ANTROPOLOŠKA ANALIZA SEŽGANIH OSTANKOV Z NAJDIŠČ POHORSKEGA PODRAVJA IN PREKMURJA

Jayne-Leigh Thomas

V raziskavo so bili zajeti žgani skeletni ostanki iz devetih najdišč.[1] Ostanki izvirajo iz različnih časovnih obdobij. Njihove analize so predstavljene v kronološkem zaporedju: Slivnica pri Mariboru[2] iz časa pozne bakrene in zgodnje bronaste dobe, tj. horizont Somogyvár – Vinkovci, Ptuj – Potrčeva ulica[3] iz časa pozne srednje bronaste dobe–zgodnje pozne bronaste dobe, tj. horizont Oloris – Podsmreka, Pobrežje v Mariboru[4], Ruše II[5], Gračič pod Brinjevo goro[6] in Miklavž na Dravskem polju[7] iz časa mlajše kulture žarnih grobišč ter Rogoza pri Mariboru[8] in Za Raščico pri Krogu pri Murski Soboti[9] iz časa starejše železne dobe. Vsi skeletni ostanki so bili zbrani in analizirani na Oddelku za arheologijo Univerze v Ljubljani.

METODE

Analize vseh žganih skeletnih ostankov so bile opravljene skladno z uveljavljenimi metodološkimi postopki.[10] Z uporabo sit z odprtinami velikosti 10 mm, 5 mm in 2 mm so bile predhodno očiščene kosti razdeljene v velikostne razrede, na osnovi katerih je bila ocenjena njihova razlomljenost. Po določitvi teže vsakemu izmed velikostnih razredov so bile kosti razvrščene glede na pripadnost določenemu skeletnemu elementu. Vsak odlomek je bil posebej pregledan, pri čemer so bile zabeležene informacije za oceno starosti, spola, patoloških sprememb in poškodb, vzorec razpok, barva ter stanje ohranjenosti. Odlomki posameznih skeletnih elementov so bili stehtani in njihova teža primerjana s težo celotnega zbira žganih kosti. Rezultati primerjave tako omogočajo oceno razlomljenosti in odstotkovne zastopanosti določljivih skeletnih elementov, ki lahko nadalje služita pri

1 Večji del podatkov prihaja iz avtoričine doktorske disertacijie (Thomas 2011).
2 Tica 2021 (v tisku).
3 Jevremov 1988–1989.
4 Pahič 1972; isti 1991; glej tu Koprivnik, Pobrežje.
5 Pahič 1957; Črešnar 2006.
6 Pahič 1988–1989; glej tu Koprivnik, Gračič.
7 Črešnar, Murko 2014.
8 Črešnar 2014; isti 2021 (v tisku); glej tu Črešnar, Rogoza.
9 Sankovič, Šavel 2010; Jereb, Sankovič, Šavel 2014.
10 McKinley 1989, 65; isti 1993, 283; isti 1994, 5; McKinley, Roberts 1999, 7–8; McKinley 2004, 9–13.

ANTHROPOLOGICAL ANALYSIS OF CREMATED HUMAN REMAINS FROM POHORSKO PODRAVJE AND PREKMURJE

Jayne-Leigh Thomas

The remains from nine sites were analyzed as a part of this research.[1] They belong to different periods and are presented in chronological order. These sites are Slivnica near Maribor[2], from the Late Copper Age–Early Bronze Age, i.e. the Somogyvár - Vinkovci horizon, Ptuj – Potrčeva ulica[3], from the Late Middle Bronze Age–Early Late Bronze Age, i.e. Oloris - Podsmreka horizon, Pobrežje near Maribor[4], Ruše II[5], Gračič below Brinjeva gora[6], Miklavž na Dravskem polju[7], from the Late Urnfield Period and Rogoza near Maribor[8], and Za Raščico near Krog near Murska Sobota[9], dated to the Early Iron Age. All remains were brought to the Department of Archaeology at the University of Ljubljana for analysis.

METHODS

Standard methods for analyzing cremated remains were utilized in all studies.[10] After initial cleaning, bones were sorted, then passed through a stack of sieves with mesh sizes of 10 mm, 5 mm, and 2 mm, allowing for the degree of bone fragmentation to be assessed. After being weighed by size collection, the bones were then sorted into categories based on specific skeletal element. Each fragment was assessed and any information regarding age, sex, pathologies, trauma, fracture patterns, coloration, and condition was recorded. The weight of each skeletal element category was taken and the overall weight of identified bone was compared with that of the total cremation weight. This provides an indication of the degree of fragmentation in addition to the percentage of bone, which was identifiable and may be used to indicate any potential bias in which areas of the body were

1 Most data comes from the author's doctoral dissertation (Thomas 2011).
2 Tica 2021 (in print).
3 Jevremov 1988–1989.
4 Pahič 1972; id. 1991; see here Koprivnik, Pobrežje.
5 Pahič 1957; Črešnar 2006.
6 Pahič 1988–1989; see here Koprivnik, Gračič.
7 Črešnar, Murko 2014.
8 Črešnar 2014; id. 2021 (in print); see here Črešnar, Rogoza.
9 Sankovič, Šavel 2010; Jereb, Sankovič, Šavel 2014.
10 McKinley 1989, 65; id. 1993, 283; id. 1994, 5; McKinley, Roberts 1999, 7–8; McKinley 2004, 9–13.

prepoznavanju morebitne pristranskosti pri zbiranju skeletnih ostankov iz grmade za pokop.[11] V primeru prisotnosti živalskih kosti so bile le-te razvrščene glede na pripadnost skeletnemu elementu ter, če je bilo mogoče, živalski vrsti. Zooarheološka identifikacija je bila opravljena ob pomoči raziskovalcev iz Inštituta za arheologijo Znanstvenoraziskovalnega centra Slovenske akademije znanosti in umetnosti.

Metodološki postopki za oceno starosti, spola in patoloških sprememb oseb so sledili uveljavljenim osteološkim standardom Buikstre in Ubelakerja, Byersa, Steelea in Brambletta, van Beeka in Bassa.[12] Opozoriti velja, da četudi ocene starosti in spola sežganih oseb temeljijo na enakih metodah kot ocene inhumiranih oseb, je za osteologa vzpostavitev demografske strukture na osnovi kremacij izredno zahtevna naloga. Demografska struktura namreč temelji na prisotnosti spolno dvoličnih ali s starostjo spreminjajočih se morfoloških značilnosti skeleta, ki so med sežigom močno spremenjeni in/ali poškodovani.

Tako kot zaključen/nezaključen razvoj zobnih korenin, degeneracija kosti in zraščeni ali nezraščeni okrajki (*epiphysis*) tudi velikost kosti lahko pripomore k vzpostavitvi grobe ocene starosti osebe, a le v primeru, da je pripadnost obravnavanega odlomka določenemu skeletnemu elementu jasna. Odlomki lobanje so pogosto ohranjeni skupaj z lobanjskimi šivi, stopnja zraščenosti katerih omogoči grobo oceno starosti.[13] Gejvall sicer opozarja, da je določanje starosti sežgane osebe na osnovi zobnih korenin, debeline lobanjskih kosti, zraščenosti lobanjskih šivov in teže celotnega zbira žganih kosti po dopolnjenem 21. letu nezanesljivo.[14] Posledično je osteolog pogosto primoran k uporabi izrazov, kot so »odrasel«, »mladostnik« ali »neznano«, odvisno od prisotnih odlomkov kosti, ocene starosti odraslih posameznikov pa nemalokrat predstavljajo široki in prekrivajoči se starostni razponi.[15]

REZULTATI

Slivnica[16]

Dva žgana grobova, grob 12 in 13, izvirata iz Slivnice (*Pril. 1*). Grob 12 je vseboval necelovito ohranjene žgane skeletne ostanke dveh oseb. Ena izmed oseb je bila verjetno mladostnik, mlajši od 14 let, medtem ko je bila druga oseba odrasla, starejša od 20 let. Skeletni ostanki odrasle osebe morda pripadajo ženski, vendar ni moč izključiti, da odlomek z gracilnimi

[11] McKinley 1989, 68.
[12] Buikstra, Ubelaker 1994; Byers 2002; Steele, Bramblett 1988; van Beek 1983; Bass 1995.
[13] Buikstra, Ubelaker 1994, 32.
[14] Gejvall 1969, 473.
[15] McKinley 2008, 172.
[16] Tica 2021 (v tisku).

extracted specifically from the pyre for burial.[11] If present, animal bones were categorized to a specific skeletal element and then possibly to a specific animal. Many of the zooarchaeological identifications were determined with assistance from researchers at the Archaeological Institute of the Scientific Research Centre, Slovenian Academy of Sciences and Arts.

Methods of recording and assessing the age, sex, and pathology of the individual are based on the osteological standards proposed by Buikstra and Ubelaker, Byers, Steele and Bramblett, van Beek, and Bass.[12] Although the age and sex of a cremated individual is obtained using the same methods as for unburned individuals, assessing demographics based on cremated remains can be a daunting task for the osteologist, as the determination depends on the presence of sexually dimorphic or age-defining morphological characteristics within the assemblage, which are severely altered and/or damaged during cremation.

As with unclosed/closed tooth roots, bone degeneration, and fused or unfused epiphyseal ends, the size of bones can also provide a generalized age range for an individual, provided that the fragment can be identified to a specific skeletal element. Skull fragments often survive with joining cranial sutures; the degree of openness can provide an estimate range of age.[13] Gejvall states that when determining the age of a cremated individual, after using tooth roots, cranial vault thickness, degree of sutural obliteration, and weight of the sample to its volume, it is dangerous to attempt a determination of age over 21 years old.[14] As such, the osteologist is often forced to use terms such as 'adult', 'juvenile', or 'unknown', depending on which fragments are available for analysis and adult age range can end up being very broad and overlapping.[15]

RESULTS

Slivnica[16]

Two cremation graves, Grave 12 and 13, were analyzed from Slivnica (*App. 1*). The Grave 12 cremation contained the incomplete remains of two individuals. One individual appears to be an adolescent, younger than 14 years of age; the other individual is an adult over 20 years. It is possible that this adult individual may be a female; however, the bone fragment with

[11] McKinley 1989, 68.
[12] Buikstra, Ubelaker 1994; Byers 2002; Steele, Bramblett 1988; van Beek 1983; Bass 1995.
[13] Buikstra, Ubelaker 1994, 32.
[14] Gejvall 1969, 473.
[15] McKinley 2008, 172.
[16] Tica 2021 (in print).

lastnostmi ne pripada mladostniku. Obarvanost in vzorci razpok na odlomkih kažejo na enakomerno izpostavitev celotnega telesa zmerno visokim temperaturam, in sicer kmalu po smrti. Na prstnici noge mladostnika so bili prisotni znaki zaceljenega zloma, medtem ko je bila na zunanji površini ene izmed zapestnic vidna nova tvorba kosti, verjetno posledica nespecifičnega vnetja ali zaceljenega zloma.

Ocena starosti osebe v grobu 13 ni bila mogoča. Zaobljeni robovi očnice (*os orbitale*) kažejo na skelet moškega, vendar je zaradi pomanjkanja drugih znakov spolne dvoličnosti določitev potrebno razumeti z mero previdnosti. Večina kosti je bila manjših od 5 mm, kar kaže na majhno do srednjo velikost odlomkov in njihovo slabo do zmerno ohranjenost. Kosti so bile izpostavljene visokim temperaturam nad 645 °C, prisotni pa so bili le deli lobanje in okončin. Vzorci razpok na odlomkih so skladni s sežigom kosti ob prisotnosti mehkega tkiva.

Ptuj – Potrčeva ulica[17]

Žgani skeletni ostanki iz groba 1 iz Potrčeve ulice na Ptuju (*Pril. 1)* kažejo na sežig osebe pri konstantno nizkih temperaturah. Prisotni vzorci razpok kažejo na sežig takoj po smrti, in sicer s prisotnim mehkim tkivom. Skupna teža odlomkov kosti iz groba priča, da je bil za pokop zbran le majhen del skeletnih ostankov osebe. Na nobenem izmed odlomkov ni bilo ohranjenih morfoloških značilnosti za oceno starosti ali spola. Prav tako na odlomkih ni bilo opaziti patoloških sprememb ali znakov poškodb, ki bi omogočili ugotovitev vzroka smrti.

Pobrežje[18]

Iz dvainsedemdesetih grobov iz Pobrežja je bilo analiziranih sedeminsedemdeset vzorcev/oseb[19] (*Pril. 1*). Starost je bilo mogoče oceniti dvainšestdesetim izmed sedeminsedemdesetih oseb.

V grobu 1 so prisotni odlomki lobanje debeline med 3,5 mm in 5 mm. Debelina izključuje, da gre za dojenčka ali otroka, ter kaže na odraslo osebo.

V grobu 3 so prisotni odlomki lobanje debeline 5 mm, kar kaže na odraslo osebo.

V grobu 14 prisotna proksimalna prstnica z zraščenim kostnim okrajkom kaže na osebo, starejšo od 14 let. Poleg tega je bil v grobu prisoten odlomek zraščenega črevničnega grebena (*crista iliaca*), ki priča o osebi, ki je bila v času smrti starejša od 16 let.

[17] Jevremov 1988–1989.

[18] Pahič 1972; isti 1991; glej tu Koprivnik, Pobrežje.

[19] V nekaterih grobovih je bil prisoten več kot en zbir kosti, kar smo razumeli kot dva vzorca.

the gracile features may also belong to the juvenile individual. The coloring and fracturing of the bones indicate that the remains were burned evenly at moderate temperatures and were likely burned soon after death. The juvenile individual has a foot phalanx which shows signs of a healed fracture and a wrist bone with exophytic bone growth, either due to a non-specific inflammation or healed fracture.

Age could not be determined for the individual from Grave 13. The individual may be a male as evidenced by the rounded orbital bone; however, as there are no other fragments from which sex could be ascertained, this determination must be used cautiously. The majority of the bones were smaller than 5 mm, indicating small to moderate fragment size and poor to adequate preservation. Bones were burned at high temperatures over 645°C and there are no other skeletal elements present except for cranial and limb bones. Fracture patterns are consistent with burning with flesh still attached.

Ptuj-Potrčeva ulica site[17]

The remains collected from Grave 1 at Ptuj-Potrčeva ulica site (*App. 1*) indicate burning at constant low temperatures. Fracture patterns present indicate burning directly after death, with flesh still attached. The weight of bone fragments recovered from the grave indicates only a small portion of the individual having been collected for burial. There were no fragments from which to accurately assess age or sex and there were no obvious pathologies or signs of trauma from which to ascertain an idea of the cause of death of the individual.

Pobrežje[18]

Seventy-seven samples/individuals[19] from 72 graves were analyzed from Pobrežje (*App. 1*). Age was determined for 62 out of 77 individuals.

Grave 1 had cranial fragments ranging in thickness from 3.5 mm to 5 mm; thickness suggests that the fragments are not from an infant or child, but are most likely from an adult individual.

Grave 3 contained cranial fragments with a thickness of 5 mm, which indicates an adult individual.

From Grave 14, there was a fused proximal end of a distal phalanx, providing an age of 14+ years. There was also a fragment of the fused iliac crest, indicating that the individual was at least 16 years of age at death.

[17] Jevremov 1988–1989.

[18] Pahič 1972; Pahič 1991.

[19] From some of the graves we had more than one collection of bones, which we had interpreted as two samples.

