chapter offers a detailed presentation of each radiocarbon data. The results of sampling and analysing of 27 human bone fragments, fell within the chronological interval located between 4600 - 4450 calBC, corresponding to the beginning of the Eneolithic period in Transylvania, and coinciding with the Foeni group communities. The

modelling of the results identifies four successive and distinct chronological moments for the events that led to the death of these individuals.

Chapter VI discusses aspects related to taphonomy and archeoethnology. Archaeoethnology is a multidisciplinary approach aimed at studying human remains within their funerary context, to reconstruct mortuary practices, gestures, and rituals. The funerary practices at Lumea Nouă are diverse, ranging from individual burials to mass graves and secondary deposits. The archaeological research from **Sp. I/2013-2014** (Bogdan property), **Sp. II/2015** (Opruța property), **Sp. II/2019** (Drăgan property), are described in detail, where field observations allowed for the reconstruction of the deposition sequence of individuals, recognizing the primary quality of the contexts. Primary burials are also the graves discovered in **2003** (**Sp. II/2003**, Mariș property), **2005** (**Sp. III/2005** Colda property), and **2011** (**Sp. I/2011** Teoc property), as indicated by the presence of mobile articulations.

CHAPTER VII presents the results of osteological analyses for each funerary context. The first part is dedicated to methodology, where techniques for establishing the biological profile, counting for the minimum number of individuals, and the recording techniques are presented. 16448 bone fragments and 45 human skeletons attributed to a minimum number of 140 individuals, 89 adults, and 51 non-adults were analyzed. Of the adults, 35 are male, 50 are female, and four are indeterminate. The second part of the chapter deals separately with each funerary discovery, presenting the results of the osteological analyses.

Sp. II/2003 (Mariș property)

The minimum number of individuals is 18, four non-adults and 14 adults. Age groups range from 1.5 to 55 years at the time of death. There are nine female individuals and five male ones. *Perimortem* injuries are recorded equally on the left and right side of the parietals. There are also injuries on the frontal and occipital bone. 12 individuals (ten adults, six female individuals, two male individuals, and two non-adults) are identified with *perimortem* trauma to the skulls. The shape imprints of the blunt objects are rectangular, circular, and oval. The fracture sizes range from 25 mm to 56 mm. Postcranially, seven long bones display possible *perimortem* traumatic injuries.

Sp. III/2005 (Colda property)

The minimum number of individuals is estimated at 54. There are 34 adults, 23 female individuals and 11 male individuals. Non-adults are represented by 20 individuals,

the sample including perinatals and individuals that reached 18-20 years at the time of death. For the adult category, the age group for the sample varies from 20 to 45 years age at death.

Concerning the cranial *perimortem* injuries, the left parietal bone is the most affected one, with 37 fractures, followed by the right parietal with 29 fractures, and the frontal with 18 fractures recorded. The frontal and the occipital bones are also affected. These injuries are identified in all male individuals, in 20 of the female individuals, and 23 cranial elements belonging to non-adults. The shapes left by the causative artefacts vary from circular, oval, to rectangular. Possible *perimortem* injuries are also visible in the appendicular skeleton, with recorded lesions on the femurs, tibias, humerii, and two ulnas.

Sp. I/2011 (Teoc property)

The mass grave discovered in **2011** had a minimum number of individuals of 18 (nine adults – five females, four males, and nine non-adults). The age groups range from 7.5 months to 40 years. Depression fractures are visible on the skulls of 13 individuals, all adults and three non-adults. Most of the injuries are recorded on the left parietal bone, with ten fractures, followed by the right parietal and frontal bones – each with four injuries recorded. There are two recorded injuries on the left frontal bone, and two on the occipital bone, as well. The shapes left on the cranial vaults by the blunt objects are rectangular, circular, and oval.

Sp. II/2015 (Opruța property)

The minimum number of individuals is 15. There are seven adults (three female individuals, two males, and two undetermined adults) and nine non-adults. The age categories range from 4.5 years to 45 years at the time of death. Thirteen of the individuals exhibit *perimortem* traumatic injuries. The skull fractures are predominantly located on the left parietal bone, with 11 fractures, followed by the right parietal bone with six injuries. The frontal bone presents a total of six injuries, and the occipital bone, other three. The shapes of the blunt objects imprinted on the cranial vault are predominantly oval and circular.

