

UNCOVERING A PECULIAR MASS GRAVE IN EASTERN ROMANIA

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Abstract: *The fortuitous discovery from Horlești-Hățaș, Rediu commune, Iași County, proved once again the important role played by chance in archaeological research. Here, in front of a living space, on the occasion of some mechanical works, was found a mass-grave containing the osteological remains of more than 200 individuals. The exceptional character of the funerary context (limited space, large number of individuals, skull alignment, traces of contusions or wounds, absence of the funerary inventory) suggested some hypotheses on chronological and cultural framing. By corroborating the archaeological-historical record, the forensic data and criminal investigation data to which we added the results of the ^{14}C analyzes we have succeeded in identifying the period during which the tragic events took place north of Iași.*

Rezumat: *Prin descoperirea fortuită de la Horlești-Hățaș, comuna Rediu, județul Iași, s-a adeverit încă o dată că întâmplarea poate juca un rol important în cercetarea arheologică. Aici, în fața unui spațiu de locuit, cu ocazia unor lucrări mecanice, a fost descoperită o groapă comună conținând resturile osteologice care provin de la peste 200 indivizi. Caracterul excepțional al contextului funerar (spațiu restrâns, număr mare de indivizi, alinierea craniilor, urmele unor contuzii sau răni, absența inventarului funerar) ne-au sugerat trei ipoteze de lucru privind încadrarea cronologică și culturală. Prin coroborarea informațiilor arheologico-istorice, de medicină legală și cele de investigare criminalistică la care am adăugat rezultatele analizelor ^{14}C am reușit o posibilă identificarea a perioadei în care s-au desfășurat evenimentele tragice de la nord de Iași.*

Keywords: *mass-grave, eastern Romania, Late Middle Age.*

Cuvinte cheie: *mormânt colectiv, estul României, perioada târzie a Evului Mediu.*

DOING FORENSIC ARCHAEOLOGY

The funerary archaeology has a long history and remarkable success. The subject of this contribution does not only propose such type of approach. This experience is also a necessary step for developing the specific skills for such a field of investigation. We have to admit from the outset that locally, the forensic archaeology, the battlefield archaeology and the study of trauma in skeletal remains are in a prolonged childhood¹. Although the eastern area of the Carpathians was an area with many military conflicts during the Middle Ages, very little clear data survived on the participants, their number, the social or military condition, the place of the conflicts etc. Some recent local experiences in the field of forensic

¹ Forsom et al. 2017, 13; Diana 2015, 129-139.

investigation² gave us a support for a new attempt. This was possible by building a collaborative platform that included specialists in archaeology, history, physics, chemistry, military prosecution, legal medicine, forensics, and pyrotechnics. During the investigation in the field some residents from the area gave us the first oral history data. They were the ones who told us that during the years, on the place called *Hățaș*, human osteological remains appeared on the occasion of agricultural works. Although these "incidents" were reported to local institutions, no investigation of the site was carried out. In recent years, with the expansion of real estate investments, the place called *Hățaș* has become much more frequented. This situation triggered, through hazard, the multidisciplinary research of an unusual funerary context.

During the mechanical excavation of a trench in a courtyard of a house (Pl. 1) situated in Horlești village, Rediu Commune, Iași County (Pl. 2), it was cut a funerary context along the length of approximately 4.50m and the depth of between 0.50-0.70m. The activity continued until the mechanic was stopped by the building owner, who has announced the local authorities (Municipality, local police). It was opened a case of judicial investigation which came under the direction of Military Prosecutor of the Military Tribunal in Iași. This institution asked us to perform archaeological investigation of the context represented by a mass grave (Pl. 3). Preventive archaeological research was carried out by members of the Faculty of History at the "Alexandru Ioan Cuza" University in Iași. The site under investigation is located in the central-eastern part of Iași County, on the territory of Horlești Village, Rediu Commune, on the left side of the road DJ 282/DJ646, Iași-Gropnita, km 14 + 520 (Pl. 1-2) and is owned by the Daniela and Albert Rediu family³. Together with the representatives of the institutions involved we proceeded to the immediate extraction and recovery, registration and storage of osteological remains from the dump. First, the entire surface was investigated with the metal detector by the officers from Inspectorate for Emergency Situation Iași (ISU Iași). Several shrapnel from mortars and cartridges have been identified but no artifacts have been found (Pl. 4). Then the excavated earth and the gravel were removed from the surface of the entire burial context so that we could delimit the archaeological investigation area and identify any soil-marks that could give us data about the surface of the site. The building owner as well as the workers told us that they had already removed the entire surface above the funerary context. The technical team from ISU Iași informed us that many elements of ammunition or military activities from 1940-1944 were extracted from this area. This situation was confirmed after the onset of the archaeological research.

To extend the documentation, we turned to the oral history sources in the area. There were two possible variants regarding the occurrence of mass-graves on the territory of the village of Horlești. The first source, Costache Crușu (born in 1936) told us that in the southernmost part of the village of Horlești, a local landlord named Vacu, owner of 20 hectares, had brought small communities from Neamț County with a precarious social-economic condition to participate in occasional agricultural work. He confessed that his grandmother Profira Crușu (born in 1880) told him in the 1960s that members of these communities had cholera and "buried each other sometime before 1916". The second source

² The research of a mass-grave in the area of Popricani commune, Iași County may be considered as a first attempt in the area of local forensic archaeology. Unpublished work.