V grobu 26 prisoten distalni del koželjnice z zraščenim kostnim okrajkom kaže na osebo, starejšo od 15 let, medtem ko odlomek vretenca z zraščenim obročem govori o starosti nad 20 let.

V grobu 27 prisoten stalni zgornji prvi ličnik kaže na osebo, starejšo od 15 let. Debelina odlomkov lobanje iz groba je med 5 mm in 6 mm, kar govori o odrasli osebi. Na enem izmed odlomkov medenice je ohranjen del sklepne školjke (*facies auricularis*) z gladko površino in finozrnato teksturo, značilno za osebe, stare 21–30 let.

V grobu 32 sta prisotna dva odlomka dolge kosti, proksimalni del koželjnice in distalni del nadlahtnice z zraščenimi kostnimi okrajki, ki kažeta na osebo, starejšo od 13 let. Poleg tega je bil v grobu prisoten distalni del stopalnice z zraščenim okrajkom, ki govori o starosti nad 14 let.

V grobu 36 je prisotnih več odlomkov, ki omogočajo vzpostavitev ocene starosti v času smrti. Odlomek spodnje čeljustnice z ohranjenima trnoma (*spinae mentalis*) in povsem razvitimi zobnicami vseh štirih spodnjih sekalcev kaže na osebo, starejšo od 12 let. Poleg tega so bili prisotni distalni del nadlahtnice z zraščenim okrajkom, ki priča o starosti nad 13 let, ter distalni del dlančnice ali stopalnice in distalni del druge stopalnice z zraščenimi okrajki, ki govorita o starosti nad 14 let. Prisotna distalna dela podlahtnice in koželjnice z zraščenima okrajkoma kažeta na starost nad 15 let, na osnovi debeline odlomkov lobanje pa je mogoče soditi, da gre za odraslo osebo.

Odlomki lobanje v grobu 39 so debeli 3–4 mm. Debelina izključuje, da gre za dojenčka ali otroka, ter kaže na odraslo osebo.

V grobu 55 je oceno starosti v času smrti omogočila ena kost, in sicer proksimalni del koželjnice z zraščeno glavo, ki govori o osebi, starejši od 13 let.

V grobu 57 sta k oceni starosti pripomogla dva odlomka dolgih kosti. Proksimalni del proksimalne prstnice roke z zraščenim okrajkom kaže na starost nad 14 let, medtem ko proksimalni del stegnenice z zraščeno glavo govori o osebi, starejši od 15 let. Poleg tega prisotni odlomki lobanje kažejo na odraslo osebo.

Distalni del nadlahtnice z zraščenim okrajkom iz groba 59 govori o osebi, starejši od 15 let.

Iz groba 63 izvirata dva vzorca. Na osnovi robustnosti odlomka debla nadlahtnice in velikosti odlomka glave stegnenice vzorec 63(1) predstavlja odraslo osebo. V vzorcu 63(2) prisotni odlomki lobanje debeline 3–4 mm izključujejo dojenčka ali otroka in kažejo na odraslo osebo.

V grobu 68 prisoten odlomek zgornje čeljustnice z ohranjeno zobnico sekalca kaže na osebo, starejšo od 11 let. Odlomek proksimalnega dela podlahtnice

Grave 26 contained the fused distal end of a radius, which gives an age of 15+ years and a vertebral fragment with a fused epiphyseal ring, indicating 20+ years of age.

Grave 27 contained one permanent maxillary 1st premolar, suggesting an age of 15+ years. Cranial fragments from this grave are 5–6 mm thick, indicating an adult individual. On one of the pelvic fragments, the auricular surface is present; it is smooth with a fine granular texture, typical of an individual in the age range of 21–30 years of age.

Grave 32 included two long bone fragments, the proximal end of the radius and the distal end of the humerus, which are fused and provide an age of 13+ years. There is also the distal end of a metatarsal which is fused, indicating an age of 14+ years.

There are several bone fragments from which to establish an age at death from Grave 36. There is a fragment of the mandible with the mandibular spines and the completely formed sockets of the four mandibular incisors, which provides an age of 12+ years. There is a fused distal end of a humerus indicating 13+ years and the distal end of a metacarpal or metatarsal and the distal end of the 2nd metatarsal which is fused, giving an age of 14+ years. Both the fused distal ends of an ulna and radius are present, providing an age of 15+ years and judging from the thickness of the cranial fragments, this is an adult individual.

The cranial fragments from Grave 39 measure 3–4 mm thick; these fragments are most likely from an adult individual and it is clear they are not from an infant or child.

Grave 55 produced one bone from which age at death could be determined; this is a fused radial head, indicating an age of 13+ years.

From Grave 57, there are two long bone fragments from which to determine age. There is a fused proximal end of a proximal hand phalanx, indicating an age of 14+ years and a fused femoral head, indicating 15+ years of age. Cranial fragments are indicative of an adult individual.

The fused distal end of the humerus was present in Grave 59, providing an age of 15+ years.

There were two samples taken from Grave 63. Sample 63(1) was determined to be an adult individual, based on the robusticity of the humerus shaft fragment and the size of the femoral head fragment. Sample 63(2) contains cranial fragments 3–4 mm in thickness; these fragments are most likely from an adult individual and it is clear they are not from an infant or child.

Grave 68 contained one fragment of the maxilla with a single root socket from an incisor. This

z zraščenim okrajkom kaže na starost nad 13 let. Manjši odlomek zraščene sklepne ponvice lopatice (*cavitas glenoidalis*) govori o starosti nad 17 let, medtem ko odlomek vretenca z zraščenim obročem (*epiphysis anularis*) priča o starosti nad 20 let.

Lobanjske kosti v grobovih 70 in 76 so izredno tanke, s povprečno debelino 1,5 mm in številnimi odlomki, tanjšimi od 1 mm. Na osnovi njihove krhkosti in debeline je verjetno, da gre za ostanke dojenčka. Zaradi odsotnosti drugih kosti, ki bi lahko pripomogle k oceni starosti, natančnejša določitev starosti ob smrti ni mogoča.

V grobu 72 sta prisotna dva odlomka dolgih kosti, in sicer distalni del nadlahtnice in podlahtnice z zraščenima okrajkoma, ki govorita o osebi, starejši od 13 oz. 15 let.

Ocena starosti osebe iz groba 73 je bila vzpostavljena na osnovi distalnega dela stopalnice z zraščenim okrajkom ter debeline odlomkov lobanje. Stopalnica govori o osebi, starejši od 14 let.

Osebi iz grobov 78 in 79 sta bili verjetno odrasli, o čemer pričajo morfološke lastnosti ohranjenih odlomkov kolčne ponvice (*acetabulum*) ter velikost odlomkov debla dolgih kosti.

V grobu 81[20] je prisoten odlomek črevnice (*os ilium*) z gladko in finozrnato površino sklepne školjke, ki je značilna za osebe stare med 21 in 30 let. Poleg tega je bil prisoten odlomek vretenca z zraščenim obročem, ki govori o starosti nad 20 let.

V grobu 84 je prisoten proksimalni del koželjnice z zraščenim okrajkom, skladen s starostjo nad 13 let. Poleg tega sta bila prisotna tudi distalni del dlančnice ali stopalnice z zraščenim okrajkom, ki govori o starosti nad 14 let, ter proksimalni del nadlahtnice z zraščeno glavo, ki priča o starosti nad 16 let.

V grobu 85 sta prisotna dva odlomka dolgih kosti, proksimalni del podlahtnice in distalni del nadlahtnice z zraščenima okrajkoma, ki kažeta na osebo, starejšo od 13 let.

V grobu 86 je prisotnih več odlomkov, ki pripomorejo k oceni starosti. Distalni del nadlahtnice z zraščenim okrajkom kaže na starost nad 13 let, distalni del dlančnice z zraščenim okrajkom govori o starosti nad 14 let, distalni del koželjnice z zraščenim okrajkom priča o starosti nad 15 let, odlomek zraščene sklepne ponvice lopatice kaže na starost nad 17 let in odlomek vretenca z zraščenim obročem govori o osebi, starejši od 20 let.

Oseba v grobu 91 je bila verjetno odrasla, o čemer pričata debelina lobanjskih kosti ter velikost in morfologija dlančnic.

[20] Vrečka s kostmi je bila primarno označena kot grob 81-75d.

suggests an age of 11+ years. There is a fragment of the fused proximal end of an ulna, which suggest an age of 13+ years. There is one small fragment of a fused glenoid fossa suggesting an age of 17+ years and a vertebral fragment with a fused epiphyseal ring, indicating an age of 20+ years.

The cranial bones from Graves 70 and 76 were extremely thin, with an average thickness of 1.5 mm, and many less than 1 mm. From the friability and thickness of the cranial bones, the individual is likely to be an infant, however as no other bones are available from this grave from which to determine age, the age of this child could not be established more precisely.

Grave 72 has two long bone fragments, the fused distal end of a humerus and the fused distal end of an ulna, which provide ages of 13+ years and 15+ years, respectively.

The age of the individual from Grave 73 was established from the fused distal end of a metatarsal and the thickness of the cranial vault. The metatarsal places the individual at 14+ years.

The individuals from Grave 78 and 79 were determined to be adults based on the morphology of the acetabulum fragments and the size of the long bone shaft fragments.

From Grave 81[20], there was an ilium fragment with a smooth and fine-grained auricular surface, which is characteristic of an individual between 21 and 30 years of age. There was also a vertebral fragment with a fused epiphyseal ring, indicating an age of 20+ years.

Grave 84 contained the fused proximal end of an ulna, consistent with an age of 13+ years. There was the fused distal end of either a metacarpal or metatarsal, indicating an age of 14+ years and a fused humerus head providing an age of 16+ years.

There were two long bone fragments from Grave 85, which indicate an age of 13+ years; these bones are the fused proximal end of the ulna and the fused distal end of the humerus.

Grave 86 had several bone fragments from which age at death could be determined. There is a fused distal end of a humerus (13+ years), a fused distal end of a metacarpal (14+ years), a fused distal end of a radius (15+ years), a fragment of a fused glenoid fossa (17+ years), and a vertebral fragment with a fused epiphyseal ring (20+ years).

The individual from Grave 91 was interpreted as an adult based on cranial thickness and the size and morphology of the metacarpals.

[20] The bag containing the bones was originally labelled as Grave 81-75d.

V grobu 94 prisoten distalni del nadlahtnice z zraščenim okrajkom govori o osebi, starejši od 15 let. Poleg tega sta prisotna del zraščenega črevničnega grebena, ki priča o starosti nad 16 let, ter odlomek vretenca z zraščenim obročem, ki kaže na starost nad 20 let. Povprečna debelina lobanjskih kosti znaša 5 mm in prav tako kaže na odraslo osebo.

Edini odlomek v pomoč pri oceni starosti osebe v grobu 96 izvira iz vzorca 96(1), in sicer gre za distalni del dlančnice ali stopalnice z zraščenim okrajkom, ki govori o starosti nad 14 let.

Iz groba 97 izvirata dva vzorca. V vzorcu 97(1) prisoten proksimalni del proksimalne prstnice roke z zraščenim okrajkom govori o osebi, starejši od 14 let, medtem ko odlomek vretenca z zraščenim obročem kaže na starost nad 20 let. V vzorcu 97(2) je prisoten osrednji del telesa ledvenega vretenca. Četudi zaradi poškodovanosti odlomka obroč ni ohranjen, velikost in razvitost kažeta na odraslo osebo.

V grobu 98 prisoten distalni del nadlahtnice z zraščenim okrajkom govori o starosti nad 13 let. Glede na debelino ohranjenih lobanjskih kosti je mogoče soditi, da gre za odraslo osebo.

V grobu 101 je prisotnih več odlomkov, ki pripomorejo k oceni starosti v času smrti. Proksimalni in distalni del nadlahtnice z zraščenima okrajkoma kažeta na starost nad 13 oz. 15 let. Distalni del stegnenice in mečnice z zraščenima okrajkoma kažeta na osebo, starejšo od 16 let.

V grobu 106 dva odlomka omogočata oceno starosti v času smrti. Proksimalni del prstnice z zraščenim okrajkom kaže na starost nad 14 let, medtem ko distalni del stegnenice z zraščenim okrajkom govori o starosti nad 16 let. Prisotna sta tudi levi in desni čolnič (*os naviculare*), morfološka razvitost katerih priča o odrasli osebi.

Edini odlomek, uporaben za oceno starosti osebe v grobu 107, je distalni del dlančnice z zraščenim okrajkom, ki se običajno zaraste po 14. letu.

V grobu 109 je prisoten odlomek lobanje z ohranjenim in deloma zraščenim lobanjskim šivom, kar je značilno za odrasle osebe.

V grobu 111 so prisotni z deblom zraščeni leva in desna glava koželjnice ter distalni del nadlahtnice z zraščenim okrajkom, ki kažejo na starost nad 13 let.

V grobu 112 je prisoten odlomek zgornje čeljustnice, ki ima na desni strani povsem ohranjene štiri zobnice prvega in drugega sekalca, podočnika ter prvega ličnika, kar kaže na starost nad 15 let. Poleg tega je prisoten odlomek lobanje z ohranjenim in odprtim lobanjskim šivom, značilnim za mlado odraslo osebo.

Grave 94 had the fused distal end of a humerus which provides a minimum age of 15+ years. There was also a fragment of the fused iliac crest, indicating 16+ years, and a vertebral fragment with a fused epiphyseal ring, providing an age of 20+ years. The average cranial thickness of 5 mm also indicates an adult.

The only bone from Grave 96 from which age at death could be determined and came from the sample 96(1) is the fused distal end of either a metacarpal or metatarsal, which suggests an age of 14+ years.

There were two samples taken from Grave 97. Sample 97(1) had the fused proximal end of a proximal hand phalanx indicating an age of 14+ years, and a fragment of a vertebra with fused epiphyseal ring indicating 20+ years of age. Sample 97(2) contained the centrum of a lumbar vertebra; although there is no epiphyseal ring present due to damage, the individual is interpreted as an adult based on the size and development of the bone.

There is one fused distal end of the humerus from Grave 98, providing an age of 13+ years. This individual is also considered an adult based on the thickness of the cranial vault fragments.

Several bone fragments from Grave 101 have features from which age at death could be estimated. There is a fused distal and proximal end of a humerus, which provides ages of 13+ years and 15+ years, respectively. The fused distal end of the fibula and the fused distal end of the femur both suggest an age of 16+ years for this individual.

There are two fragments from Grave 106 from which the age at death could be determined. There is a fused proximal phalanx indicating 14+ years and a fragment of the fused distal femur indicating 16+ years. Both the left and right naviculars are also present which are morphologically developed like an adult.

The only bone from Grave 107 from which to determine age was the distal end of a fused 2nd metacarpal, which fuses at 14+ years of age.

From Grave 109, there is one fragment with a cranial suture, which is moderately closed, typical of an adult individual.

Grave 111 contained the right and left fused radial heads and the fused distal end of a humerus; all three of these bone fragments indicate an age of 13+ years.

From Grave 112, there is a maxilla fragment with four complete tooth sockets from the right side; these are the 1st and 2nd incisors, the canine, and the 1st premolar which all give an age of 15+ years. There

V grobu 113 so prisotni trije odlomki, ki omogočajo oceno starosti. Proksimalni del podlahtnice, distalni del stopalnice in proksimalni del nadlahtnice z zraščenimi okrajki kažejo na osebo, starejšo od 13, 14 oz. 16 let.