Sp. II/2019 (Drăgan property)

The mass grave discovered in **2019** contained the skeletal remains of another 11 individuals (nine adults, and two non-adults), six of whom exhibited *perimortem* traumatic injuries to the cranial vaults. The age groups range from 11.5-12 years to 40 years at the time of death. The *perimortem* fractures on the cranial vault are exclusively present in individuals from the first layer, except for **M7**, a male individual. The left parietal bone shows three depression fractures, the right parietal bone and frontal bone each show two, while the

occipital bone and the central part of the parietals register one fracture each. The shape imprints are circular and oval.

ALN Sp. VI/2005 (Property Sobaru)

The skeletal remains belong to a female individual, aged between 24-30 years at the time of death. The cranial vault exhibits two depressed fractures on the left parietal bone, one oval-shaped.

ALN Sp. I/2013-214 (Systematic research)

The systematic research from 2014 identified another nine individuals, seven in anatomical connection (five males, one female, and one non-adult) and the disarticulated remains of two other individuals (one non-adult and one male), deposited in a ditch, likely connected to the settlement's fortification system. The age groups include individuals ranging from one and a half years to 50 years old. All individuals present depressed fractures, mostly located on the left parietal bone, which records seven injuries. The right parietal bone has four injuries, as well as the occipital bone, with four recorded fractures in different regions. The frontal bone has three depression fractures. The shape imprints are circular, oval, rectangular, and triangular.

Secondary depositions

The secondary contexts from **2014** (**Sp. I/2014** Bogdan property) and **2018** (**Sp. III/2018** - Pusta property) consist of depositions of skulls, which exhibit traumatic injuries on the left side, around the parietal and frontal bones. For the **2014** research, the skull of five adult males, aged between 20-40 years, and one belonging to a five-year-old non-adult were identified, all showing fractures evenly distributed on the left parietal and frontal bones. The shapes left on the cranial vaults by the blunt objects are oval, triangular, and rectangular.

In the **2018** research, the skull of a child aged approximately five years at the time of death was identified with a depressed fracture on the parietal bone, circular shaped.

Individual inhumation Sp. II/2018 (Țîr property)

The rectangular burial pit discovered in **2018** contained the skeletal remains of a non-adult individual, aged 7.5 years old at death. No traumatic injuries were identified.

Triple inhumation

Sp. V/2018 (Seserman property) is a triple burial, comprised of three individuals, two non-adults, and one female individual. No traumatic injuries were identified.

CHAPTER VIII Funerary discoveries from 17 sites have been used as analogies - from the **LBK** environment - **Talheim, Vaihingen, Wiederstedt, Halberstadt, Schöneck - Kilianstädten, Herxheim** (Germany), **Asparn - Schletz** (Austria), **Vráble** (Slovakia), and

Bergheim (France); **Potočani** and **Jagodnjak - Krčevine** (Croatia), **Gougenheim** (France), **Abony-Turjányos-dűlő**, **Esztergályhorváti**, and **Balatonszentgyörgy-Kenderföldek** from Hungary, as well as **El Trocs Cave**, Spain. All these are mass graves, most containing individuals of all age categories and both sexes, exhibiting *perimortem* traumatic injuries inflicted with blunt objects on the cranial vaults. Similarities include the placement of graves within settlements, in simple pits, the arrangement of multiple individuals in the same pit without specific care, disposal of the dead in ditches that are parts of fortification systems, and the absence of grave goods.

CHAPTER IX addresses the concept of violence from philosophical, biological, evolutionary, and genetic perspectives, presenting various concepts. In world prehistory, 30 archaeological sites are identified as having human remains exhibiting *perimortem* traumatic injuries. Some of the oldest examples include the Neanderthal skull caps from Spain, **La Sima de Los Huesos**, from **Krapina** (Croatia), or **Qafzeh**, Israel.