³ The entire research team thanks the Rediu's family for supporting the project in September-October 2015.

is Gheorghe Cordun (born in 1930), who reported that after the war some villagers were forced to gather the human remains on the former line of the front, which were deposited in the cemetery either in the village area. The same source reported that the skulls of men and bones were buried. Some of these human remains were wearing soldierly clothing or footwear. No information was provided about the exact place of burial.

OBJECTIVES OF PREVENTIVE ARCHAEOLOGICAL RESEARCH

For the proper conduct of the forensic investigation we have proposed the statement of some objectives as follows: identification, supervision and monitoring, from the archaeological point of view, of the area affected by the investment project, based on specialized standards and procedures; research and protection of the area in order to identify the archaeological monuments, to determine their spatial distribution and to obtain the scientific data about them; the registration, collection, preservation and restoration of the mobile archaeological heritage, for the purpose of its scientific and museum value; performing rescue interventions on the archaeological potential spotted in the area.

In this research we proposed the archaeological investigations in the funeral discovery identified during its partial accidental damage in order to enlarge the image of the quantity, the content and the spatial distribution of different types of connections between the components of the funerary context. For the same area, we intend to identify, research and valorize any kind of archaeological monument found in the area where archaeological intervention will take place.

BRIEF DESCRIPTION OF THE ARCHAEOLOGICAL RESEARCH METHODOLOGY

In the first stage of the investigations, after preliminary bibliographic documentation and after capitalizing sources of local oral history, we initiated the use of ordinary non-destructive methods (naked eye observations on the current environment to identify any signs concerning the soil marks), as well as field survey in order to identify the remnants of different types of anthropic intervention, their frequency on the surface unit, the spatial distribution, the connection of recovered artefacts with other similar discoveries in the workspace. The end of this stage was marked by the summary processing of the recovered material, the recording in the working drawings and the evaluation of the distribution.

The detached personnel from ISU-Iași have been permanently accompanying us in field research and throughout the excavation. They have been tasked with identifying, marking and hunting ammunition in the area under archaeological investigation.

During the second stage, the archaeological research strategy was designed which in the present case presupposed the use of destructive interventions by manually realizing the research units. Particular attention has been paid to the separate selection and storage of soil types (arable and sterile) as well as to the observance of the initial pedological layout of the soil layers when covering the uncovered surfaces.

The small size of the researched area of about 28 m² has called for a single stratigraphic section, which exploits the mechanic trench accidentally made by the excavation equipment. The excavation unit (CAS 1) was designed in the corner of N-E of the private property, on the surface where human osteological remains were extracted mechanically. Inside this unit, we designed a trench (S1) to produce stratigraphic observations on the extent of the funerary discovery (Pl. 5).

By proposing this research project, we wanted to respond to all the goals we have set ourselves, objectives that imply the identification, investigation, registration, chronological and cultural framing of the monument.

BRIEF DESCRIPTION OF THE FORENSIC ANTHROPOLOGY METHODS

Excavation of this site was accomplished according to archaeological procedures. All relevant data were recorded, mapped, measured, photographed, and described, along with the information on the bones and all the artifacts found. After that, the bones were removed, placed in containers, and transported for further analysis to the Institute of Forensic Medicine, Iași.

In the laboratory of forensic anthropology, the material was cleaned using soft brushes and water, dried, and partially reconstructed. The remains were examined to determine ancestry, sex, age, and stature and to differentiate human from non-human bone⁴. Sex estimation was performed by examining the traits of the pelvis, skull and long bones⁵. Age was estimated by examining the occlusal wear, changes of the pubic symphysis using the Suchey-Brooks method and ossification of the innominate⁶. Ancestry was assessed by visual identification of skull traits that differ among the three major population groups (European, African and Asian), especially of the teeth (because the majority of the bones of the face were absent)⁷. Due to the fact that the skeletons were considerably damaged postmortem, antemortem stature was not possible to be determined. The remains were analyzed in detail for signs of disease, injury, or skeletal anomalies. The following data were recorded for each detected traumatic injury: anatomic region, bone type, bone segment, dimensions (length, width, and maximum depth), pattern, aspects of margins, angles, direction of fractures, callus formation, etc. Determination of the chronology of injuries was based on characteristics of trauma, especially taking account of fractures edges and patterns, colour changes, surface alterations⁸. Injuries were considered antemortem, when there was a visible sign of osteogenic response, perimortem, with no visible bone reaction, sharp, straight fracture edges, no colour changes, and postmortem, having modification in shape combined with loss of bones segments, cracks, breaking nearly at right angles, with almost flat ends, without radiating fractures, no evidence of bending⁹. For extending the evaluation of interpersonal violence, the identification of traumatic injuries was followed by analysis of their frequency and distribution. For this purpose, the injuries were recorded as affecting one of five aspects of the skull: anterior, posterior, superior, left lateral and right lateral¹⁰.

⁴ Byers 2005, 61-71.

⁵ Byers 2005, 61-71; Krogman, Iscan 1986, 148-164.

⁶ Scheuer et al. 2000, 341-373; Janz 2013, 54-59.

⁷ Janz 2013, 54-59.

⁸ Cattaneo, Porta 2009, 2557-2561.

⁹ Byers 2005, 61-71; Cattaneo, Porta 2009, 2557-61; Kimmerle, Baraybar 2008, 58-61.

¹⁰ Byers 2005, 61-71; Fernandez *et al.* 2015.