Oseba iz vzorca 117(2) iz groba 117 je bila najverjetneje novorojenček ali dojenček, saj so kosti izredno tanke. Ob odsotnosti drugih, s starostjo povezanih morfoloških lastnostih, natančnejša ocena ni mogoča.

V grobu 120 so prisotni odlomki lobanje debeline 4 mm. Debelina izključuje, da gre za dojenčka ali otroka, ter kaže na odraslo osebo.

V grobu 122 prisotni odlomki lobanje z zabrisanimi lobanjskimi šivi kažejo na starejšo odraslo osebo.

V grobu 134 je prisotnih več odlomkov, ki omogočajo oceno starosti. Trije odlomki distalnih delov stopalnic z zraščenimi okrajki kažejo na starost nad 14 let. Distalni del koželjnice in proksimalni del stegnenice z zraščenima okrajkoma govorita o starosti nad 15 let, medtem ko proksimalni del nadlahtnice z zraščeno glavo kaže na starost nad 16 let. Glede na debelino lobanjskih kosti gre najverjetneje za odraslo osebo.

V grobu 135 prisotni distalni prstnici noge z zraščenima okrajkoma ter distalni del stopalnice z zraščeno glavo kažejo na starost nad 14 let. Povsem izrasel in razvit stalni spodnji drugi ličnik kaže na starost nad 15 let. Odlomek zraščenega črevničnega grebena govori o starosti nad 16 let. Nedokončno razvit stalni spodnji tretji kočnik priča o osebi, mlajši od 21 let. Poleg tega je prisoten povsem razvit čolnič, morfološki razvoj katerega se zaključi med 12. in 15. letom, odvisno od spola osebe. Na osnovi vseh navedenih znakov gre za osebo, staro 16–20 let.

Iz groba 137 izvirata dva vzorca. V vzorcu 137(1) sta prisotna distalni del nadlahtnice z zraščenim okrajkom, ki se zaraste po 13. letu, in odlomek distalnega dela koželjnice s prav tako zraščenim okrajkom, ki se zaraste po 15. letu. Prisoten je tudi proksimalni del nadlahtnice z zraščeno glavo, ki se zaraste po 16. letu, medtem ko odlomek vretenca z zraščenim obročem priča o starosti nad 20 let. V vzorcu 137(2) prisoten proksimalni del proksimalne prstnice (roke ali noge) z zraščenim okrajkom kaže na osebo, starejšo od 14 let.

Oseba v grobu 138 je najverjetneje novorojenček. Lobanjske kosti so v povprečju debele 1 mm in izredno krhke, kar otežuje rokovanje z njimi. Ob odsotnosti drugih s starostjo povezanih morfoloških lastnosti natančnejša ocena starosti ni mogoča.

V grobu 141 prisoten del stopalnice z zraščenim okrajkom kaže na starost nad 14 let. Poleg tega is also one vault fragment with an open cranial suture, characteristic of a young adult individual.

Grave 113 had three bone fragments from which to determine age. These are the fused proximal end of the ulna, the fused distal end of a metatarsal, and the fused proximal end of a humerus, which provide ages of 13+ years, 14+ years, and 16+ years, respectively.

The individual from the sample 117(2) from the Grave 117 was determined to be either a neonate or an infant, owing to the extremely thin nature of the bones; however, a more precise age cannot be determined owing to the absence of other age-related features.

Grave 120 contained cranial fragments with a thickness of 4 mm; these fragments are most likely from an adult individual and it is clear they are not from an infant or child.

Grave 122 had cranial fragments with obliterated cranial sutures, providing an age of 'old adult.'

Grave 134 had several bone fragments from which to determine age. There are three fused distal ends of metatarsals which provide an age of 14+ years. There is also the fused distal end of the radius and the fused proximal end of the femur, indicating an age of 15+ years and a fused humerus head, which fuses at 16+ years. This individual has also been determined to be an adult judging from the thickness of the cranial vault fragments.

From Grave 135, there were two distal foot phalanges and the fused distal head of a metatarsal, indicating an age of 14+ years. There is one erupted and fully formed permanent mandibular 2nd premolar which is complete at 15 years of age. There is a fragment of the fused iliac crest, indicating an age of 16+ years. There is one incomplete permanent mandibular 3rd molar, which means that the individual is younger than 21 years of age. There is also an adult-sized scaphoid, which becomes morphologically adult between 12 and 15 years of age, depending on the sex of the individual. Based on these age-related features, this individual can be placed at 16–20 years of age.

There were two samples taken from Grave 137. From sample 137(1), there is the distal end of a humerus, which fuses at 13+ years, and a fragment of a fused distal radius, which fuses at 15+ years. The fused left humerus head is present, which fuses at 16+ years and one vertebral fragment with a fused epiphyseal ring, providing a minimum age of 20+ years. Sample 137(2) has the fused proximal end of a proximal phalanx (hand or foot), indicating an age of 14+ years.

je prisotnih več odlomkov, večinoma delov dolgih kosti, s še nezraščenimi kostnimi okrajki, kar kaže na mladostnika. Vendarle odsotnost drugih s starostjo povezanih morfoloških lastnosti onemogoča natančnejšo oceno starosti. Tako je mogoče predpostaviti le, da je bila oseba v času smrti le nekoliko starejša od 14 let.

V grobu 144 so ohranjeni odlomki lobanje debeline 4 mm. Debelina izključuje, da gre za dojenčka ali otroka, ter kaže na odraslo osebo.

Poleg debeline lobanjskih kosti je starost v času smrti osebe iz groba 147 moč oceniti tudi na osnovi odlomka proksimalnega dela podlahtnice z zraščenim okrajkom, ki se zaraste po 13. letu.

V grobu 148 prisoten proksimalni del koželjnice z zraščenim okrajkom kaže na starost nad 13 let, medtem ko morfološko povsem razviti odlomki lobanje govorijo o odrasli osebi.

V grobu 153 so prisotni odlomki lobanje debeline 4 mm. Debelina izključuje, da gre za dojenčka ali otroka, ter kaže na odraslo osebo.

V grobu 156 prisoten proksimalni del medialne prstnice roke z zraščenim okrajkom omogoča oceno starosti nad 14 let. Odlomek distalnega dela koželjnice z zraščenim okrajkom ter zraščena sklepna ponvica lopatice pričata o starosti nad 15 oz. nad 17 let.

Edini prisoten odlomek v pomoč pri oceni starosti v času smrti osebe v grobu 164 je distalni del podlahtnice z zraščenim okrajkom, ki kaže na starost nad 15 let.

V grobu 171 je prisoten odlomek zgornje čeljustnice s tremi povsem razvitimi zobnicami sekalcev, razvoj katerih je običajno zaključen po 11. letu starosti. Čeprav je debelina lobanjskih kosti pod povprečjem odraslih, morfološka razvitost, velikost in oblika preostalih ohranjenih odlomkov vendarle pričajo o odrasli osebi.

V grobu 173 je prisoten proksimalni del proksimalne prstnice roke z zraščenim kostnim okrajkom, ki se zaraste po 14. letu. Prisoten je odlomek distalnega dela podlahtnice z zraščenim okrajkom, ki se zaraste po 15. letu. Poleg tega je prisoten z deblom zraščen odlomek glave ali nadlahtnice ali stegnenice, ki kaže na starost nad 15 let.

V grobu 175 so prisotni odlomki lobanje debeline 4–4,5 mm. Debelina izključuje, da gre za dojenčka ali otroka, ter kaže na odraslo osebo.

V grobu 177 so prisotni odlomki lobanje debeline 3–5 mm. Debelina izključuje, da gre za dojenčka ali otroka, ter kaže na odraslo osebo.

Na osnovi debeline lobanjskih kosti je mogoče soditi, da so bile osebe v grobovih 56, 75, 87, 108 in 139 odrasle.

The individual from Grave 138 was determined to be a neonate as the cranial bones have an average thickness of 1 mm; however, there are no other bone fragments from which a more accurate determination of age could be ascertained.

From Grave 141, there is one fused metacarpal, indicating an age of 14+ years. There are several bone fragments, especially long bones, with unfused epiphyses; such unfused areas would indicate a juvenile individual. However, none of the bone fragments could be assigned to a specific skeletal element, which would permit a better estimation of age. It is assumed that this individual was slightly over 14 years of age at the time of death.

Grave 144 contained cranial fragments with a thickness of 4 mm; thickness suggests that these fragments are not from an infant or child, but are most likely from an adult individual.

Aside from cranial thickness, the only bone from Grave 147 from which to estimate age at death was a fragment of the fused proximal end of an ulna, which fuses at approximately 13 years of age.

Grave 148 had only the fused proximal end of a radius, indicating an age of 13+ years, and morphologically adult cranial fragments from which age could be determined.

Grave 153 contains cranial fragments with a thickness of 4 mm; thickness suggests that these fragments are not from an infant or child, but are most likely from an adult individual.

Grave 156 contained a fused proximal end of a medial hand phalanx, which provides an age of 14+ years. There is also a fragment of a fused distal radius and a fused glenoid fossa fragment, providing ages of 15+ years and 17+ years, respectively.

The only bone fragment from which to establish an age at death for the individual from Grave 164 is a fragment of a fused distal ulna, indicating 15+ years of age at death.

Grave 171 contains a fragment of the maxilla with three completely formed incisor sockets. These sockets are fully formed at 11+ years. Although the thickness of the cranial bone fragments is smaller than average for an adult individual, the other remains are morphologically adult in size and shape.

From Grave 173, there is the fused proximal end of a proximal hand phalanx which fuses at 14+ years of age. There is one fragment of the distal end of an ulna, which fuses at 15+ years. There is also one fragment that is either from a fused humerus or femur head. This fragment provides an age of 15+ years.

Grave 175 contained cranial fragments with a thickness of 4–4.5 mm; thickness suggests that these

V vzorcu brez ohranjenega podatka o grobu iz Pobrežja[21] je prisotnih več odlomkov, ki omogočajo oceno starosti v času smrti. Distalni del nadlahtnice in proksimalni del koželjnice z zraščenima okrajkoma kažeta na starost nad 13 let. Distalni del tretje ali četrte dlančnice, distalna prva prstnica stopala, medialna prstnica in proksimalni del proksimalne prstnice z zraščenimi okrajki kažejo na starost nad 14 let. Z deblom zraščena glava stegnenice in distalni del podlahtnice z zraščenim okrajkom govorita o starosti nad 15 let. Z deblom zraščena glava nadlahtnice kaže na starost nad 16 let. Lobanjski odlomki so debeli približno 6 mm, kar kaže na odraslo osebo.

Zaradi odsotnosti s starostjo povezanih morfoloških lastnosti pri petnajstih izmed sedeminsedemdesetih vzorcih iz Pobrežja starosti ni bilo mogoče oceniti. Na osnovi debeline lobanjskih kosti so bile štiri osebe (grob 70, 76, 117(2) in 138) najverjetneje dojenčki. Glede na razvitost in morfološke lastnosti sklepne školjke je bila v dveh primerih (grob 27 in 81) starost ocenjena na 21 do 30 let. Oseba iz groba 122 je bila na osnovi zabrisanega lobanjskega šiva uvrščena med »starejše odrasle«. Starost ene izmed oseb (grob 135) je bila na osnovi zraščenega črevničnega grebena in še ne povsem razvitega stalnega tretjega spodnjega kočnika ocenjena na 16–20 let. Sedem oseb je morda odraslih (grob 1, 39, 63(2), 120, 144, 175 in 177), 12 oseb je »odraslih« (grob 3, 56, 63(1), 75, 78, 79, 87, 97(2), 108, 109, 139 in 153), medtem ko je triindvajsetim osebam (grob 14, 26, 32, 55, 59, 68, 72, 84, 85, 86, 96(1), 97(1), 101, 106, 107, 111, 113, 137, 137(2), 141, 156, 164 in 173) določena zgolj spodnja starostna meja. Preostalim dvanajstim osebam (grob 36, 57, 73, 91, 94, 98, 112, 134, 147, 148, 171 in vzorec brez konteksta) je bilo mogoče določiti zgolj najvišjo spodnjo starostno mejo ter jih uvrstiti med »odrasle«. Starost v času smrti je bila največkrat ocenjena na osnovi debeline lobanjskih kosti ter zraščenosti kostnih okrajkov. Zaradi odsotnosti s starostjo povezanih morfoloških lastnosti natančnejša ocena starosti dojenčkov ni bila mogoča.

Ob pomanjkanju skeletnih elementov s spolno dvoličnimi lastnostmi, ki bi lahko pripomogli k oceni spola, je bil spol ocenjen le štirim osebam. Ohranjen del črevnice (*os ilium*) z žlebom (*sulcus preauricularis*) v grobu 27 je omogočil oceno, da gre za žensko. Prisotnost ter globoka in ozka morfološka oblika te spolno dvolične lastnosti črevnice je namreč značilna za ženske. V grobu 36 je bil ohranjen odlomek čelnice (*os frontale*) z izrazitim nadočesnim obokom

[21] Vrečka s kostmi je bila označena kot grob 226, ki ne obstaja. Posledično kontekst kosti ostaja neznan.

fragments are not from an infant or child, but are most likely from an adult individual.

Grave 177 contained cranial fragments ranging from 3–5 mm; thickness suggests that these fragments are not from an infant, but are likely from an adult individual.

Remains from Graves 56, 75, 87, 108, and 139 were determined to be from adult individuals, judging by the thickness of the cranial vault fragments.

The sample from an unassigned grave from Pobrežje[21] contained several bone fragments from which the age at death could be determined. There is a fused distal end of a humerus and the fused proximal end of a radius, both of which fuse at approximately 13 years of age. There is a fused distal end of either metacarpal 3 or 4, a fused 1st distal phalanx of the foot, a fused medial phalanx, and a fused proximal end of a proximal phalanx. These bone fragments indicate an age of 14+ years. There is a fused head of a femur and a fused distal end of an ulna, which provide an age of 15+ years. A fused humerus head is also present indicating 16+ years of age. Cranial fragments from this individual are approximately 6 mm in thickness, indicating an adult individual.

There were 15 out of 77 samples from Pobrežje, which could not be assigned an age determination due to the absence of age-related features. There were four individuals (Graves 70, 76, 117(2), and 138) that were categorized as being infants based on the size and thickness of the cranial vault fragments. There were two individuals (Graves 27 and 81) aged between 21 and 30 years based on the development and condition of the auricular surface. The individual from Grave 122 was categorized as "older adult" based on an obliterated cranial suture. There was one individual (Grave 135) which was aged between 16–20 years based on the fused iliac crest of the pelvis and the incomplete development of the 3rd permanent mandibular molar. There are seven queried adults (Graves 1, 39, 63(2), 120, 144, 175, and 177), 12 'adult' individuals (Graves 3, 56, 63(1), 75, 78, 79, 87, 97(2), 108, 109, 139, and 153) and 23 individuals (Graves 14, 26, 32, 55, 59, 68, 72, 84, 85, 86, 96(1), 97(1), 101, 106, 107, 111, 113, 137, 137(2), 141, 156, 164, and 173) assigned a minimum age. The remaining 12 individuals (Graves 36, 57, 73, 91, 94, 98, 112, 134, 147, 148, 171 and the unassigned sample) were assigned a maximum minimum age and a description of 'adult'. Cranial

[21] The bag containing the bones was labelled as Grave 226, which however does not exist. Therefore, we have decided to leave the bones unassigned.