The causes of events with violent characteristics are explored in **CHAPTER X**. Interpretations regarding violence in prehistory are divided into two narratives. The first argues that violence is innate in human nature, while the second claims that violent behaviour is learned, with early human groups having a low level of conflict. Research on warfare in prehistory is complex, as it is challenging to demonstrate it, archaeologically. Recent studies emphasize the variability of violent events, and the term "war" is debatable in the context of prehistory. Increasing territoriality and social inequalities are considered stress factors in prehistoric communities. Massacres are complex events triggered in situations of social, economic, cultural, and political crisis, resulting from long-term social processes and imbalances between communities. Indicators of prehistoric massacres include the presence of *perimortem* traumatic injuries on the cranial vault, the reduced proportion of postcranial traumas, the existence of one or more mass graves in a well-defined space, deviations from usual funerary norms, as well as the presence of all age categories and both sexes.

Archaeological and paleoclimatic studies in Central and Southern Europe highlight the association between social and climatic changes. Environmental variations have led to increased stress levels in communities, and phenomena such as Rapid Climate Changes and Bond events have impacted population migrations and changes in culture and settlements. Paleoclimatic analyses have identified periods of pronounced cooling and abrupt temperature changes, influencing the evolution of prehistoric societies.

Skeletal traumas provide important clues about interpersonal violence in archaeological communities. Injuries are classified based on the moment they occurred

relative to the time of death: *antemortem* (during life), *perimortem* (near the time of death), and *postmortem* (after death). The hat brim line (HBL) rule is used to differentiate intentionally inflicted injuries from those caused by accidents. Cranial fractures can reveal the type and intensity of force applied and can be used to identify the blunt instruments responsible.

CHAPTER XI is dedicated to conclusions. Overall, 61 injuries are noted on the left side of the parietal bone, 44 on the right parietal, 28 on the left frontal, 19 on the right frontal, and five in the central region of the skull. On the occipital bone, ten fractures are identified on the right, seven on the left, and eight in the lambda region; those on the viscerocranium and dental arches account for 2%.

Regarding distribution per sex, female individuals are recorded with 76 injuries, and males with 39%, meaning 50 fractures. For males, the fractures are predominantly on the left parietal, recorded with 20 traumatic lesions (42%), followed by the right parietal. Fractures are also present on the frontal and occipital, encompassing 23 injuries, 10 on the frontal and 13 on the occipital.

The cranial vaults of non-adults register 65 fractures. These are located predominantly on the left parietal, which records 21 fractures. The right parietal has 13 injuries (20%). The frontal bone accounts for 21 fractures. Posteriorly, on the occipital, six lesions are present, distributed equally on the left, right, and centre, with two fractures in each region. Regarding the shape imprint of the blunt object, these are characterized by four distinct shapes: oval, circular, rectangular, and triangular. Male individuals display three triangular, four rectangular and circular, and five oval injuries. Triangular-shaped injuries are present only in males. Oval-shaped injuries predominate in females, with 12 fractures of this shape, followed by five circular ones, and three rectangular ones. Non-adult have five circular injuries, two oval-shaped, and three rectangular ones.

From a paleopathological point of view, there is a high proportion of dental pathologies, followed by common degenerative indicators, metabolic and congenital diseases, as well as traces of infectious processes.

The situation at Lumea Nouă seems to have resulted from an attack on a community, with some individuals attempting to retaliate, as evidenced by the predominance of fractures on the left and frontal sides, which are consistent with face-to-face combat or at least striking the victim from the front by a right-handed individual. They are followed by those on the right side of the parietal, indicating strikes from behind, most likely when the victims were attempting to escape. In all age categories and both sexes, the proportion of fractures on the

left side of the vault is higher. Crania with multiple traumas also indicate such a scenario, especially since, in certain cases, multiple forms of the blunt object used are evident, demonstrating an attack by multiple aggressors on a single individual. The chaotic distribution within the graves, the absence of funerary inventory, and the lack of indications of care for the deceased further reinforce this situation.

Most likely, the objects that caused the injuries on the cranial vaults of individuals from Lumea Nouă were basic tools used in the era, some of which indeed display morphological characteristics suitable for producing the specific shapes imprints.