RESULTS

The funerary context is the result of collecting and depositing the osteological human remains into a mass grave after the death of a significant number of individuals (approximately 200)¹⁰. The taphonomic history of the site shows that there are a considerable number of skulls showing postmortem¹¹ anatomical distortion. Some distortion is due to the *in situ* positioning of the skulls. The skulls which were deposited in the lateral position were much more pressed than the other skulls (Pl. 6/a-d). The top layer of bone remains was subjected to numerous mechanical interventions.

The following observations have to be included in order to understand the history of the place. The majority of the osteological remains are represented by individual males of mature age. Of the huge number of osteological remains it was identified only a bone from a juvenile and some bones from a female. By contrast to other forensic cases undergone by the team when referring to the general state of health and hygiene one can see the poor condition of dentition and the absence of traces of surgery or dentistry intervention (Pl. 7).

Due to different perimortem or postmortem conditions it stands out the quasi-absence of bones of the feet (tarsus, metatarsals, phalanges) and hands (carpal, metacarpal, phalanges).

The deposition of bone remains without respecting local religious or cultural customs is another matter of question. During the excavation one can see the intermingled bones coming from different anatomical contexts (Pl. 8).

Even though the filling of the pit was sieved there were no traces of clothing, shoes, personal property in order to guide the team to accomplish the history of the place. The only artifacts unearthed at the top of the archaeological context are represented by 153 fragments of different types of modern and contemporary pottery and glass, fragments of plastic, rubber, wires and fragments of ammunition to be dated to the mid of the 20th century (Pl. 4).

All remains were incomplete and fragmented, due to considerable post-mortem damage. The anthropological analysis of the bones (Fig. 1) revealed no pathological or degenerative changes, but a lot of injuries, which were classified as ante, peri and postmortem (Fig. 2), as follows:

Antemortem injuries (Pl. 9)

In five cases were identified signs of antemortem trauma, as healed fractures, with round edges: on a left parietal of M152, on a left frontal of M179, on an occipital of M199, on a right frontal from M142 and on a left parietal of M181-181B). The location and aspects of the injuries from M179 and M199 suggests cut marks, consistent with a bladed weapon such as a knife, bayonet, etc., with perpendicular impact for M199 injury. The healed injury from M152 could be a chop mark, having one side of the fracture even and the other one uneven, consistent with a long bladed weapon such as a sword. The healed fractures from M142 and M181-181B) show penetrating injuries, one caused by a pointed weapon, round section, by 5 mm diameter, such as an arrow (M181-181B) and one by a corner of a triangular pyramidal object (M142).

¹¹ Jurda et al. 2015, 545-547

Perimortem injuries (Pl. 10)

Forty-eight perimortem trauma were identified from all bone fragments. Of the total number, 45 were cranial (eight on anterior, eight on right lateral, eight on left lateral, nine superior and 12 posterior) and three post-cranial on right femur, left tibia, posterior part of lumbar vertebra; 42 cranial injuries were consistent with sharp-force trauma, only one projectile trauma and two blunt-force trauma whereas postcranial injuries only two with sharp-force and one projectile trauma. Among cranial sharp-force trauma, one was made by a pointed weapon, of 5mm diameter and round section. The rest of them were a chop mark, morphologically characterized by a fracture with smooth surface, resulted when the weapon stroked the bone and a defect represented by an irregular surface that resulted as the blade was removed from the bone, consistent with a long bladed weapon such as a bayonet or sword. Only one cranial injury was a fracture, representing blunt force injury, produced by fall or blow with a blunt instrument, such as hammer, club, brick, stone etc. and one was a spherical projectile trauma represented by a round shape entrance wound, without bevelling, possible by a ball of stone or iron of 16mm with high velocity. The analysis of postcranial injuries shows the following: a femur, on lateral facet, exhibits sharp force trauma from a long bladed weapon, with a blade partially straight and partially serrated; a tibia lateral facet shows spherical projectile trauma – a round shape entrance wound, possible by a ball of stone or iron of 16mm diameter, and a lumbar vertebra sharp force trauma from a pointed weapon, square section, edge of 4.1mm, possibly by an arrow, with perpendicular impact, in a posterior-anterior direction.

Postmortem injuries (Pl. 11)

Post-mortem injuries were found especially on the skulls from 15 individuals in the first layer of the mass grave, near the surface, probably as a result of agricultural machinery and tools in recent period when the field near mass grave was used for agriculture. The most characteristic lesion was a semicircular, oblique cut of the skull, with irregular surface; in one case, this type of injury was found on a skull fragment that not continued on the other fragment of the same bone, proving that was inflicted after death, when the skull was already fragmented.

Due to the absence of soft tissues, it was not possible to establish the cause of death, except of one case, where it was considered that the spherical projectile trauma from the skull of M104 is consistent with violent death by a ball of stone or iron of 16mm diameter with high velocity.

The extended or semiflexed positions¹² of the skeletons and backbone remnants provide informations on the postmortem state of the body when was buried¹³. For situations when backbones and spinal bones were identified in association with portions of rib or pelvic bone it can be assumed that the thoracic collapse occurred on-site in a ossuary pit (Pl. 12).

For some bones one can observe the presence of traces of trauma on a significant number of skulls. These signs seem to have been the result of using sharp edge artifacts, like knives or

¹² Dupras et al. 2006, 113, Fig. 7.3.

¹³ Dogăroiu 2011, 92.

swords during some violent military events¹⁴. We do not exclude the possibility that some of the skulls, at least those in the first layer, have been affected as a result of agricultural work.