(*arcus superciliaris*) in zaobljenim zgornjim robom očnice (*margo supraorbitalis*), značilnima za moške. V grobu 81 ohranjen del črevnice kaže na odsotnost žleba. Glede na to, da je odsotnost žleba značilna za moške, je bila oseba verjetno moškega spola. Oseba v grobu 94 je bila najverjetneje moškega spola, o čemer priča ohranjeni del zatilnice (*os occipitale*) z izrazito in robustno zatilnično izboklino (*protuberancia occipitalis externa*).

Patološke spremembe so bile ugotovljene na skeletnih ostankih šestih oseb. Na robovih telesa ledvenega vretenca ene izmed oseb iz groba 26 so prisotni odrastki kostnine (*osteophytes*). Poroznosti ali spremembe oblike vretenca in s tem degeneracijskih sprememb hrbtenice zaradi poškodb ob izpostavitvi ognju ni bilo moč oceniti. Patološke spremembe na kosteh preostalih petih oseb zastopajo luknjičaste površine lobanjskih kosti in spremenljiva debelina gobaste kostnine lobanje (*diploë*), ki predstavljajo znake porotične hiperostoze. Odlomki lobanje iz groba 87 imajo luknjičaste površine in plasti nove, sklerotične kostnine. Odlaganje novih plasti kostnine in njihova sklerotična narava kažejo na obdobje celjenja. Lobanjske kosti iz grobov 26, 39 in 94 imajo luknjičaste površine, brez prisotnosti novih plasti lamelarne kostnine, kar kaže na aktivnost patoloških lezij v času smrti. Odlomki lobanje iz groba 101 imajo raznoliko debelo gobasto kostnino. Prisotnost luknjičaste površine kosti je mogoče povezati tudi z drugimi bolezenskimi znaki in ne zgolj s porotično hiperostozo. Za potrditev slednje morata biti namreč izpolnjena oba kriterija, luknjičaste površine kosti in odebelitev gobaste kostnine. Na prisotnih odlomkih sta vidni bodisi luknjičasta površina bodisi odebeljena gobasta kostnina, v nobenem primeru pa pojav sprememb ni sočasen.

Večina oseb iz tega najdišča je bila sežgana pri nizkih temperaturah 200–500 °C, pri čemer vzorci razpok na površini kosti pričajo o prisotnosti mehkega tkiva (*sl. 1A, 1B*). V grobovih 3, 14, 32, 36, 63(1), 80, 84, 86, 91, 96(2), 101, 102, 106, 108, 147, 148, 153, 171, 173, 175 in 177 so bile prisotne kosti rumeno-rjave, temno rjave in sive barve. Takšna obarvanost je značilna za nizke temperature, približno 200–500 °C, pri čemer počrneli robovi kosti izkazujejo občasen rahel dvig temperatur. Kosti v grobovih 19 in 27 so temno sive, modre in bele barve (500–> 645 °C). Takšna obarvanost je značilna za izpostavitev kosti visokim temperaturam nad 645 °C, saj se kosti pričnejo približevati popolni kalcinaciji. Kosti v grobu 76 so svetlo rumeno rjave in bele barve ter tako kažejo na izpostavitev temperaturam nad 645 °C. Hkrati je to edini grob iz Pobrežja s povsem

thickness and epiphyseal fusion were the main characteristics observed to determine age at death. The specific age of the infants was not obtainable due to the lack of other age-related features.

Sex was assessed for only four individuals due to the absence of fragments with sexually dimorphic features, which would have aided in establishing an estimation of sex. Grave 27 has been assessed as female from the presence of a fragment of the ilium with the preauricular sulcus. The presence of this sexually dimorphic feature, along with its deep and narrow morphology, is characteristic of a female individual. Grave 36 contained a fragment of the frontal bone with a large browridge and a rounded supraorbital margin, which are typically male characteristics. Grave 81 has one fragment of the ilium with the preauricular sulcus absent. Owing to the fact that males tend to lack the preauricular sulcus, this individual is most probably a male. The individual from Grave 94 is interpreted as male, based on the presence of an occipital fragment exhibiting a very large and robust external occipital protuberance.

Pathological conditions were identified on six individuals. On one individual from Grave 26, the centrum of a lumbar vertebra has a slight osteophytic formation on the margin of the body. Neither porosity nor contour change could be assessed as evidence for spinal degeneration from these bone fragments, as both were altered and damaged due to firing. Thus, the observed changes cannot be diagnosed. The remaining five individuals with pathological lesions are those with signs of porotic hyperostosis as evidenced by cranial pitting and varying diploë thickness. Cranial fragments from Grave 87 exhibit pitting with sclerotic bone growth. The nature of the bone growth in association with the cranial lesions suggests a period of healing. Graves 26, 39, and 94 exhibit cranial pitting without visible lamellar bone growth; this indicates that the lesions may have been active at the time of death. Grave 101 contains cranial vault fragments, which have variable diploë thickness. It is possible that the cranial pitting exhibited may be attributed to other pathologies than porotic hyperostosis. With porotic hyperostosis, both cranial pitting and thickening of the diploë must be present in order to make an accurate diagnosis. While there were cranial fragments with either cranial pitting or variable diploë thickness, there were not any fragments, which exhibited both simultaneously. As in with spinal degeneration, poor preservation prevents diagnosis of the observed changes.

kalciniranimi odlomki kosti. Kosti iz grobov 1, 26, 39, 55, 56, 59, 61, 72, 79, 85, 87, 97(1), 97(2), 98, 100, 104, 105, 107, 114b(2), 116, 117(1), 117(2), 120, 138, 144, 156 in 164 so rumeno rjave barve, značilne za izpostavitev nizkim temperaturam med 200 °C in 300 °C. Kosti v grobovih 57, 63(2), 66, 68, 70, 73, 75, 78, 81, 83, 94, 96(1), 109, 111, 112, 113, 114b(1), 122, 134, 135, 137(1), 137(2), 139, 141, 178 in v vzorcu brez konteksta so rumeno-rjave, temno rjave, temno modre in sive barve z belimi robovi. Takšna obarvanost kaže širok razpon temperatur med 200 °C in 645 °C.

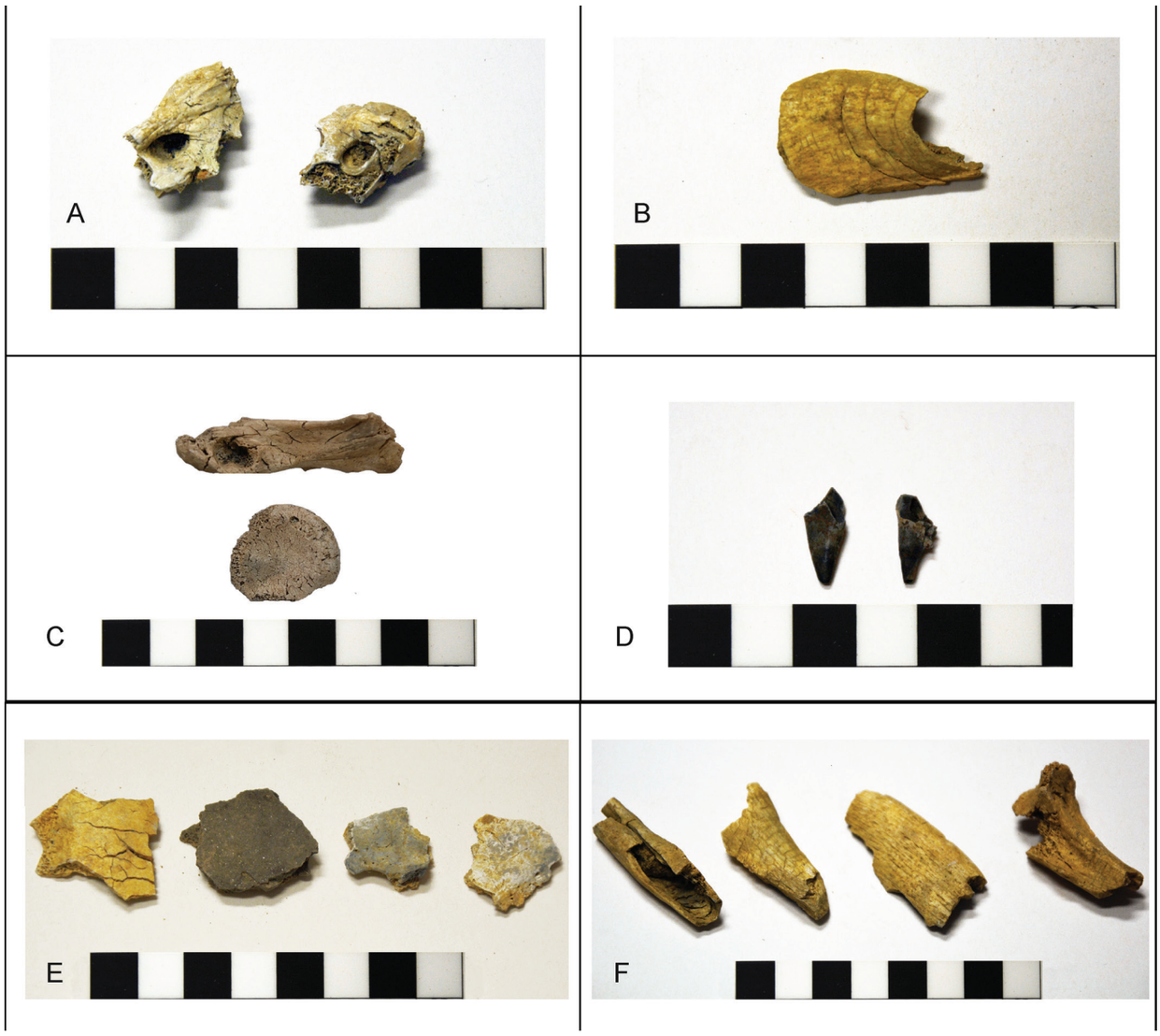
Skupno žgani skeletni ostanki iz Pobrežja kažejo, da je bilo sedemindvajset oseb izpostavljenih temperaturam 200–300 °C, enaindvajset temperaturam 200–500 °C, šestindvajset temperaturam 200–645 °C, dve temperaturam 500–645 °C in zgolj ena oseba temperaturam nad 645 °C. Čeprav obarvanost kosti šestindvajsetih oseb kaže izpostavljenost izredno širokemu razponu temperatur 200–645 °C, je večina odlomkov vendarle svetlo rjave barve in tako priča o prevladi nizkih temperatur.

Teže odlomkov kosti treh velikostnih razredov iz Pobrežja predstavljajo 70 %, 26 % oz. 4 % žganih skeletnih ostankov, pri čemer največji odlomek predstavlja del debla dolge kosti velikosti 95 mm. Teže žganih skeletnih ostankov nihajo med 2,4 g in, v primeru dobre ohranjenosti, 573,7 g. Opaziti ni nikakršne povezave med starostjo v času smrti ali spolom osebe ter težo skeletnih ostankov. Kljub splošni predpostavki o večji teži žganih skeletnih ostankov odraslih v primerjavi z otroci ali moških v primerjavi z ženskami prevladujoče nizke teže iz posameznih grobov preprečujejo pripis skeletnih ostankov z večjo težo odraslim osebam oziroma moškim. Skupna teža vseh žganih skeletnih ostankov iz Pobrežja znaša 9397,3 g, pri čemer je povprečna teža ostankov iz posameznih grobov 1220,4 g. Številni grobovi vsebujejo tudi živalske kosti.

The majority of individuals from this site were burned at low temperatures between 200°C and 500°C with fracture patterns showing in-flesh burning (*figs. 1A* and *1B*). Graves 3, 14, 32, 36, 63(1), 80, 84, 86, 91, 96(2), 101, 102, 106, 108, 147, 148, 153, 171, 173, 175, and 177 exhibit bones which are tan, dark brown and grey in color. This coloration is typical of low temperatures, approximately 200–500°C, with areas rising to slightly higher temperatures as bones are slowly starting to blacken on the edges. Graves 19 and 27 bones are dark grey, blue, and white in color (500–>645°C). This type of burning is typical of exposure to high temperatures, over 645°C as bones are starting to reach complete calcination. Bones from Grave 76 are buff-colored and white, indicative of constant temperatures over 645°C. This is the only grave from Pobrežje, which exhibits completely calcined bone fragments. Graves 1, 26, 39, 55, 56, 59, 61, 72, 79, 85, 87, 97(1), 97(2), 98, 100, 104, 105, 107, 114b(2), 116, 117(1), 117(2), 120, 138, 144, 156, and 164 are tan in color, indicating low temperatures of 200–300°C. Graves 57, 63(2), 66, 68, 70, 73, 75, 78, 81, 83, 94, 96(1), 109, 111, 112, 113, 114b(1), 122, 134, 135, 137(1), 137(2), 139, 141, 178 and the unassigned sample are tan, dark brown, dark blue, black, and grey with slightly white edges; this indicates that temperatures reached a range of temperatures, from 200–645°C.

In total from Pobrežje, there are twenty-seven individuals within the 200–300°C range, twenty-one individuals within the 200–500°C range, twenty-six individuals within 200–645°C, two within 500–645°C, and only one individual at over 645°C. Although there were twenty-six individuals within the range of 200–645°C, the majority of the fragments from these assemblages were light brown and burned at low temperatures.

Weight proportions from Pobrežje are 70%, 26%, and 4%, with a 95 mm long bone shaft fragment being the largest piece from this site assemblage. Cremation weights range from 2.4 g to 573.7 g with good preservation. There is no correlation between age at death or a determination of sex and the weights collected. While is it assumed that there would be higher weights for adult individuals compared to juveniles and possibly males compared to females, the weights collected for most individuals are so minute that it cannot be inferred that higher weights are from adults or males. The total amount of cremated bone from Pobrežje was 9397.3 g, with an average of 122.0 g per grave Several burials contain animal bones.



Slika 1. Slike v podporo preučenemu kostnemu gradivu. **A** – leva in desna skalnica (*pars petrosa*) iz groba 70 s Pobrežja, z znaki gorenja pri nizkih temperaturah, **B** – U-oblikovane razpoke na odlomku dolge kosti iz groba 68 s Pobrežja z znaki gorenja pri nizkih temperaturah, **C** – spodnja čeljustnica in glava koželjnice iz groba 32 iz Ruš, **D** – odlomka zob, odkrita v grobu 31(2) z Brinjeve gore, **E** – Rjavo, črno, sivo in belo obarvani odlomki kosti iz groba 52 s Pobrežja, **F** – odlomki kosti iz groba 68 s Pobrežja z nizko stopnjo ožganosti.

Figure 1. Illustrations supporting the study of bone material. **A** – right and left petrous bones from Pobrežje Grave 70 exhibiting low burning, **B** – U-shaped fissuring on long bone fragment from Pobrežje Grave 68 exhibiting low burning, **C** – mandible and radial head and mandible from Ruše Grave 32, **D** – dental fragments recovered from Brinjeva gora Grave 31(2), **E** – bone fragments form Pobrežje grave 52 exhibiting brown, blackened, gray and white colorations, **F** – bone fragments showing low degree of burning from Pobrežje grave 68.

Ruše[22]

Iz drugega ruškega grobišča (tj. Ruše II) je bilo analiziranih šestindvajset vzorcev/oseb iz 20 grobov (*Pril. 1*), pri čemer je bila šestnajstim izmed šestindvajsetih oseb oz. 62 % določena okvirna starost v času smrti.