There is much uncertainty regarding the interpretation of violent events. There are several possibilities to explain the lack of care in the funerary treatment of the deceased, which could be the result of various conditions and factors. One possible scenario could be that community members were victims of massacres, and the lack of resources and pressure to bury the deceased quickly led to the improper treatment of human remains. However, there is also the possibility that newcomers took advantage of this situation and treated the deceased negligently. The integration of interdisciplinary approaches is crucial to obtaining a deeper and more detailed understanding of these archaeological findings.

SELECTED BIBLIOGRAPHY

Adams, Konigsberg 2008	Bradley J. Adams, Lyle W. Konigsberg, <i>How Many People? Determining the Number of Individuals Represented by Commingled Human Remains</i> , în Bradley J. Adams, John E. Byrd, <i>Recovery, Analysis, and Identification of Commingled Human Remains</i> , Humana Press, Humana Press, 2008, p. 241 - 255.
Boulestin 2020	Bruno Boulestin, <i>Ceci n'est pas une guerre (mais ça y ressemble): entre doctrine et sémantique, comment aborder la question de la guerre préhistorique?</i> , în <i>Paleo</i> 30 (2), 2020, p. 36 - 56.
Boulestin et al. 2009	Bruno Boulestin, Andrea Zeeb - Lanz, Christian Jeunesse, Fabian Haack, Rose - Marie Arbogast, Anthony Denaire, <i>Mass cannibalism in the Linear Pottery Culture at Herxheim (Palatinate, Germany)</i> , în <i>Antiquity</i> 83 (322), 2009, p. 968 - 982.
Buikstra, Ubelaker 1994	Jane Buikstra, Douglas H. Ubelaker, <i>Standards for Data Collection From Human Skeletal Remains</i> , Fayetteville, Arkansas Archaeological Survey Report Number 44, 1994, p. 272.
Chenal et al. 2015	Fanny Chenal, Bertrand Perrin, Hélène Barrand-Emam, Boulestin, Bruno, <i>A farewell to arms: A deposit of human limbs and bodies at Bergheim, France, c. 4000 BC</i> , în <i>Antiquity</i> 89, 2015, p. 1313 - 1330.
Condurăţeanu, Gligor 2021	Marian - Bogdan Condurăţeanu, Mihai Gligor, <i>Topografia și cronologia descoperirilor funerare eneolitice de la Alba Iulia - Lumea Nouă (cercetările 2003 - 2018)</i> , în <i>Studii de preistorie</i> 18, 2021, p. 87 - 132.
Davis et al. 2003	Basil A. S. Davis, Simon Brewer, Anthony C. Stevenson, Joël Guiot, <i>The temperature of Europe during the Holocene reconstructed from pollen data</i> , în <i>Quaternary Science Reviews</i> 22, 2003, p. 1701–1716.
Draşovean 2006	Florin Draşovean, <i>Burials in the area of the Foeni culture group</i> , în <i>Analele Banatului</i> , serie nouă, arheologie-istorie, vol. 1, nr. XIV, Muzeul Banatului, Timișoara, Museion, 2006 p. 129-134.
Duday 2006	Henri Duday, <i>L'Archéothanatologie ou l'archéologie de la mort</i> [Archaeothanatology or the archaeology of death], traducere de Christopher J. Knüsel, în Rebecca L. Gowland, Christopher J. Knüsel, <i>The Social Archaeology of Funerary Remains</i> , Oxford, Oxbow Books, p. 30–56.
Duday et al. 1990	Henri Duday, Patrice Courtaud, Éric Crubezy, Pascal Sellier, Anne-Marie Tillier, <i>L'Anthropologie «de terrain»: reconnaissance et interprétation des gestes funéraires</i> , în <i>Bulletins et Mémoires de la Société d'anthropologie de Paris</i> , Nouvelle Série 2 (3 - 4), 1990, p. 29 - 49.
Dolfini et al. 2018	Andrea Dolfini, Rachel J. Crellin, Christian Horn, Marion Uckelmann, <i>Interdisciplinary Approaches to Prehistoric</i>