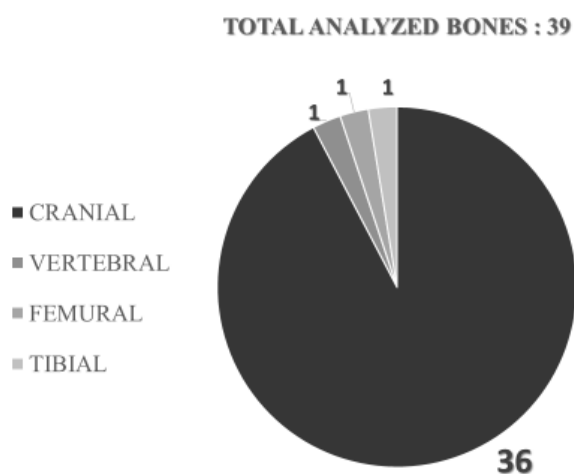


Fig. 1. Total number of analyzed osteological remains

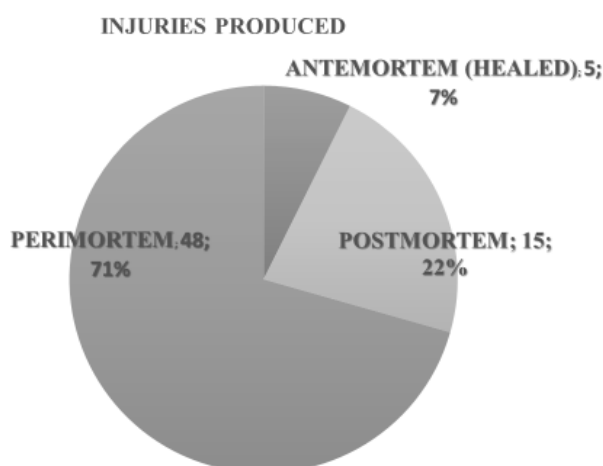


Fig. 2. Timing of producing the injuries.

CONCLUSIONS

The anthropological examination of skeletal remains offered insights on the biological profile of individuals and determined the most likely cause of death, which could serve as direct evidence of past warfare. Using morphological and anthropological analyses, remains were shown to contain bones of more than 200 adult European individuals, most part of them male, minimum one female and one juvenile. Considerable postmortem damage and changes of the bones compromised the possibility to estimate the precise age and stature of the individuals.

¹⁴ Lewis 2008; Nicklisch et al. 2015, Fig. 11; Boylston 2004, 40-43, Fig. 15; Roberts, Connell 2004, 24-40; Constantinescu et al. 2015, 112; Andreica et al. 2016, 373-376.

Perimortem injuries, as cut marks, cranial fractures, spherical projectile trauma, and pointed marks were identified in 32 out of approximately 200 cases, in 16% percentage, predominant on the skulls in 94% of cases. We could not exclude the possibility that fragmentations of bones in uncertain cases were the result of the same injuries. The anthropological examination of skeletal remains comes to offer direct evidence on this regard. In spite of considerable postmortem bones damage, the analysis revealed a high frequency of traumatic pathology.

The funerary context is the result of collecting and depositing the osteological human remains into a mass grave after the death of a significant number of approximately 200 individuals (Pl. 13). This funerary context could be attributed to some military events occurring in the 16-17th century or during the Russian-Austrian-Turkish wars, when the area in the vicinity of the Prut River was a permanent territory for conducting any kind of military confrontation. This was the working hypothesis!

During the the research, through the Military Prosecutor's Office of Iasi¹⁵, four samples of human bones were sent for RC analysis¹⁶. Two of them, coming from M44 (R_48-1) and M128 (R_48-4), yielded results that are below 60% confidence in the 2σ range. For better understanding the results it was used a RC data obtained from a single human bone M 197 (R_48-3) from the mass-grave, where the RC data is 75,5% confidence in the 2σ range. Finally, we obtained the following inference regarding the history of a place¹⁷.

In plotting the overlapping portion of the calibration intervals that were obtained a probability is noted for the second half of the 15th century - first half of 17th century, where there is the greatest density of probability that the actual date belong to this range. The 13 INTC calibration curve shows (Fig. 3), compared to the corresponding portion for uniformly increasing the 17th century, an area of increasing and one of decreasing. Therefore, the results of calibration will be scattered by the two branches of the graph area. As a consequence, the grouping of the four results (the same sigma value for the four cases) can be performed for an increment of 50 years. In the light of the foregoing it can be said with certainty that the four people died no earlier than 1400 and no later than 1800 CAL. AD, most likely no earlier than 1450 and no later than 1650 CAL. AD, taking into account the increment used for calibration (Fig. 4). As a consequence, they belong to the Classic/Late Middle Age. If we

¹⁵ All the samples were collected and send for RC analysis by the partners from the Military Prosecutor Office in Iași.

¹⁶ All RC analyzes were performed within IFIN-HH (Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering), RoAMS Laboratory by T. Sava, C. Simion, G. Sava, O. Gâza, I. Stanciu, D. Păceșilă, B. Ștefan according to an institutional agreement with the Military Prosecutor's Office, Iași, Romania.