V grobu 4 prisotni odlomki lobanje debeline 5 mm kažejo na odraslo osebo.

V grobu 10 prisoten proksimalni del prstnice roke z zraščenim okrajkom govori o osebi, stari najmanj 14 let. Poleg tega je bil prisoten odlomek lobanje z ohranjenim in deloma odprtim lobanjskim šivom. Na osnovi morfoloških lastnosti slednjega je mogoče zaključiti, da gre za mlado odraslo osebo, staro 21–35 let.

Žgani skeletni ostanki vzorca 11(2) iz groba 11 najverjetneje pripadajo dojenčku. Odlomki lobanje so izredno tanki, debeli med 1,5 mm in 3 mm, poleg tega pa so tudi preostali odlomki kosti zelo majhni.

[22] Pahič 1957; Črešnar 2006.

Ruše[22]

Twenty-six samples/individuals from 20 graves were analyzed from the second cemetery from Ruše (i.e. Ruše II) (*App. 1*) with 16 out of 26 individuals or 62% having been assigned an approximate age at death.

The individual from Grave 4 was determined to be an adult based on an overall cranial thickness of 5 mm.

Grave 10 had one fused proximal end of a hand phalanx, which provides a minimum age of 14 years. This cremation also has one cranial fragment with a moderately open cranial suture. Based on the morphology of the cranial suture, this individual is identified as a young adult (21–35 years).

The remains from sample 11(2) from Grave 11 were determined to be from an infant. The cranial fragments are very thin, ranging from 1.5 mm to 3 mm and the other bone fragments are very small.

The only bone from Grave 13 that could be used to estimate age at death and came from the sample

[22] Pahič 1957; Črešnar 2006.

Edini odlomek v pomoč pri oceni starosti v času smrti osebe v grobu 13 izvira iz vzorca 13(1) in predstavlja z deblom zraščeno glavo stegnenice, ki kaže, da je oseba umrla po 15. letu.

V grobu 16 je prisotnih več kosti, na osnovi lastnosti katerih je bilo moč oceniti minimalno starost v času smrti. Povprečna debelina lobanjskih kosti znaša 5–6 mm in kaže na odraslo osebo. Distalni del nadlahtnice z zraščenim kostnim okrajkom govori o starosti nad 13 let. Dlančnica z zraščenimi okrajki nudi oceno starosti nad 14 let, medtem ko zraščeni mali obrtec (*trochanter minor*) kaže na starost nad 15 let. Distalni del golenice z zraščenim okrajkom omogoča določitev najvišje minimalne starosti osebe na 16 let.

V grobu 18 prisoten proksimalni del podlahtnice z zraščenim korakoidnim odrastkom (*processus coracoideus*) kaže na starost nad 13 let, medtem ko prstnica z zraščenimi okrajki kaže na starost nad 14 let. Odlomki lobanje so debeli 4,5 mm, kar je značilno za odrasle osebe.

V vzorcu 19(1) iz groba 19 sta prisotni zraščena glava koželjnice in zraščena glava nadlahtnice, ki kažeta na starost nad 13 let oz. nad 15 let.

V grobu 20 sta prisotna zraščeni distalni okrajek nadlahtnice, ki kaže na starost nad 13 let, in odlomek vretenca z zraščenim obročem, ki govori o starosti nad 20 let.

Debelina odlomkov lobanje iz groba 21 niha med 3,5 mm in 5 mm. Četudi je 3,5 mm malo za odraslo osebo, 5 mm debeli odlomki vendarle kažejo na odraslo osebo.

Med ostanki iz vzorca 29(1) iz groba 29 prisoten povsem razvit distalni del druge ali tretje dlančnice z zraščenim okrajkom kaže na minimalno starost 14 let. Debelina odlomkov lobanje niha med 3,5 mm in 5 mm, kar govori o odrasli osebi.

Edini odlomek v pomoč oceni starosti osebe iz vzorca 29(2) iz groba 29 je del lopatice, morfološka razvitost katere je primerljiva z lopatico odrasle osebe.

V vzorcu iz groba 32 prisoten odlomek proksimalnega dela koželjnice z zraščenim okrajkom kaže na starost nad 13 let, distalni del dlančnice z zraščenim okrajkom na starost nad 14 let in odlomek spodnje čeljustnice s povsem razvito zobnico tretjega kočnika na starost nad 21 let *(sl. 1C)*.

V grobu 8-1993 so prisotni trije odlomki distalnega dela stopalnice, distalni del dlančnice ali stopalnice in proksimalni del distalne prstnice roke z zraščenimi okrajki. Ti odlomki kosti kažejo na starost nad 14 let. Prisotna sta tudi eden izmed čolničev, morfološka razvitost katerega kaže na odraslo osebo, ter odlomek zraščene sklepne ponvice lopatice, ki kaže na starost nad 17 let.

13(1) is the fused femoral head, indicating that the individual died at 15+ years of age.

Grave 16 contained several bones from which a minimum age can be estimated. Based on an average cranial thickness of 5–6 mm, this individual is an adult. The fused distal end of the humerus is present which indicates an age at death of 13+ years. A fused metacarpal provides an age of 14+ years, and the fused lesser trochanter of the femur indicates an age of 15+ years. The fused distal end of the tibia provides the highest minimum age for the individual at 16+ years of age.

From Grave 18, there is a fused coronoid process of the ulna, suggesting an age of 13+ years, and a fused phalanx indicating 14+ years. Cranial fragments from this cremation are 4.5 mm thick, which are characteristic of an adult individual.

Sample 19(1) from Grave 19 contained a fused radial head and a fused humerus head, which indicate ages of 13+ years and 15+ years, respectively.

From Grave 20, there is the fused distal epiphysis from the humerus indicating 13+ years of age and the fused epiphyseal ring on a vertebral fragment indicating 20+ years of age.

The thickness of cranial fragments from Grave 21 range from 3.5 mm to 5 mm; although 3.5 mm is thin for an adult individual, the 5 mm thick fragments are likely indicative of an adult individual.

Remains from sample 29(1) from Grave 29 contained an adult sized, fused distal end of either metacarpal 2 or 3, providing a minimum age of 14 years. The cranial fragments range from 3.5 mm to 5 mm, which are most likely from an adult individual.

The only bone from which to establish an age for the individual from Grave 29 from the sample 29(2) is a fragment of the scapula, which is morphologically developed similar to that of an adult individual.

The sample Grave 32 had a fragment of the fused proximal radius indicating 13+ years of age, the fused distal end of a metacarpal indicating 14+ years of age, and a mandible fragment with a complete and fully formed 3rd molar socket, which provides an age of 21+ years (*fig. 1C*).

There are three fragments from the distal ends of fused metatarsals, a fused distal end of either a metacarpal or metatarsal, and the fused proximal end of a distal hand phalanx from Grave 8-1993. These bone fragments suggest an age of 14+ years. There is one navicular which is adult-like in its morphology and a fragment of a fused glenoid fossa, indicating an age of 17+ years.

The cranial fragments from Grave 9-1993 are 4 mm to 5 mm thick, indicating an adult individual.

Lobanjski odlomki iz groba 9-1993 so debeline med 4 mm in 5 mm, kar kaže na odraslo osebo.

Vzorec iz groba brez konteksta iz Ruš II[23] vključuje odlomek nezraščenega črevničnega grebena ter tako kaže na starost pod 23 let.

Ocene starosti oseb iz Ruš II so večinoma osnovane na zraščenosti kostnih okrajkov in debelini odlomkov lobanje. Zaradi odsotnosti s starostjo povezanih morfoloških lastnosti desetim osebam starosti v času smrti ni bilo mogoče določiti. Zgolj dve osebi sta bili uvrščeni med »mladostnike«. Glede na debelino odlomkov lobanje je bil v vzorcu 11(2) iz groba 11 verjetno dojenček, medtem ko je bila sodeč po nezraščenem črevničnem grebenu odlomka medenice v grobu brez konteksta oseba, mlajša od 23 let. Zaradi pomanjkanja s starostjo povezanih morfoloških lastnosti, ki bi pripomogle k natančnejši oceni starosti v času smrti, je bilo za pet oseb (grob 4, 21, 26, 29(2) in 9-1993) oceniti le, da gre za odrasle osebe. Edina oseba z natančneje ocenjeno starostjo je bila v grobu 10, kjer gre na osnovi odprtosti lobanjskega šiva za mlado odraslo osebo (21–35 let). Petim osebam (grob 13(1), 19(1), 20, 32 in 8–1993) je bila določena minimalna starost, medtem ko sta bili v primeru preostalih treh oseb (grob 16, 18 in 29(1)) mogoči določitev najvišje minimalne starosti in ocena, da gre za odrasle osebe.

Pri treh osebah je bilo mogoče oceniti spol. V grobu 10 je prisoten del desnega loka ličnice in del očnice z zaobljenim zgornjim robom ter izrazitim nadočesnim obokom. Te spolno dvolične lastnosti so značilne za moške. En odlomek očnice iz groba 21 je iz leve strani lobanjskega svoda in ima oster zgornji rob, medtem ko je drugi odlomek bolj robusten, ima nekoliko manj oster zgornji rob ter izvira iz desne strani lobanjskega svoda. Četudi dva odlomka očnice nekoliko različne oblike in robustnosti morda kažeta na prisotnost dveh oseb, je bolj verjetno, da odlomka pripadata eni osebi, glede na oster zgornji rob verjetno ženski. V grobu 32 prisotna glava koželjnice ima premer 22 mm (*sl. 1C*), kar je značilno za ženske.

Zgolj pri eni osebi je opaziti patološke spremembe. V grobu 20 iz Ruš je prisotno telo vretenca z opazno rastjo nove kostnine v obliki kostnih odrastkov.

Žgani skeletni ostanki so dobro ohranjeni, pri čemer U-oblikovane, vzdolžne in prečne razpoke površine kažejo na sežig ob prisotnosti mehkega tkiva. Temperature žganja v Rušah so bile nizke, večinoma 200–300 °C. Izmed 26 žganih grobov iz Ruš so bile v desetih (grob 3, 4, 9, 11(1), 19(1), 21, 29(1), 34,

[23] Vrečka s kostmi je bila označena kot grob 86, ki ne obstaja. Posledično kontekst kosti ostaja neznan.

The sample from an unassigned grave from Ruše II[23] included a fragment of an unfused iliac crest, providing an age of under 23 years.

The majority of the age ranges of the individuals from Ruše II were obtained by analyzing degree of fusion on epiphyseal ends and cranial wall thickness. The remaining ten individuals, which could not be aged, did not have features present, which would have aided in providing an age at death. Only two of the individuals were considered to be juveniles. The individual from sample 11(2) from Grave 11 was an infant based on the cranial wall thickness and the individual from the unassigned grave was under 23 years based on a pelvic fragment with an unfused iliac crest. Five of the individuals (Graves 4, 21, 26, 29(3), and 9-1993) were only determined to be 'adult' due to the lack of age-related features, which would have further defined age at death. The only individual with a defined age range was that from Grave 10, which was aged as a young adult (21–35 years) based on the openness of the cranial suture. Five individuals (Graves 13(1), 19(1), 20, 32 and 8-1993) were provided with a minimum age and the remaining three individuals (Graves 16, 18, and 29(1)) were given a 'maximum' minimum age and a determination of 'adult'.

Three individuals could be assigned a sex determination. For Grave 10, there is a section of the right zygomatic arch and a section of the orbital bone with a rounded superior margin and protruding browridge; these sexually dimorphic features tend to be characteristic of male individuals. One of the orbital fragments from Grave 21 is from the left side of the calvaria with a sharp superior margin while the other fragment is from the right side, is more robust, and has a slightly less sharp superior margin. While the presence of two orbital sections of slightly varying shape and robusticity may indicate two individuals, it is likely that these fragments are from the same individual, and most likely female individual due to the sharp superior margin. There is one radial head from Grave 32, which measures 22 mm in diameter (*fig. 1C*). This measurement falls within the range, which is typical for female individuals.

Only one individual exhibited a pathological condition. Grave 20 from Ruše contains a vertebral centrum with slight proliferative osteophytic bone growth.

The cremations exhibited good preservation with in-flesh burning as represented by u-shaped

[23] The bag containing the bones was labelled as Grave 86, which however does not exist. Therefore, we have decided to leave the bones unassigned.

9-1993 in grob brez konteksta) kosti rumeno-rjave ali rjave barve, kar kaže na izpostavitev nizkim temperaturam 200–300 °C. V nekaterih grobovih so bili poleg rumeno-rjavih/svetlo rjavih odtenkov, značilnih za nizke temperature žganja, opazni tudi znaki drugih temperaturnih razponov. V grobu 10 je bil poleg prevladujoče rjavih kosti prisoten kalciniran odlomek rebra bele barve, ki kaže na višje temperature in morda tudi na dlje trajajočo izpostavljenost v primerjavi s preostalimi deli skeleta. Kosti iz vzorca 11(2) iz groba 11 so bele barve. V tem grobu so prisotni odlomki dojenčka, ki je bil glede na kalcinirano stanje kosti ognju verjetno izpostavljen dlje časa. Kosti v vzorcu 13(1) iz groba 13 ter iz groba 16 so temno rjave barve z deli, obarvanimi črno in temno modro. Glede na prisotnost črnih in modrih odtenkov so temperature žganja v tem primeru presegle 300 °C, kosti pa so bile izpostavljene ognju nekoliko dlje časa. Kosti iz vzorca 13(2) iz groba 13 ter iz grobov 20, 23 in 26 so večinoma rjave s sivimi robovi, kar kaže na približevanje temperaturi 300 °C ter dlje trajajočo izpostavljenost kot v primeru večine preostalih oseb. Nekaj odlomkov iz groba 23 je bele barve, kar kaže izpostavitev nekaterih delov telesa višjim temperaturam.

Večina kosti iz grobov 9 in 18 ter iz groba brez konteksta iz Ruš II je rumeno-rjave barve. Vendarle so na nekaterih odlomkih iz vseh treh grobov vidni belo obarvani deli, ki niso posledica izpostavitve visokim temperaturam. Bela barva se na kosteh pojavlja sporadično, tako da gre morda za obarvanost z zemljino. Kosti iz vzorca 14(1) iz groba 14 so večinoma temno rjavih barv, medtem ko so zunanje površine odlomkov lobanje bele in notranje bež barve. Pri tem gre morda za posledico dlje trajajoče izpostavitve temperaturam nad 645 °C, vendar zgolj zunanjega dela lobanje. Na notranji strani lobanje prepoznavni znaki nižjih temperatur in/ali omejeni izpostavljenosti vročini kažejo na zaščito notranjosti lobanjske votline pred ognjem. Vzorec 14(2) iz groba 14 ima ohranjenih zgolj 14 odlomkov, pri čemer so vsi kalcinirani in tako kažejo na izpostavitev temperaturam nad 645 °C.