	<i>Warfare and Violence: Past, Present, and Future</i> , în Dolfini, Andrea, Rachel J. Crellin, Christian Horn, Marion Uckelmann, <i>Prehistoric Warfare and Violence Quantitative and Qualitative Approaches</i> , Springer International Publishing, Springer Nature, 2018, p. 1 - 21.
Fibiger et al. 2023	Linda Fibiger, Torbjörn Ahlströmb, Christian Meyer, Martin Smith, <i>Conflict, violence, and warfare among early farmers in Northwestern Europe</i> , în PNAS 120(4), p. 1 - 9.
Fontijn 2021	David R. Fontijn, <i>Give peace a chance: on violence and warfare in prehistory and why it matters</i> , Huizen, Stichting Nederlands Museum voor Anthropologie en Praehistorie 2021, p. 65.
Furholt et al. 2020	Martin Furholt, Nils Müller - Scheeßel, Maria Wunderlich, Ivan Cheben, Johannes Müller, <i>Communality and Discord in an Early Neolithic Settlement Agglomeration: The LBK Site of Vráble, Southwest Slovakia</i> , în <i>Cambridge Archaeological Journal</i> 30(3), p. 469 - 489.
Galloway 1999a	Alison Galloway, Fracture patterns and skeletal morphology: introduction and the skull, în Alison Galloway, <i>Broken bones Anthropological Analysis of Blunt Force Trauma</i> , Charles C. Thomas, Springfield Illinois, 1999, p. 63 - 83.
Gligor 2009a	Mihai Gligor, <i>Așezarea neolitică și eneolitică de la Alba Iulia - Lumea Nouă</i> , Mega, Cluj - Napoca, 2009, p. 485.
Gligor 2009b	Mihai Gligor, <i>Contributions to the Absolute Chronology of the Neolithic and Chalcolithic of Transylvania</i> , în Cotiugă, Vasile, Felix A. Tencariu, George Bodi, <i>Itinera in Praehistoria. Studia in Honorem Magistri Nicolae Ursulescu</i> , Iași, 2009, p. 235–244.
Gligor 2010	Mihai Gligor, <i>Funerary Discoveries in Neolithic Settlement from Alba Iulia - Lumea Nouă (Romania). Multiple Burial or Ritual Centre?</i> , în <i>Transylvanian Review</i> XIX 5(1), 2010, p. 233 - 250.
Gligor 2013	Mihai Gligor, <i>An Unknown Part of Prehistoric Spirituality: Unusual Mortuary Practices in Transylvania</i> , în <i>European Journal of Science and Theology</i> 9(6), 2013, p. 201 - 210.
Gligor 2014	Mihai Gligor, <i>Începuturile eneoliticului timpuriu în Transilvania: o abordare bayesiană</i> , în <i>Analele Banatului (SN)</i> XXII, 2014, p. 91 - 105.
Gligor 2016	Mihai Gligor, <i>Practici funerare la comunitățile culturii Vinča din Transilvania</i> , în <i>Analele Banatului (S.N.)</i> XXIV, 2016, 29 - 36.
Gligor 2020	Mihai Gligor, <i>Ceramica pictată Foeni din situl arheologic Alba Iulia - Lumea Nouă: de la studiul tipologico - stilistic la investigațiile arheometrice</i> , în <i>Terra Sebus. Acta Musei Sabesiensis</i> 12, 2020, p. 9 - 53.
Gligor et al. 2005 - 2006	Mihai Gligor, Cristian Florescu, Marius Breazu, <i>Raport preliminar privind cercetările arheologice preventive de la Alba Iulia - Lumea Nouă (2005)</i> , în <i>Patrimonium Apulense</i> V–VI, 2005–2006, p. 161–172.