¹⁷ Differences in RC data may be caused by different post-mortem exposure conditions and by different age of the individuals and by different other conditions. For a full analysis of the RC data obtained from human bone a human bone collagen offset (HBCO) correction is required. A working hypothesis is extremely important and its invocation reveals the need for a multidisciplinary approach: *"It should also be noted that radiocarbon analysis does not date the death of an individual but rather the period of growth during which the carbon was deposited in the bone and then gradually replaced. This means that the age of the individual must also be taken into account"*. See, Nicklisch et al. 2007, 23. For understanding the core of HBCO and the importance of this correction when working with RC data and the need of complementary data from the field of Physical Anthropology, see, Barta, Štolc, 2007.

associate the result of observations during archaeological research (four people suffered a violent death in about the same time), we can select a sub-interval where the probability is nonzero in all cases and resulting in the following scenario: the Ottoman campaign in Moldavia during the time of Petru Rareș, woiewod of Moldavia (1527-1538, 1541-1546), was carried out in the autumn of 1538 by Suleyman the Magnificent, the attack of Moldavia being sustained from the east by the Crimean Tatar's khan¹⁸. To them has joined the Polish army, too¹⁹. Thus, Petru Rareș was forced to call a major mobilization on the north of the country to perform military maneuvers on the interior lines in the Suceava, Iași and Botoșani areas²⁰.

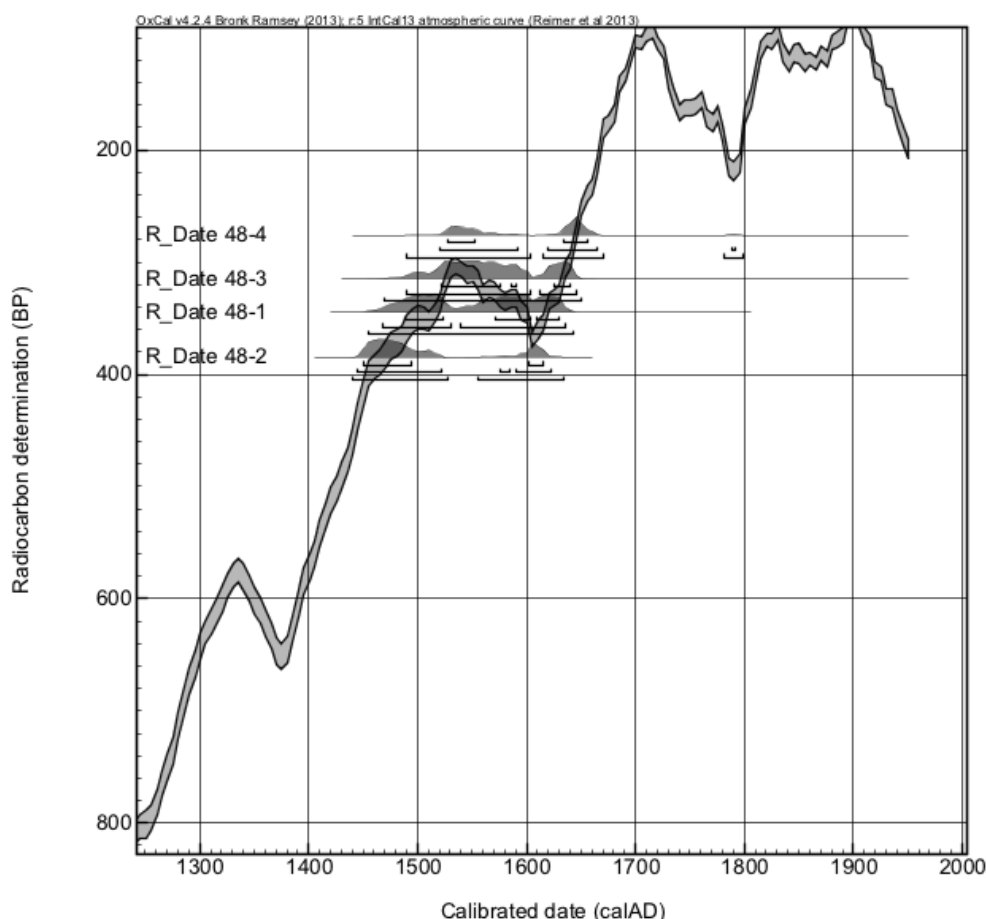


Fig. 3. IntCal 13 Calibration Curve.

In 1538 the Ottomans occupied the entire territory of Moldavia but soon after, according to a Ottoman document, they suddenly attacked and burned the town of Iași²¹ and at the beginning of October 1538 they have left the country²². The southern area, Bugeac and Tighina/Bender became an Ottoman raya and were colonized with Tatars. The moment marked the end of first period of Petru Rareș's ruling as a woiewod and the beginning of the

¹⁸ Cronici turcești I, 227-228.

¹⁹ Cronicile slavo-române, 98-102, 184; Cronici turcești I, 268; Gemil 1978, 156.

²⁰ Cronici turcești I, 225, 228; Gemil 1978, 157-158.

²¹ Cronici turcești I, 268.

²² Gorovei 1978, 165.

early Ottoman rule over Moldavia²³. In this whirlwind of events may be included the Ottoman presence in Moldavia. They participated in numerous plunder activities and to what has been called the “blood tribute”²⁴.