Prisotnost raznolikih barv odlomkov, od rumeno-rjave z modrimi robovi do bele, kaže, da so bile kosti iz vzorca 19(2) in 29(2) iz grobov 19 in 29 ter iz groba 32 izpostavljene različno visokim temperaturam različno dolgo. Sporadično gorenje kosti iz vzorca 19(2) iz groba 19 je primerljivo s kostmi iz groba 8-1993, kjer barve nihajo od svetlo rjave in rumeno-rjave do svetlo sive in bele ter tako kažejo na neenakomerno izpostavitev telesa ognju. Kosti iz vzorca 29(3) iz groba 29 so večinoma črne in bele,

fissuring and curved lateral and transverse splintering. Burning temperatures at Ruše were low, primarily between 200°C and 300°C. Of the 26 Ruše cremations, ten (Graves 3, 4, 9, 11(1), 19(1), 21, 29(1), 34, 9-1993 and the unassigned grave) are completely tan or brown in color, indicative of low burning at 200–300°C. Several Ruše cremations exhibit other stages of burning aside from the solid tan/light brown hue of low burning. Although mainly brown, Grave 10 has one rib fragment that is white and calcined, that fragment having been burned at a higher temperature and possibly left on the pyre for longer than the rest of the cremation. The bones from sample 11(2) from Grave 11 are white in color. This cremation includes the remains of an infant, which may have been exposed to heat for a prolonged period of time in order to achieve this state of calcination. Sample 13(1) from Grave 13 and Grave 16 contained bone fragments that are dark brown in color, with areas of black and dark blue. The temperature of this cremation exceeded 300°C and the bones were left on the pyre for slightly longer, as evidenced by the bones beginning to acquire black and blue colorations. The bones from sample 13(2) from grave 13 and Graves 20, 23, and 26 are mainly brown with grey edges, indicating that the bones were exposed to temperatures approaching 300°C for slightly longer than the majority of the cremations. Several fragments from Grave 23 are also white in color, suggesting that an area of the cremation was exposed to higher temperatures.

The majority of bones from Graves 9, 18 and the unassigned grave from Ruše II are tan in color; however, on several fragments from each cremation there are areas with a white coloration that is not due to high temperatures. The white color occurs sporadically on the bones and may be due to soil staining. The bones of sample 14(1) from Grave 14 are mainly dark brown in color; however, the cranial bones are white on the external side and beige on the internal side. This may be due to prolonged exposure to temperatures of over 645°C, but only on the external side. This suggests that the internal side of the cranial vault was shielded from the fire, due to the signs of low temperatures and/or limited exposure to heat. Sample 14(2) from Grave 14 has only 14 bone fragments, all of which are calcined, indicating exposure to temperatures of over 645°C.

The bones from samples 19(2) and 29(2) from Graves 19, 29 and 32 were burned at different temperatures for varying periods of time, as the bones range in color from tan with edges of blue, and white. The sporadic burning of sample 19(2) from

kar govori o temperaturah nad 500 °C, glede na kalcinacijo mestoma tudi nad 645 °C.

Teža žganih skeletnih ostankov posameznih grobov niha med 1,1 g in 300,4 g. Skupna teža žganih skeletnih ostankov iz vseh 26 grobov iz Ruš je dobrih 1450 g, s povprečjem zgolj 55,8 g na grob. Teže ni moč povezati s starostjo v času smrti ali spolom oseb, temveč zgolj s procesom zbiranja kosti. Teže odlomkov kosti treh velikostnih razredov iz Ruš predstavljajo 67 %, 25 % oz. 8 % žganih skeletnih ostankov, pri čemer je največji odlomek 70 mm velik del debla dolge kosti. Kosti živali so bile prisotne v treh grobovih.

Gračič pod Brinjevo goro[24]

Iz Gračiča pod Brinjevo goro je bilo analiziranih šestinšestdeset vzorcev iz petdesetih grobov (*Pril. 1*). Za šestinštirideset izmed šestinšestdesetih oseb je bilo mogoče podati oceno starosti.

V grobu 1 so prisotni odlomki lobanje debeline 3,5–4 mm. Debelina izključuje, da gre za dojenčka ali otroka, ter kaže na odraslo osebo.

V grobu 2 prisoten odlomek zraščenega komolčnega podaljška (*processus olecrani*) kaže na starost nad 13 let.

V grobu 3 so prisotni odlomki lobanje debeline 4,5 mm. Debelina izključuje, da gre za dojenčka ali otroka, ter kaže na odraslo osebo. Zraščen črevnični greben kaže na starost nad 16 let.

V grobu 6 so prisotni odlomki lobanje debeline 5 mm in kljub odsotnosti notranje stene kažejo na odraslo osebo.

V grobu 7 so prisotni odlomki lobanje debeline 5 mm, kar kaže na odraslo osebo.

V grobu 9 so prisotni odlomki lobanje debeline med 4 mm in 7 mm, kar kaže na odraslo osebo.

V grobu 10 je prisotnih več odlomkov kosti, ki so omogočili vzpostavitev natančne ocene starosti. Zgornji drugi ličnik s še ne povsem razvitimi koreninami kaže na starost med 12 in 15 let. Ne popolnoma razvit spodnji prvi ličnik omogoča oceno starosti na približno 11–12 let. Stalni zgornji kočnik ali sekalec s povsem razvito korenino govori o starosti 11–15 let. Poleg delov zobovja sta prisotna tudi nezraščen črevnični greben, ki kaže na starost pod 23 let, ter srednja prstnica (roke ali noge) z nezraščenim okrajkom, ki govori o starosti pod 21 let. Na osnovi

[24] Pahič 1988–1989; glej tu Koprivnik, Gračič.

grave 19 is similar to that of Grave 8-1993, which ranges in color from light brown and tan to light grey and white; this suggests uneven burning of the individual. Sample 29(3) from grave 29 has bones, which are mainly black and white, indicating temperatures of above 500°C and in places, over 645°C as evidenced by calcination.

The cremation weights ranged from 1.1 g to 300.4g. The total combined weights from all 26 cremated assemblages from Ruše are just over 1450 g, with the average cremation weight being only 55.8 g. These weights do not tie in with age at death or sex of the individual and is rather related only to the process of collection of the bones. The weight proportions for Ruše are 67%, 25%, and 8% with the largest bone fragment being a 70 mm piece of a long bone shaft. Animal remains were recovered from three burials.

Gračič below Brinjeva gora[24]

Sixty-six samples/individuals from 50 graves from Gračič below Brinjeva gora were analyzed (*App. 1*). Out of those sixty-six individuals, fourty-six were assigned an age estimation.

Grave 1 contained cranial fragments with a thickness of 3.5–4 mm; these fragments are most likely from an adult individual and it is clear they are not from an infant or child.

Grave 2 had a fragment of the fused olecranon process from the right ulna which provides an age of 13+ years.

Grave 3 contained cranial fragments measuring 4.5–5 mm in thickness; thickness suggests that these fragments are not from an infant or child, but are most likely from an adult individual. There is a fused iliac crest fragment, suggesting 16+ years of age.

Grave 6 contained cranial fragments that are 5 mm thick, despite missing the inner table, indicative of an adult individual.

Grave 7 contained cranial fragments that were 5 mm thick, indicative of an adult.

Grave 9 had cranial fragments ranging in thickness from 4 mm to 7 mm, which is indicative of an adult individual.

Grave 10 contained several bone fragments from which a narrow age range could be established. There is one maxillary 2nd premolar with incomplete roots which indicates an age of between 12 and 15 years of age. There is one incomplete mandibular 1st premolar which provides an age of approximately 11–12 years of age. There is one permanent maxillary canine or incisor with a complete root, indicating an

[24] Pahič 1988–1989; see here Koprivnik, Gračič.

ostankov zobovja je mogoče zaključiti, da gre za mlado osebo, staro med 12 in 15 let.

V grobovih 12, 13 in 17 so prisotni odlomki lobanje, debelina katerih niha med 5 mm in 7 mm, kar kaže na odrasle osebe.

Debelina odlomkov lobanje iz groba 20 niha med 5 mm in 7 mm ter kaže na odraslo osebo. Prisoten je tudi odlomek lobanje z zabrisanim šivom, ki oznanja starejšo odraslo osebo, starejšo od približno 50 let.

V grobu 26 prisoten povsem izrasel in razvit zgornji kočnik kaže na starost nad 15 let. Odlomki lobanje iz groba so debeli približno 5 mm in govorijo o odrasli osebi.

V grobu 28 prisoten proksimalni del prstnice roke z zraščenim okrajkom govori o starosti nad 14 let, povsem razvit spodnji tretji kočnik o starosti nad 21 let, medtem ko 5 mm do 7 mm debeli odlomki lobanje kažejo na odraslo osebo.

Iz groba 31 izvirata dva vzorca. Eden izmed odlomkov dolge kosti iz vzorca 31(1) predstavlja del stegnenice z zraščenim velikim obrtcem (*trochanter major*) in kaže na starost nad 15 let. Odlomki lobanje iz tega vzorca so debeli približno 5 mm in govorijo o odrasli osebi. Starost osebe iz vzorca 31(2) je 12–15 let. Starostni razpon temelji na prisotnosti izraslega in povsem razvitega zgornjega sekalca, ki kaže na starost nad 12 let, in še ne povsem razvitega spodnjega drugega kočnika, ki govori o starosti pod 15 let *(sl. 1C)*.

V grobu 32 so prisotni odlomki lobanje debeline 4 mm, kar izključuje možnost dojenčka in otroka, ter govori o odrasli osebi.

Iz groba 34 izvirata dva vzorca. V vzorcu 34(1) sta prisotna dva odlomka dolge kosti, in sicer proksimalni del podlahtnice ter distalni del nadlahtnice z zraščenima okrajkoma, kar kaže na starost nad 13 let. Glede na debelino odlomkov lobanje in splošno robustnost kosti gre verjetno za odraslo osebo. V vzorcu 34(2) sta prisotna distalni del dlančnice ali stopalnice in proksimalni del prstnice, zraščenost okrajkov katerih govori o starosti nad 14 let. Prisotno je tudi deblo dlančnice ali stopalnice, velikost katerega kaže na odraslo osebo.

Poleg odlomkov lobanje debeline 4–5 mm, ki kažejo na odraslo osebo, v grobu 35 prisoten povsem razvit stalni zgornji drugi sekalec govori o starosti nad 11 let.

V grobu 36 so prisotni odlomki lobanje debeline 4–5 mm in govorijo o odrasli osebi.

Iz groba 38 izvirata dva vzorca. Poleg morfološko povsem razvitih odlomkov lobanje, kar kaže na odraslo osebo, je v vzorcu 38(1) edini odlomek

age of 11–15 years. In addition to dental fragments, there is also a fragment of the iliac crest which is unfused and indicating and age of less than 23 years and an unfused middle phalanx (of the hand or foot) which provides an age of less than 21 years. From the dental remains, this was probably a juvenile individual aged between 12 and 15 years.

Graves 12, 13, and 17 contained cranial fragments, ranging in thickness from 5 mm to 7 mm, indicating that the remains are from adult individuals.

Cranial fragments from Grave 20 range in thickness from 5 mm to 7 mm, indicating an adult individual. There is also one fragment with an obliterated suture, which signifies an older adult individual of 50+ years of age.

Grave 26 contained one erupted and fully formed maxillary molar, indicating an age of 15+ years of age. However, the cranial fragments from this grave are approximately 5 mm in thickness, which is indicative of an adult.

From Grave 28, there is the proximal end of a hand phalanx, which is fused, indicating 14+ years of age, a complete mandibular 3rd molar, indicating 21+ years of age, and 5 mm to 7 mm thick cranial fragments, indicating adult individual.

There were two samples collected from Grave 31. One of the long bone fragments from sample 31(1) is a piece of the femur, with a fused greater trochanter, which gives an age of 15+ years. However, the cranial fragments from this sample are approximately 5 mm thick, which is indicative of an adult individual. The age of the individual from sample 31(2) is 12–15 years. This age range was established based on the presence of an erupted and fully formed maxillary incisor (12+ years) and an incomplete mandibular 2nd molar (under 15 years) (*fig. 1C*).

Grave 32 contains cranial fragments with a thickness of 4 mm; thickness suggests that these fragments are not from an infant or child, but are most likely from an adult individual.

There were two samples collected from Grave 34. Sample 34(1) had two long bone fragments, the fused proximal end of the ulna and the fused distal end of the humerus, which provide an age of 13+ years. Based on the thickness of the cranial fragments and the overall robusticity of the bones, this is an adult individual. Sample 34(2) had the fused distal end of either a metacarpal or metatarsal and the fused proximal end of a phalanx, both providing an age of 14+ years. There is also either a metacarpal or metatarsal shaft which is adult in size.

Aside from adult-sized vault fragments with a thickness of 4–5 mm, Grave 35 contained a complete

v pomoč pri določanju starosti v času smrti izrasel kočnik (natančnejša določitev ni mogoča) s povsem razvito korenino, ki govori o starosti nad 9 let. V vzorcu 38(2) so prisotni odlomki lobanje debeline 4 mm. Debelina izključuje, da gre za dojenčka, in kaže na odraslo osebo.

V grobu 42 sta prisotna dva odlomka lobanje, eden debeline 3 mm in drugi debeline 5 mm. Odlomka sta najverjetneje del lobanje odraslega, saj debelina izključuje možnost dojenčka ali otroka.

Glede na debelino lobanjskih kosti in splošno robustnost dolgih kosti gre v grobu 44 za odraslo osebo.

V grobu 50 prisoten odlomek dolge kosti predstavlja del zraščene glave nadlahtnice ali stegnenice in kaže na starost nad 15 let. Odlomki lobanje iz groba kažejo na odraslo osebo.

V grobu 51 je prisoten odlomek lobanje z delno zraščenim šivom, ki kaže na starejšo odraslo osebo. Debelina lobanjskih odlomkov prav tako govori o odrasli osebi.

V grobu 52 so prisotni odlomki lobanje debeline med 3,5 mm in 4,5 mm. Odlomki najverjetneje predstavljajo del lobanje odrasle osebe, saj njihova debelina izključuje možnost dojenčka ali otroka.

V grobu 60 prisoten distalni del golenice z zraščenim okrajkom kaže na starost nad 16 let. Poleg tega so odlomki lobanje iz groba debeli 5–6 mm, kar govori o odrasli osebi.

V grobu 62 so prisotni odlomki lobanje debeline 5–8 mm, kar govori o odrasli osebi.

Oseba v grobu 65 je bila na osnovi 4–5 mm debelih lobanjskih kosti določena kot odrasla.

Iz groba 68 izvirata dva vzorca. V vzorcu 68(1) so trije odlomki, na osnovi katerih je mogoče določiti starost v času smrti. Prisotna sta povsem razvita stalni zgornji prvi kočnik, razvoj katerega se konča po 9. letu starosti, ter stalni spodnji prvi ličnik, razvoj katerega je zaključen po 12. letu starosti. Poleg tega je prisotna zraščena sklepna ponvica lopatice, ki omogoča oceno najvišje minimalne starosti na 17 let. V vzorcu 68(2) je prisoten odlomek zgornje čeljustnice s povsem razvito zobnico desnega drugega sekalca in desnega podočnika. Razvoj omenjenih zobnic je končan po 15. letu starosti.

V vzorcu 70(1) iz groba 70 in v grobu 72 so prisotni odlomki lobanje debeline 3–4 mm, kar izključuje možnost dojenčka ali otroka in najverjetneje kaže na odraslo osebo.

Poleg debeline lobanjskih kosti je v grobu 73 edini odlomek v pomoč pri oceni strasti v času smrti povsem razvit stalen zgornji prvi sekalec, rast katerega se zaključi po 11. letu starosti.

permanent maxillary 2nd incisor, providing an age of 11+ years.

Grave 36 contained cranial fragments with a thickness of 4–5 mm, which is indicative of an adult individual.