Gligor et al. 2006	Mihai Gligor, Cristian Florescu, Marius Breazu, Tudor Borșan, Ionuț Maican, Ștefan Lipot, Csaba Toth, Paula Mazăre, Beatrice Ciută, <i>Alba Iulia, jud. Alba. Punct: Lumea Nouă</i> , în <i>Cronica Cercetărilor Arheologice</i> 2006, p. 55–59.
Gligor et al. 2012	Mihai Gligor, Mariana Roșu, Viorel Panaitescu, <i>Bioarchaeological inferences from Neolithic human remains at Alba Iulia - Lumea Nouă (Transylvania, Romania)</i> , în Raluca Kogălniceanu, Roxana Curcă, Mihai Gligor, Susan Stratton, <i>Homines, Funera, Astra Proceedings of the International Symposium on Funerary Anthropology, 5 - 8 June 2011, „1 Decembrie 1918” University (Alba Iulia, Romania)</i> , BAR International Series 2410, Oxford, Archaeopress, 2012, p. 57 - 70.
Gligor et al. 2018	Mihai Gligor, Andrei Dorian Soficaru, Ana Fetcu, <i>Cranial Fractures in 2005 Early Eneolithic Multiple Burial from Alba Iulia - Lumea Nouă (Romania)</i> , în <i>Annales Universitatis Apulensis, Series Historica</i> 22/I, p. 27 - 97.
Gligor et al. 2023	Mihai Gligor, Kirsty McLeod, Ana Fetcu, Călin Șuteu, <i>A ditch in time: A bioarchaeological analysis of the human skeletal remains discovered at Alba Iulia - Lumea Nouă (Romania)</i> , în ed. Kogălniceanu, Raluca, Mihai Gligor, Andrei Soficaru, Susan Stratton, <i>Proceedings of the International Symposium on Funerary Anthropology, ‘1 Decembrie 1918’ University (Alba Iulia, Romania), Homines, Funera, Astra 3 - 4: The multiple faces of death and burial</i> , Oxford, Archaeopress, 2023, p. 47 - 71.
Gligor et al. 2024a	Mihai Gligor, Ana Fetcu, Bogdan Condurățeanu, Alina Bițișan, <i>An Early Eneolithic mass grave from Alba Iulia - Lumea Nouă (Romania)</i> , 2024, .
Gligor et al. 2024b	Mihai Gligor, Kirsty McLeod, Allison Carnell, Ana Fetcu, <i>Human skull and Faunal Remains from Alba Iulia - Lumea Nouă Eneolithic Settlement (Romania)</i> , în ed. Kogălniceanu, Raluca, Mihai Gligor, Andrei Soficaru, Susan Stratton, <i>Proceedings of the International Symposium on Funerary Anthropology, ‘1 Decembrie 1918’ University (Alba Iulia, Romania), Homines, Funera, Astra 5 - 6</i> , Oxford, Archaeopress, 2024, .
Gligor, Varvara 2008	Mihai Gligor, Simona Varvara, <i>Un artefact metalic descoperit în așezarea preistorică de la Alba Iulia - Lumea Nouă</i> , în <i>Annales Universitatis Apulensis, Series Historica</i> XII/1, 2008, p. 167–172.
Gligor, Lipot 2009	Mihai Gligor, Ștefan Lipot, <i>Alba Iulia, jud. Alba. Punct: Lumea Nouă</i> , în <i>Cronica Cercetărilor Arheologice</i> , 2009, p. 251–253.
Gligor, McLeod 2014	Mihai Gligor, Kirsty McLeod, <i>Disarticulation as a Transylvanian early Eneolithic mortuary practice? A case study from Alba Iulia - Lumea Nouă (Romania)</i> , în <i>Annales</i>