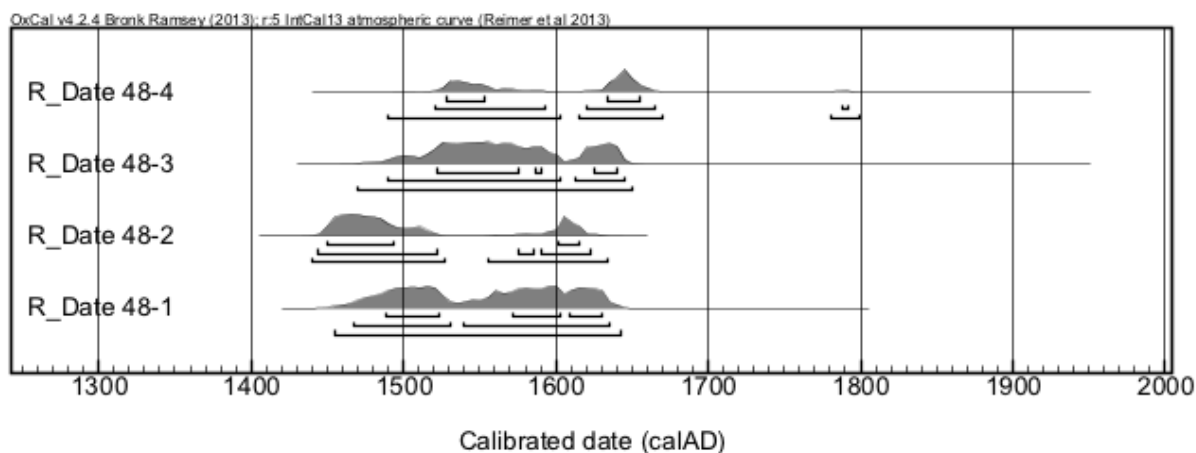


Fig. 4. Calibrated date.

According to these inferences can be drawn a history of the dramatic circumstances happened in eastern Moldavia toward the mid of the 16th century. However, in the absence of any artefacts associated with the skeletal remains, the funerary context can not be dated very safely²⁵. The characters of this drama are represented by the local inhabitants who were probably victims of the events of that period. According to this working hypothesis we do not exclude that the human remains have belonged to some soldiers²⁶ involved in this cloudy situation. They have no clothes or footwear, they missed hands and foot bones and many skulls were obviously separated from the rest of the body. After a perimortem time they were buried in uncertain conditions. The statement is supported by the dimension of the funerary area, the deposition of the bone remains, the absence of the funerary inventory, the precarity of the entire mass-grave.

The absence of any funerary ritual, personal objects of deceased used in a burial ceremony and lack of evidences of pathological death are strong evidences to sustain this hypothesis. Moreover, the presence of many large blade injuries on their skulls and their large numbers indicate that the victims were effectively involved in the fight, and the weapons that produced these injuries were easy to handle. The large number of victims, at least 206, and the evidence that most of the examined bones belong to men indicate a battle involving at least 500 combatants equipped with sharp objects and firearms. Healed injuries are evidence that some of the victims were involved in previous battles and suffered the same type of blade wounds long before their death and burial in Horlești. On this basis of evidences Military Prosecutor's Office Iași, by ordinance 295/P/2015/16.05.2016²⁷, closed the case Horlești, regarding war as an unincriminated fact under the Penal Code.

²³ Gemil 1978, 158; Gorovei 1978, 164.

²⁴ Gorovei 1978, 173.

²⁵ Forsom et al. 2017, 13.

²⁶ In some cases, individuals have traces of older wounds that have been healed like at M142, M152. See, Pl. 9.

²⁷ Unpublished.

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WEB SOURCES:

Atlas Explorer, <http://atlas.anpm.ro/atlas#>

Mass grave found in Dorset The Viking death squads who got a taste of their own medicine: Mass grave shows how the Anglo-Saxons hit back at invaders <http://www.dailymail.co.uk/sciencetech/article-2091401/Viking-death-squads-mass-grave-shows-Anglo-Saxons-hit-invaders.html#ixzz4l24ya9ut>