There were two samples collected from Grave 38. Aside from morphologically adult cranial fragments, the only fragment from which to determine age at death for sample 38(1) is a tooth – an erupted and fully formed molar root (specific tooth unknown) which provides an age of 9+ years. Sample 38(2) contained skull fragments with cranial thickness of 4 mm. Thickness suggests that these fragments are not from an infant, but are most likely from an adult individual.

Grave 42 contained two cranial fragments, one 3 mm in thickness, the other 5 mm in thickness. Thickness suggests that these fragments are not from an infant or child, but are most likely from an adult individual.

Based on cranial thickness and overall long bone robusticity, the individual from Grave 44 was an adult.

Grave 50 had a long bone fragment, which is either fused head of the humerus or femur; this fragment provides an age of 15+ years of age. Cranial fragments from this grave indicate an adult individual.

Grave 51 contained a cranial fragment with a moderately closed suture, indicating an older adult individual; the thickness of the cranial fragments is also indicative of an adult individual.

Grave 52 contained skull fragments with cranial thickness of 3.5 mm to 4.5 mm. Thickness suggests that these fragments are not from an infant or child, but are most likely from an adult individual.

Grave 60 had the fused distal end of a tibia, indicating 16+ years of age; additionally, cranial fragments from this grave are 5–6 mm thick, indicative of an adult individual.

Grave 62 had cranial fragments measuring 5–8 mm in thickness, indicative of an adult individual.

The individual from Grave 65 has been determined to be an adult based on cranial fragments being 4–5 mm thick.

There were two samples from Grave 68. From sample 68(1), there were three fragments from which to determine an age at death. There was a complete permanent maxillary 1st molar which finishes developing at around 9 years of age. There was a fully formed permanent mandibular 1st premolar which is complete at 12+ years. There was also a fragment of a fused glenoid fossa, providing the highest minimum age of 17 years. Sample 68(2) had a maxilla fragment

V grobu 77 so prisotni štirje odlomki zob, na osnovi katerih je mogoče oceniti starost. Prvi je povsem razvit stalen spodnji prvi kočnik, rast katerega je zaključena po 8. letu starosti. Preostali trije odlomki, stalni zgornji podočnik, izrasel in povsem razvit zgornji prvi ličnik ter povsem razvit zgornji drugi ličnik, kažejo na starost nad 15 let. Ob inventarju groba 77 je bil v prisoten še povsem razvit spodnji prvi ličnik.

V grobovih 21, 23, 24, 27, 29, 30, 47, 53, 56 in 63 so bili prisotni odlomki lobanje, debelejši od 5 mm, kar kaže na odrasle osebe.

Izmed skupno šestinšestdesetih oseb iz Brinjeve gore dvajset osebam starosti v času smrti ni bilo mogoče določiti zaradi odsotnosti s starostjo povezanih morfoloških lastnosti. Dvema osebama (grob 10 in vzorec 31(2) iz groba 31) je bil pripisan ozek starostni razpon. Starost osebe v grobu 10 je bila na osnovi še ne povsem razvitih zgornjega drugega ličnika in spodnjega prvega ličnika ter povsem razvitih zgornjega podočnika in zgornjega prvega sekalca ocenjena na 12–15 let. V vzorcu 31(2) iz groba 31 so bili prisotni ostanki 12–15 let stare osebe. Starostni razpon je bil določen na osnovi povsem razvitega zgornjega sekalca in izraslega, a še ne povsem razvitega spodnjega drugega kočnika. Glede na zraščenost lobanjskega šiva je bila ena oseba opredeljena kot »starejši odrasel«. Šestim osebam (grob 28, 31(1), 34(2), 68(1), 68(2) in 77) je bila pripisana minimalna starost, osem oseb je bilo »verjetno odraslih« (grob 1, 3, 32, 38(1), 42, 52, 70 in 72) in 21 oseb (grob 6, 7, 9, 12, 13, 17, 21, 23, 24, 27, 29, 30, 36, 44, 47, 51, 53, 56, 62, 63 in 65) je bilo zgolj splošno uvrščenih med »odrasle«. Preostalim osmim osebam (grob 2, 26, 34(1), 35(1), 38(2) 50, 60, 73) je bila ugotovljena najvišja minimalna starost z uvrstitvijo med »odrasle«.

Glavni uporabljeni metodi pri ocenjevanju starosti v času smrti oseb iz Brinjeve gore sta bili zraščenost kostnih okrajkov in debelina odlomkov lobanje.

Zgolj pri eni osebi iz Gračiča pod Brinjevo goro so bili ohranjeni odlomki s spolno ugotovljivimi lastnostmi, ki so omogočile oceno spola. V grobu 53 je prisoten odlomek medenice z delom velikega kolčnega vozla (*incisura ischiadica major*). Morfološko je kolčni vozel širok, kar kaže na žensko, vendar je kost razlomljena in pomanjkljivo ohranjena, tako da zaključki o spolu niso povsem zanesljivi.

Na odlomkih lobanje iz grobov 20 in 28 iz Brinjeve gore je vidna luknjičasta površina z novimi plastmi sklerotične kostnine.

Temperature žganja v Gračiču pod Brinjevo goro so bile primarno 200–500 °C, s pogosto

with completely developed tooth sockets from the right 2nd incisor and right canine; the complete development of these sockets occurs at approximately 15 years of age.

Sample 70(1) from Grave 70 and Grave 72 had cranial fragments measuring 3–4 mm in thickness; thickness suggests that these fragments are not from an infant, but are most likely from an adult individual.

Aside from cranial thickness, the only fragment from which to establish an age at death for Grave 73 is a fully developed permanent maxillary 1st incisor, which is complete at approximately 11 years of age.

Grave 77 had four tooth fragments from which to establish age. One is a fully formed permanent mandibular 1st molar which is complete at approximately 8 years of age. The other three fragments, a permanent maxillary canine, an erupted and fully formed maxillary 1st premolar, and a complete maxillary 2nd premolar, provide an age of 15+ years. There is also a completely developed mandibular 1st premolar which accompanied the other cremated remains from Grave 77.

Graves 21, 23, 24, 27, 29, 30, 47, 53, 56, and 63 all have cranial fragments over 5 mm thick, which indicates adult individuals.

Out of the sixty-six total individuals from Brinjeva gora, twenty individuals could not be aged as they did not have features present, which would have provided an age at death. There were two individuals (Graves 10 and 31(2)), which could be assigned a narrow age range. Grave 10 contained an individual aged 12–15 years based on the incomplete development of a maxillary 2nd premolar and a mandibular 1st premolar and the complete development of a maxillary canine and maxillary 1st incisor. Grave 31(2) contained the remains of a 12–15 year old individual. This age range was determined based on a fully developed maxillary incisor and a mandibular 2nd molar which had erupted but was not complete. One individual (Grave 20) was determined to be an 'older adult' based on cranial suture closure. Six individuals (Graves 28, 31(1), 34(2), 68(1), 68(2), and 77) were assigned a minimum age, seven individuals were queried to be adults (Graves 1, 3, 32, 38(1), 42, 52, 70, and 72) and twenty-one individuals (Graves 6, 7, 9, 12, 13, 17, 21, 23, 24, 27, 29, 30, 36, 44, 47, 51, 53, 56, 62, 63, and 65) were given a general age determination of 'adult'. The remaining eight individuals (Graves 2, 26, 34(1), 35(1), 38(2) 50, 60, 73) were assigned a maximum minimum age and a description of 'adult'. Epiphyseal fusion and cranial wall thickness were the main methods utilized when

izpostavitvijo kosti temperaturam do 645 °C. Večina kosti iz Brinjeve gore je temno rjavih in črnih s sivimi robovi, kar kaže izpostavljenost različno visokim temperaturam.

Grobovi 1, 31(2), 33, 39, 49, 50 in 56 kažejo predvsem temno modre in počrnele kosti z delno kalcinacijo in svetlo sivo obarvanostjo robov ter delov zunanjih površin kompaktne kosti. Takšna obarvanost je značilna za kosti, izpostavljene temperaturam 500–645 °C. Kosti iz grobov 13, 15(2), 19, 23, 29, 30, 31(1), 36 in 38(2) kažejo postopno rast temperatur iz približno 200–300 °C do 500–645 °C, kar je vidno s prevladujoče temno rjavimi in črnimi kostmi izpostavljenimi nižjim temperaturam ter temno in svetlo sivimi in belimi kostmi izpostavljenimi visokim temperaturam.

Odlomki kosti iz grobov 2, 3, 9, 12, 24, 25, 26, 27, 28, 34(1), 34(2), 39(2), 40, 42, 43, 51 in 52 so večinoma rumeno-rjave, rjave, črne in sive barve, kar kaže na izpostavitev predvsem nizkim do zmernim temperaturam med 200–300 °C z mestoma doseženimi 500 °C. Kosti iz grobov 7 in 53 so večinoma temno modre barve in kažejo na temperature med približno 500 °C in 645 °C. Vendarle so vidni tudi manjši predeli rumeno rjave in sive barve, ki kažejo na nižji temperaturni razpon, ter predeli bele barve, ki kažejo izpostavljenost temperaturam nad 645 °C.

Kosti iz grobov 10 in 14 ter iz vzorca 70(2) iz groba 70 so večinoma rumeno-rjave barve. Vendarle so številni odlomki dolgih kosti črne, temno modre in bele barve, z začetnimi znaki popolne kalcinacije. Kosti iz grobov 6, 17, 22, 44, 47, 57, 60, 61 in 68(1) so rumeno-rjave barve z modrimi, črnimi in sivo-belimi robovi. Takšna obarvanost je značilna za nizke do srednje visoke temperature, z izpostavljenostjo robov nekoliko višjim temperaturam. Kosti iz groba 21 so svetlo modre in svetlo sive barve z nekaterimi manjšimi odlomki, obarvanimi rjavo-rumeno. Videti je, da so bile temperature zmerne, nekoliko nižje v določenih predelih.

Barve odlomkov dolgih kosti iz vzorca 35(1) iz groba 35 nihajo od rumeno-rjave, črne, modre do bele, čeprav so odlomki lobanje zaradi stalne izpostavljenosti visokim temperaturam nad 645 °C kalcinirani in beli. Kosti iz grobov 15(1), 20, 37 in 58 so temno rjave barve, kar kaže na nizke temperature žganja okrog 200–300 °C. Kosti iz vzorca 38(2) iz groba 38 so temno modre in temno rjave z rahlo sivo in belo obarvanimi robovi. Odlomki dolgih kosti iz groba 45 so svetlo sivi in beli s črnimi robovi, kar je posledica skorajšnje kalcinacije, medtem ko so preostale kosti rumeno-rjave in svetlo sive barve. Kosti v grobu 59 in 73 so svetlo rjave, temno rjave, sive in

attempting to determine age at death for the individuals from Brinjeva gora.

Only one individual from Gračič bellow Brinjeva gora had any sexually diagnostic features from which sex could be determined. Grave 53 has one pelvic fragment, which is a part of the greater sciatic notch. It appears to be wide in morphology, indicating a female individual; however, a portion of the fragment is broken and missing so this conclusion cannot be made with complete accuracy.

Cranial fragments from Graves 20 and 28 exhibit pitting with sclerotic bone growth.

Burning temperatures were primarily between 200–500°C, many were burned up to 645°C. Most of the bones are dark brown and black with grey edges, with slight differential burning.

Graves 1, 31(2), 33, 39, 49, 50, and 56 exhibit mainly dark blue and blackened bones with slight calcination and light grey coloring appearing on the edges and in places along the external cortical surfaces. This type of coloration is typical of bones burned between 500–645°C. The bones from Graves 13, 15(2), 19, 23, 29, 30, 31(1), 36, and 38(2) exhibit progression with temperatures gradually increasing from around 200–300°C up to 500–645°C as shown by mainly dark brown and black bones from low temperature exposure and dark and light grey and white bones due to high temperatures.

Bone fragments from graves 2, 3, 9, 12, 24, 25, 26, 27, 28, 34(1), 34(2), 39(2), 40, 42, 43, 51, and 52 are mainly tan, brown, black, and grey in color; this shows exposure to mainly low to moderate temperatures around 200–300°C and reaching 500°C in places. The bones from Graves 7 and 53 are mainly dark blue in color, suggesting an estimated temperature range of 500–645°C; however, there are small areas of tan and grey indicating a lower temperature range and areas of white due to exposure to temperatures over 645°C.

The bones from Graves 10, 14, and the sample 70(2) from Grave 70 are mainly tan in color; however many of the long bone fragments are black, dark blue, and white in color and just starting to reach complete calcination. Bones from Graves 6, 17, 22, 44, 47, 57, 60, 61, and 68(1) are tan in color with blue, black grey, and white colors along the edges; this type of coloration is indicative of low to medium burning (200–645°C), with exposure to slightly higher temperatures around the edges. Bones from Grave 21 are light blue and light grey in color, with the smaller fragments being tan in color. It appears that temperatures were moderate (200–500°C), with lower heat in certain areas.

modre. Kosti iz vzorca 68(2) iz groba 68 so predvsem svetlo sive in rumeno-rjave, kosti iz vzorca 70(1) iz groba 70 so svetlo sive in rumeno-rjave, pri čemer nekateri odlomki kažejo znake kalcinacije, medtem ko so kosti iz groba 77 večinoma kalcinirane z redko ohranjenimi svetlo sivimi odlomki. V grobovih 32, 35(2), 62, 63, 65 in 72 prisotne kosti so kalcinirane bele in modro-sive barve. Takšna obarvanost je značilna za izpostavljenost temperaturam 500–645 °C.

Na Brinjevi gori so bile štiri osebe izpostavljene temperaturam v razponu 200–300 °C, 20 oseb temperaturam v razponu 200–500 °C, 26 oseb temperaturam v razponu 200–645 °C, 15 oseb temperaturam v razponu 500–645 °C in le ena oseba temperaturam nad 645 °C. Čeprav je bila večina kosti izpostavljenih nizkim temperaturam, številni zbiri kažejo obarvanost, značilno za izpostavljenost temperaturam nad 500 °C ter do in preko 645 °C.

Vzorci razpok na površini kosti razkrivajo sežig s prisotnim mehkim tkivom, medtem ko teža žganih skeletnih ostankov posameznikov niha med 2,4 g in 544,1 g. Skupna teža zbranih žganih skeletnih ostankov iz Brinjeve gore znaša 5909,6 g, s povprečjem 89,5 g na posameznika. Teže kosti ni mogoče neposredno povezati s starostjo v času smrti ali spolom oseb, saj nizke vrednosti niso vezane na mlajše osebe temveč na količino za pokop zbranih kosti. Teže odlomkov kosti treh velikostnih razredov iz Gračiča pod Brinjevo goro predstavljajo 51 %, 42 % oz. 7 % žganih skeletnih ostankov, pri čemer največji ohranjeni odlomek zastopa lobanjo in meri 73,5 mm. V nekaterih grobovih so bile prisotne tudi živalske kosti.

Miklavž na Dravskem polju[25]

Analiziranih je bilo osem vzorcev žganih skeletnih ostankov iz osmih grobov[26], v katerih je bilo devet oseb (*Pril. 1*). V petih izmed šestih grobov je bilo osebam mogoče določiti starostni razpon: štiri osebe so bile mlajše od 23 let, dve osebi sta bili starejši od 14 let. Obarvanost in vzorci razpok na odlomkih

[25] Črešnar, Murko 2014.

[26] Dva vzorca iz dveh grobov sta bila pridobljena s flotacijo.