	<i>Universitatis Apulensis</i> , Seria Historica 18/II, 2014, p. 61 - 86.
Gligor, Băcuet Crișan 2014	Mihai Gligor, Sanda Băcuet Crișan, <i>Inhumation versus cremation in Transylvanian Neolithic and Eneolithic</i> , în <i>Studia Antiqua et Archaeologica XX</i> , 2014, p. 37 - 67.
Gligor, McLeod 2015	Mihai Gligor, Kirsty McLeod, <i>Disposal of the dead. Uncommon mortuary practices from Alba Iulia - Lumea Nouă 2003 excavation</i> , în Raluca Kogălniceanu, Mihai Gligor, Roxana Curcă, Susan Stratton, <i>Homines, Funera, Astra 2 Proceedings of the International Symposium on Funerary Anthropology, September 2012, „1 Decembrie 1918” University (Alba Iulia, Romania)</i> , Oxford, Archaeopress, 2015, p. 25 - 41.
Kremer et al. 2008	Célia Kremer, Stéphanie Racette, Charles-Antoine Dionne, Anny Sauvageau, <i>Discrimination of falls and blows in blunt head trauma: systematic study of the hat brim line rule in relation to skull fractures</i> , în <i>Journal of Forensic Sciences</i> , 53 (3), 2008, p. 716 - 719.
Larsen 2002	Clark, Spencer, Larsen, <i>Bioarchaeology: the lives and lifestyles of past people</i> , în <i>Journal of Archaeological Research</i> 10 (2), 2002, p. 119 - 166.
Lefranc et al. 2015	Philippe Lefranc, Hélène Réveillat, Y. Thomas, <i>A les pratiques mortuaires du Néolithique Récent en Alsace : L'exemple du site de Gougenheim (France, Bas - Rhin)</i> , în Leonor Rocha, Primitiva Bueno - Ramirez, Gertrudes Branco, <i>Death as Archaeology of transition: Thoughts and Materials, Papers from the II International Conference of Transition Archaeology: Death Archaeology 29th April - 1st 238 May 2013</i> , BAR International Series 2708, Archaeopress, 2015, p. 131 - 145.
Lewis 2017	Mary E. Lewis, M., <i>Paleopathology of Children: Identification of Pathological Conditions in the Human Skeletal Remains of Non-adults</i> , Elsevier, 2017, p. 300.
Lundberg, Gligor 2015	Christina Lundberg, Mihai Gligor, <i>Place of death and place of rest: commingled human remains from Alba Iulia - Lumea Nouă 2015 early Eneolithic funerary discovery</i> , în <i>Annales Universitatis Apulensis Series Historica 19/II</i> , 2015, p. 71 -103.
Madden et al. 2017	Gwyn D. Madden, Jordan K. Karsten Sarah H. Ledogar, Ryan Schmid, Mykhailo P. Sokhatsky, <i>Violence at Verteba 240 Cave, Ukraine: New insights into the Late Neolithic intergroup conflict</i> , în <i>International Journal of Osteoarchaeology</i> 28 (1), 2017, p. 1 - 10.
Makkay 2000	János Makkay, <i>An early war. The Late Neolithic mass grave from Esztergályhorváti, Budapest</i> , 2000, p. 83.
Meyer et al. 2009	Christian Meyer, Guido Brandt, Wolfgang Haak, Robert A. Ganslmeier, Harald Meller, Kurt W. Alt, <i>The Eulau eulogy: Bioarchaeological interpretation of lethal violence in</i>