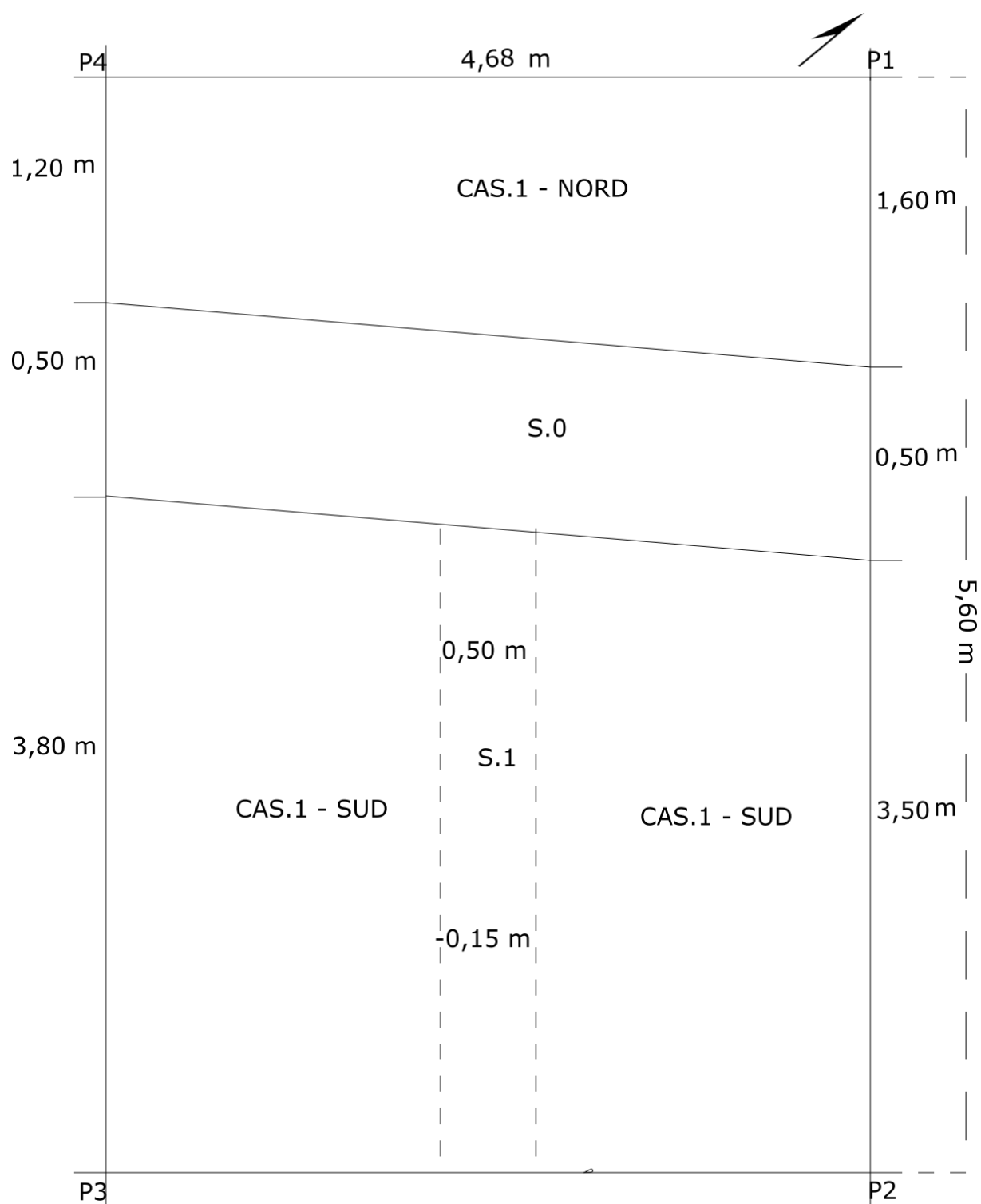
Pl. 1. The house and the funerary context damaged by a domestic trench.



Pl. 2. The location of the mass grave from Horlești-Hățaș village (Atlas Explorer 4.12.1013.72569, <http://atlas.anpm.ro/atlas#>)



Pl. 3. Horlești-Hățaș. The mass grave. View from the north.



Pl. 5. The projection of the archaeological unit.



Pl. 6. a-d. Samples of distorted crania.



Pl. 7. Dentition. Detail.



a



b

Pl. 8. Intermingled bones.