	<i>Corded Ware multiple burials from Saxony-Anhalt, Germany</i> , in <i>Journal of Anthropological Archaeology</i> 28, 2009, p. 412–423.
Meyer et al. 2014	Christian Meyer, Christian Lohr, Olaf Kürbis, Veit Dresely, Wolfgang Haak, Christina J. Adler, Detlef Gronenborn, Kurt W. Alt, Mass Graves of the LBK Patterns And Peculiarities, in Alasdair Whittle, Penny Bickle, Early Farmers. The View from Archaeology and Science, Proceedings of the British Academy 198, Oxford University Press, 2014, p. 307–25.
Meyer et al. 2015	Christian Meyer, Christian Lohr, Detlef Gronenborn, Kurt W. Alt, The massacre mass grave of Schöneck Kilianstädten reveals new insights into collective violence in Early Neolithic Central Europe, in PNAS 112 (36), p. 11217–11222.
Meyer et al. 2018a	Christian Meyer, Corina Knipper, Nicole Nicklisch, Angelina Münster, Olaf Kürbis, Veit Dresely, Harald Meller, Kurt W. Alt, Early Neolithic executions indicated by clustered cranial trauma in the mass grave of Halberstadt, in Nature Communications 9, 2018, p. 1 - 11.
Meyer et al. 2018b	Christian Meyer, Olaf Kürbis, Veit Dresely, Kurt W. Alt, <i>Patterns of Collective Violence in the Early Neolithic of Central Europe</i> , in Andrea Dolfini , Rachel J. Crellin, Christian Horn, Marion Uckelmann, <i>Prehistoric Warfare and Violence: Quantitative and Qualitative Approaches</i> , Springer, 2018, p. 21 - 39.
Moreno - Ibáñez et al. 2021	Miguel Ángel Moreno - Ibáñez, Palmira Saladié , Juan I. Morales, Artur Cebrià, Josep Maria Fullola, <i>Was it an axe or an adze? A cranial trauma case study from the Late Neolithic - Chalcolithic site of Cova Foradada (Calafell, Spain)</i> , in <i>International Journal of Paleopathology</i> 32, 2021, p. 23–30.
Müller - Scheeßel, Hukel'ová 2020	Nils Müller - Scheeßel, Zuzana Hukel'ová, The burials and human remains from the LBK and Želiezovce settlement site of Vráble, in Martin Furholt, Ivan Cheben, Johannes Müller, Alena Bistáková, Maria Wunderlich, Nils Müller - Scheeßel, <i>Archaeology in the Zitava Valley 1 - The early Neolithic LBK settlement site of Vráble</i> , Leiden, Sidestone Press, 2020, p. 159 - 234.
Muñoz et al. 2019	Lydia P. Sánchez - Barba Muñoz, Eduardo Vijande Vila, Ángel Rubio Salvador, Inmaculada Alemán Aguilera, Marta Díaz - Zorita Bonilla, Adolfo Moreno Márquez, Salvador Domínguez - Bella, José Ramos Muñoz, Miguel C. Botella López, <i>Possible interpersonal violence in the Neolithic necropolis of Campo de Hockey (San Fernando, Cádiz, Spain)</i> , in <i>International Journal of Paleopathology</i> 27, 2019, p. 38–45.
Orschiedt 2005	Jörg Orschiedt, The head burials from Ofnet cave: an example of warlike conflict in the Mesolithic, in Mike Parker Pearson, I. J. Nick Thorpe, <i>Warfare, Violence and</i>

	Slavery in Prehistory, Proceedings of a Prehistoric Society conference at Sheffield University, BAR International Series 1374, Archaeopress, 2005, p. 67 - 73.
Orschiedt, Noël Haidle 2007	Jörg Orschiedt, Miriam Noël Haidle, The LBK Enclosure at Herxheim: Theatre of War or Ritual Centre? References from Osteoarchaeological Investigations, in Tony Pollard, Iain Banks, War and Sacrifice Studies in the Archaeology of Conflict, Brill, Leiden, Boston, 2007, p. 153 - 169
Semelin 2001	Semelin 2001 Jacques Semelin, In consideration of massacres in Journal of Genocide Research 3(3), 2001, p. 377–389.
Silva et al. 2012	Ana Maria Silva, Rui Boaventura, Maria Teresa Ferreira, Rui Marques, <i>Skeletal evidence of interpersonal violence in Portuguese Late Neolithic collective burials: an overview</i> , in Rick Schulting, Linda Fibiger, <i>Sticks, Stones, and Broken Bones: Neolithic Violence in a European Perspective</i> , Oxford University Press, Oxford, 2012, p. 317 - 340.
Wahl, Trautmann 2012	Joachim Wahl, The Neolithic massacre at Talheim, in Rick J. Schulting, Linda Fibiger, <i>Stones, and Broken Bones: Neolithic Violence in a European Perspective</i> , 2012, Oxford, Oxford University Press, p. 77 - 100.
Walker 2001	Phillip L. Walker, A Bioarchaeological Perspective on the History of Violence, in Annual Review of Anthropology 30, 2001, p. 573 - 596.
Zeeb - Lanz et al. 2009	Andrea Zeeb-Lanz, Rose-Marie Arbogast, Fabian Haack, Miriam N. Haidle, Christian Jeunesse, Jörg Orschiedt, Dirk Schimmelpfennig, Samuel van Willigen, The LBK settlement with pit enclosure at Herxheim near Landau (Palatinate). First results, in Daniela Hofmann, Penny Bickle, <i>Creating Communities New Advances in Central European Neolithic Research</i> , Oxbow Books, Oxford and Oakville, Oxford, 2009 p. 202 - 219.