a

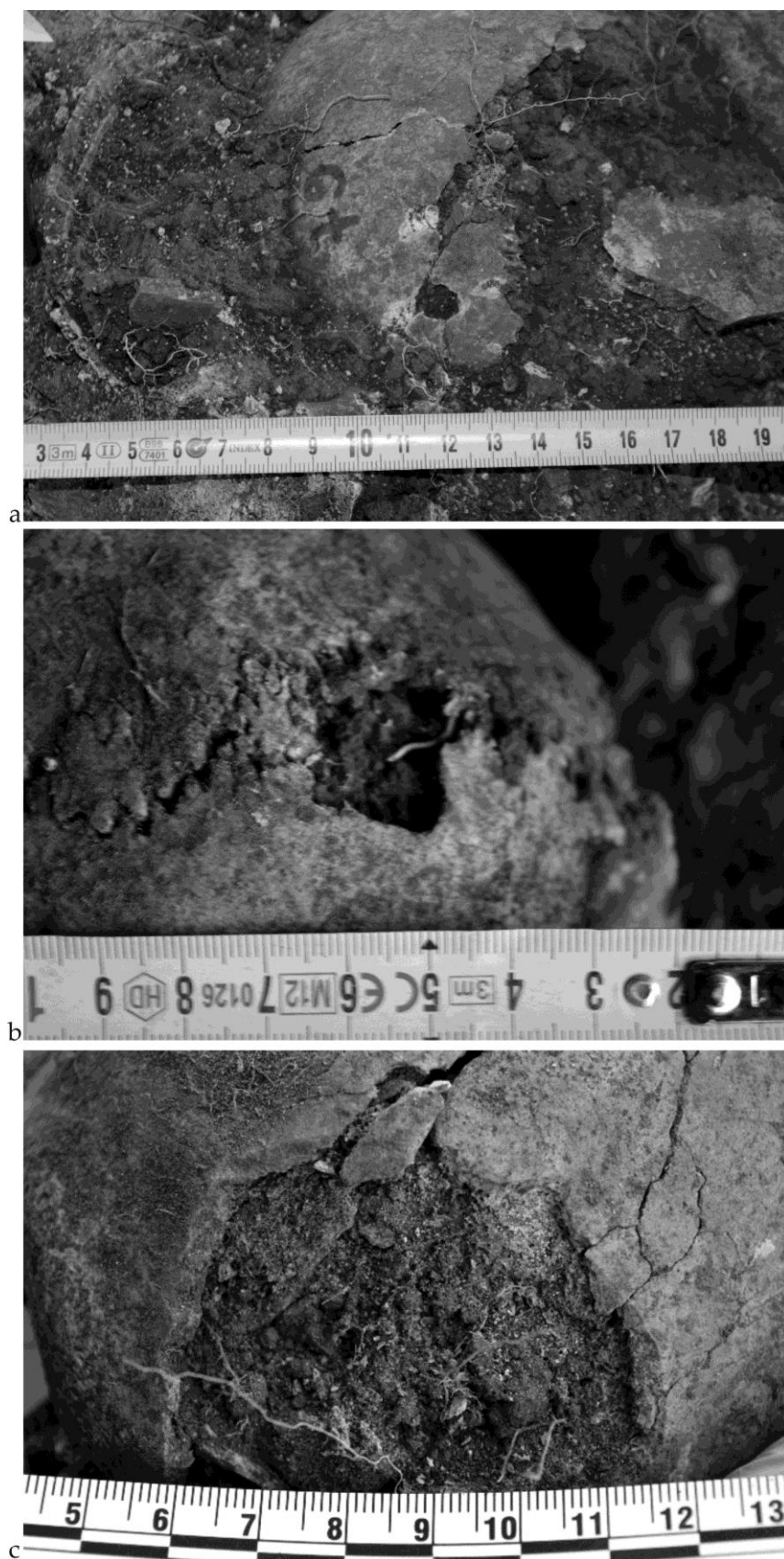


b

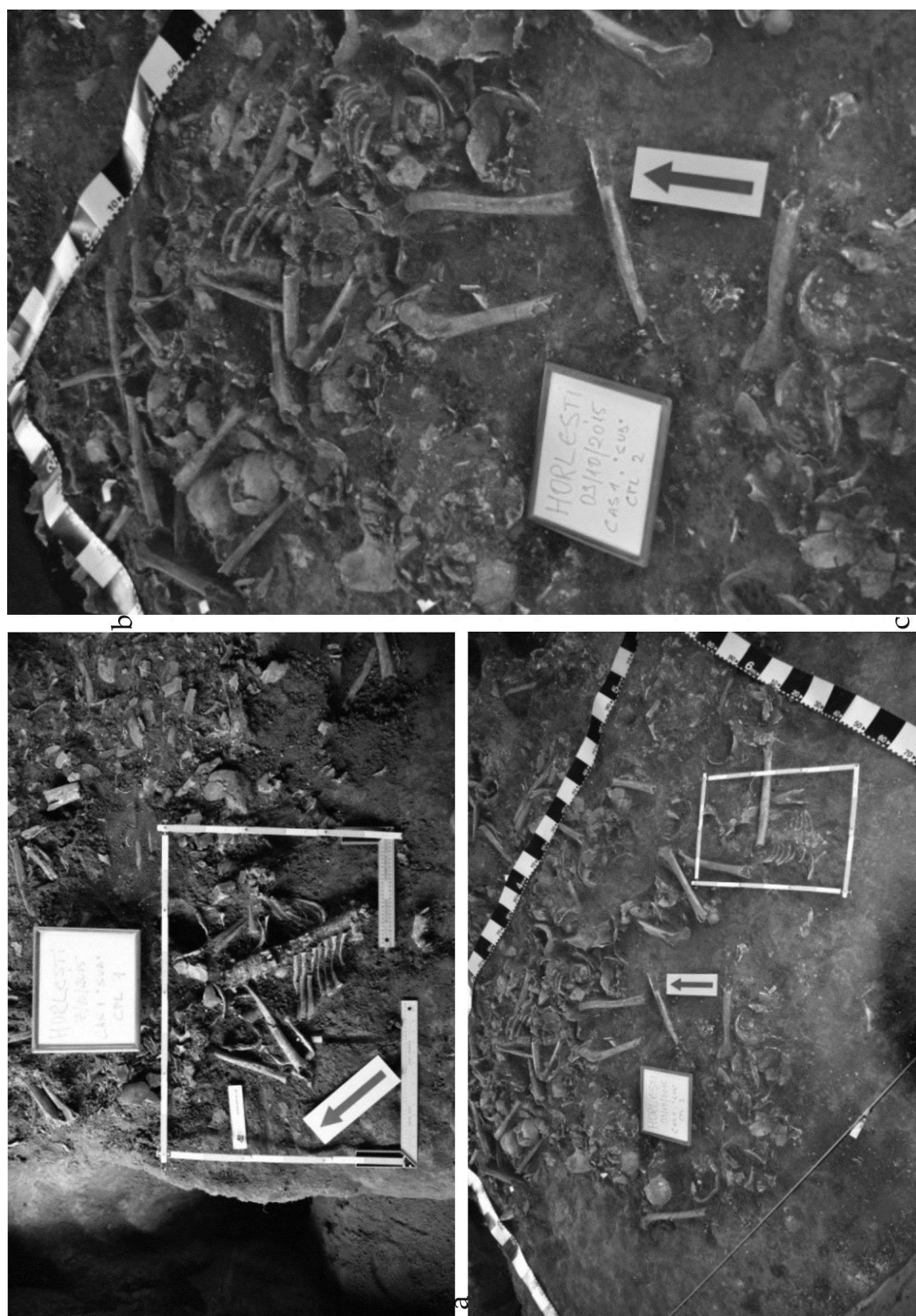
Pl. 9. Antemortem injuries: a. M142; b. M152.



Pl. 10. Perimortem injuries: a. M9; b. M27; c. M29; d. M58b; e. M119; f. M152; g. M166a; h. M202.



Pl. 11. Postmortem injuries: a. M79; b. M157d; c. M158.



Pl. 12. Samples of thoracic collapsed on-site.



Pl. 13. Collecting and depositing human bones.