Long bone fragments from sample 35(1) from grave 35 range in color from tan, black, blue to white; although the cranial fragments are white due to calcination and exposure to constant high temperatures over 645°C. Bones from Graves 15(1), 20, 37, and 58 are dark brown in color, indicating low temperatures around 200–300°C. Bones from Grave 38(2) are dark blue and dark brown with slight grey and white edges. Long bone fragments from Grave 45 are light grey and white with black edges due to a state of near calcination with the other bones being tan and light grey in color. Grave 59 and 73 have light brown, dark brown, grey and blue bones. The bones from sample 68(2) from Grave 68 are predominately light grey and tan, those from sample 70(1) from grave 70 are light grey and tan, with a few showing signs of calcination, and those from Grave 77 are mainly calcined with a few light grey bones. Graves 32, 35(2), 62, 63, 65, and 72 contained bones that are calcined white and blue-grey in color. This coloration is typical of burning between 500–645°C.

In total from Gračič bellow Brinjeva gora, there are four individuals within the 200–300°C range, twenty individuals within the 200–500°C range, twenty-six individuals within 200–645°C, fifteen within 500–645°C, and only one individual at over 645°C. While most of the bones were burned at lower temperatures, many of the assemblages exhibit coloring typical of burning over 500°C, up to and exceeding 645°C.

Fracture patterns revealed in-flesh burning with weights of cremated remains ranging from 2.4 g to 544.1 g. The total collected bone weight from Gračič bellow Brinjeva Gora was 5909.6 g with an average of 89.5 g per individual. The bone weights are not directly related to age at death or sex of the individuals as the low weights are directly related to the amounts collected for burial and not younger individuals. Weight proportions for Gračič bellow Brinjeva gora are 51%, 42%, and 7% with a cranial fragment measuring 73.5 mm being the largest bone fragment. Animal bones were discovered in several of the burials.

Miklavž na Dravskem polju[25]

Eight cremations from eight graves[26] representing nine individuals (*App. 1*) were analyzed. Five out of the six graves contained individuals that could be assigned an age estimation: four individuals less than 23 years of age, two individuals aged at 14+ years.

[25] Črešnar, Murko 2014.

[26] Two of the samples were acquired from flotations from two graves.

kosti kažejo na sežig ostankov pri nizkih temperaturah, verjetno kmalu po smrti in ob prisotnosti mehkega tkiva. Prisotnih ni bilo odlomkov, na osnovi katerih bi bilo mogoče zanesljivo določiti spol, prav tako v nobenem primeru ni bilo opaziti jasnih patoloških sprememb ali znakov poškodb, ki bi nakazovali na vzrok smrti. Obarvanost, vzorci razpok in prisotnost živalskih kosti v grobovih so skladni s pogrebnimi običaji drugih poznobronastodobnih in starejšeželeznodobnih najdišč slovenske Štajerske. Dve značilnosti načina pokopa Miklavža, ki izrazito odstopata napram drugim žganim pokopom v Sloveniji, predstavljata dvojni pokop iz groba 10 in občutno večji zbir žganih skeletnih ostankov iz groba 5. Dvojni pokop vključuje ostanke novorojenčka in starejše osebe, stare med 14 in 21 let. Čeprav spola starejše osebe v grobu ni bilo moč določiti, je možno, da dvojni pokop predstavlja otroka (novorojenčka) skupaj z družinskim članom. Teža zbira žganih skeletnih ostankov iz groba 5 je dovolj visoka, da lahko predstavlja odraslo osebo, četudi ni bil prisoten celoten skelet. Velikost zbira močno odstopa od drugih analiziranih žganih skeletnih ostankov, ki so večinoma tehtali manj kot 100 g.

Rogoza[27]

Zbir kosti iz Rogoze sestavlja 26 vzorcev žganih skeletnih ostankov iz dveh ločenih grobov[28] (*Pril. 1*). V vzorcih so večinoma prisotni povsem kalcinirani in nedoločljivi odlomki. V nekaterih vzorcih so prisotni odlomki lobanje in dolgih kosti, predpostavljeno človeških, vendar v nobenem primeru ni mogoče z gotovostjo trditi, ali gre za človeške ali živalske kosti. Prepoznani so bili tudi odlomki človeških zob, pri čemer eden predstavlja stalni spodnji podočnik. Korenina le-tega je bila sicer po smrti poškodovana, vendar je na osnovi ohranjenega dela zoba mogoče določiti minimalno starost 11 let. Ni pa znano, ali zobje najdeni pri flotaciji pripadajo eni ali več osebam. Na osnovi majhne količine prisotnih in analiziranih odlomkov je nemogoče z gotovostjo določiti spol ali starost, čeprav gre na osnovi morfoloških značilnosti in velikosti nekaterih odlomkov v zbiru iz gomile 2 najverjetneje za odraslo osebo.

Na nobenem izmed odlomkov ni bilo odkritih znakov patoloških sprememb, medtem ko vzorci razpok kažejo na sežig kosti ob prisotnosti mehkega

[27] Črešnar 2021 (v tisku); glej tu Črešnar, Rogoza.

[28] Dva vzorca sta bila vzeta neposredno iz žare (V-8, V-10), medtem ko je bilo preostalih 24 vzorcev pridobljenih s flotacijo sedimentov iz gomil.

The coloring and fracturing of the bone fragments indicate that the remains were burned at low temperatures, likely soon after death and with the flesh attached. There were no fragments from which to accurately assess sex and there were no obvious pathologies or signs of trauma from which to ascertain an idea of the cause of death of any of the individuals. The coloration, fracture patterns, and presence of animal bones from the graves are consistent with the burial practices from other Late Bronze and Early Iron Age sites in Slovenian Styria. Two mortuary features discovered from the Miklavž cremations which are remarkably different from other cremation burials in Slovenia includes a double burial from Grave 10 and a significantly larger bone assemblage from Grave 5. The double burial includes the remains of a perinate and an older individual, between 14–21 years of age. Although sex could not be determined of the older individual, it is possible that the double burial represents a child (perinate) together with a family member. The large assemblage of Grave 5 contains enough bone by weight to represent an adult individual, despite not all the skeleton being present. This large collection differs from other analyzed cremations in that most burned bone assemblages are less than 100 g.

Rogoza[27]

The assemblage of cremated bones from Rogoza consists of 26 samples of cremated remains from two separate graves[28] (*App. 1*). The samples are comprised mainly of unidentifiable fragments, which are completely calcined. There are skull and long bone fragments present in several of the samples; it is assumed that these fragments are human but none of these fragments could definitively be classified as either human or animal. We also identified human tooth fragments with one fragment being from a permanent mandibular canine. The root of this tooth has been lost due to postmortem damage, but a minimum age of 11 years can be established from the present development of the tooth. It cannot be known whether the teeth from the flotation samples are from the same individual or multiple persons. Neither age nor sex could be determined with complete accuracy from the small amount of fragments present for analysis, although it is likely the individual from the barrow 2 is an adult, based on the morphology and size of several fragments.

[27] Črešnar 2021 (in print); see here Črešnar, Rogoza.

[28] Two of the samples were taken directly from the urns (V-8, V-10), whereas other 24 samples were acquired from flotations of sediments from the two barrows.

tkiva. Visoka stopnja kalcinacije večine odlomkov kaže na popolno oksidacijo organskih snovi ob dlje trajajoči izpostavljenosti temperaturam nad 700–800 °C.

Za Raščico pri Krogu[29]

Starosti in spola analizirane ene osebe iz groba Za Raščico (*Pril. 1*) ni bilo mogoče določiti. Večina kosti je manjših od 5 mm in tako predstavlja skromno ohranjen zbir z majhnimi do srednje velikimi odlomki. Kosti so bile izpostavljene visokim temperaturam nad 645 °C. Vzorec razpok je skladen s sežigom telesa relativno kmalu po smrti. Poleg delov lobanje in okončin ni prisotnih drugih skeletnih elementov.

ZAKLJUČKI

Čeprav je bilo skupno analiziranih 186 oseb iz devetih različnih najdišč, izvira večina podatkov o načinu pokopavanja iz grobov iz obdobja kulture žarnih grobišč.

Med proučenimi vzorci je bila le v dveh primerih nedvomno prisotna več kot ena oseba. Rezultati študije torej kažejo, da so bile umrle osebe praviloma pokopane vsaka v svoj grob ter da ostanki različnih oseb ob sežigu niso bili pomešani.[30] Le redko so bili odkriti ostanki mladostnikov, kar je v nasprotju z vzorcem umrljivosti pri populacijah v preteklosti.[31]

Za pokop je bil izbran zgolj manjši delež sežganih ostankov, saj je večina grobov vsebovala manj kot 200 g kosti. Ob upoštevanju ugotovitve, da je povprečna teža žganih ostankov v arheoloških kontekstih 1625 g,[32] je jasno, da je bila za pokop izbrana le simbolna količina kostnih ostankov kremirane osebe, ki pa je predstavljal njen zadosten del.[33]

Sledovi gorenja na sežganih ostankih niso razkrili ponavljajočega se vzorca izpostavljanja določenih delov telesa drugačnim pogojem sežiga, kar je morda posledica majhne količine za pokop zbranih ostankov, saj je celovito razumevanje vzorcev gorenja in položaja telesa na grmadi brez celotnega skeleta močno oteženo. Ker ostanki kažejo izpostavitev nizkim temperaturam (*sl. 1F*), je verjetno, da je bil proces žganja po propadu mehkega tkiva ustavljen ali prepuščen izgorevanju, kar pojasni svetlo rjavo obarvanost ostankov.

[29] Sankovič, Šavel 2010; Jereb, Sankovič, Šavel 2014.
[30] Thomas 2011, 115.
[31] Thomas 2011, 118.
[32] McKinley 1993, 284.
[33] Thomas 2011, 171.

There were no pathologies discovered on any of the fragments and the fracture patterns indicate that the bones were burned while the flesh was still attached. The high degree of calcination of the majority of the fragments indicates complete oxidation of the organic components at temperatures above 700–800°C for an extended period of time.

Za Raščico pri Krogu[29]

Age and sex could not be determined for the one individual analyzed from the grave from Za Raščico (*App. 1*). Majority of bone fragments are smaller than 5 mm, representing small to moderate fragment size and moderate preservation. Bones were burned at high temperatures, over 645°C. Fracture patterns are consistent with the body having been burned relatively soon after death. No other skeletal elements aside from cranial and limb bones are present.

CONCLUSIONS

Although a total of 186 individuals were analyzed from nine different sites, the majority of the mortuary data came from Urnfield Culture burials.

Of the studied samples, only two contained the remains of more than one individual and it may be that the deceased individual was placed into their own urn and that the remains of more than one individual were not commingled after firing, thus explaining only single burials.[30] Very few juveniles were recovered, which is in contrast to mortality patterns of ancient populations.[31]

Only a small proportion of the cremated remains were collected for burial, as the majority of the graves contained less than 200 g of bone. With a cremated body from an archaeological setting weighing an average of 1625 g,[32] it is apparent that what was collected for inclusion in the urn was a token deposit and considered an adequate representation of the deceased.[33]

The burning patterns on the remains did not reveal a trend in one area of the body being differentially burned than others; however, this may be directly related to the small amount collected for burial as without the entire skeleton, the comprehensive burnings patterns and placement on the pyre cannot be defined. With the low temperatures of burning exhibited on the remains (*fig. 1F*), it is likely that after the skeletal remains were clear of tissue, it appears that firing process was stopped or allowed to

[29] Sankovič, Šavel 2010; Jereb, Sankovič, Šavel 2014.
[30] Thomas 2011, 115.
[31] Thomas 2011, 118.
[32] McKinley 1993, 284.
[33] Thomas 2011, 171.

Žgani ostanki iz vseh obravnavanih najdišč kažejo izrazito upogibanje in sukanje kosti, vzdolžno pokanje, nazobčano diagonalno lomljenje ter ukrivljeno vzdolžno in prečno drobljenje površine. Zaradi upogibanja je pri številnih odlomkih lobanje prišlo do ločitve notranje in zunanje stene. Takšni vzorci so značilni za kosti, sežgane skupaj z mehkim tkivom.[34] V nekaterih grobovih je bila površina kompakte odlomkov dolgih kosti prekrita s tanko patino. To je verjetno posledica luščenja kompakte, značilnega za sežig kosti s prisotnim mehkim tkivom.[35] Podobne znake je prepoznati tudi na preostalih odlomkih dolgih kosti, ki kažejo zlome, skladne s sežigom kosti ob prisotnosti mehkega tkiva. Raznolikosti v zlomih med različnimi skeletnimi elementi ni bilo.

V večini grobov je razmerje med določenimi in nedoločenimi odlomki kosti zelo dobro. Zastopane so bile kosti iz vseh delov skeleta, pri čemer je večina odlomkov pripadala lobanji in dolgim kostem. Čeprav slednje morda odraža pristranskost pri zbiranju kosti, se tako lobanja kot dolge kosti ob sežigu običajno ohranijo bolje kot preostali deli skeleta, kar verjetno pojasni njihovo prevlado med žganimi skeletnimi ostanki.

Žgane živalske kosti so bile odkrite na petih izmed devetih najdišč. Predpostavljamo, da so bile živali sežgane na grmadi skupaj z umrlo osebo, saj temperature gorenja živalskih kosti ne odstopajo od temperatur, ki so jim bili izpostavljeni človeški ostanki. Za vključitev živalskih kosti v grobove so mogoče številne razlage, denimo daritev hrane, obredni ostanki ali živali kot osebni spremljevalci umrlim osebam.[36] Pri tem je potrebno opozoriti, da majhne količine živalskih kosti podobno kot pri človeških ostankih verjetno predstavljajo le simbolno prisotnost v pogrebnem ritualu.[37]

[34] Thurman, Willmore 1980, 281; Mayne Correia 1997, 279.
[35] Buikstra, Swegle 1989, 255.
[36] Thomas 2011, 160.
[37] Črešnar, Thomas 2015; glej tu Toškan.

burn out, thus explaining the light brown coloring of most of the remains.

The cremated remains from all sites in this study have been subjected to a high level of warping, twisting, longitudinal cracking, serrated diagonal fracturing, and curved lateral and transverse splintering. Separation of the inner and outer tables and along sutures has occurred on many cranial fragments due to warping. This type of fracturing is typical of bones burned with the flesh still adhering.[34] There are several graves with slight patina checking on the cortical surface of several long bone fragments; this may be due to cortical exfoliation typical of in-flesh burning,[35] as the rest of the long bone fragments exhibit fracturing consistent with burning with flesh attached to the bones. There were not any differences in fracturing between bone elements.

For the majority of the graves, the ratio of identified to unidentified bone fragments was extremely good. The bones from all skeletal areas were identified, with the majority of the bones having been identified as being skull and long bone fragments. While this may reflect possible collection bias, both the cranium and long bones tend to survive cremation better than other areas of the body, which may explain why these fragments comprise the majority of the cremations.

Cremated animal bones were recovered from five of the nine sites; it is presumed the animals were burned on the cremation pyre with the deceased individual and selected for placement in the urn, as the temperature of firing of the animal bones is consistent with that of the human remains. There are numerous explanations for the inclusion of animal bones in the funerary urns, such as food offerings, ceremonial refuse, or personal companions to the deceased;[36] however it is important to note that as with the human remains, the small percentage of included animal bones may represent a token deposit and an intentional aspect of burial ritual.[37]

[34] Thurman, Willmore 1980, 281; Mayne Correia 1997, 279.
[35] Buikstra, Swegle 1989, 255.
[36] Thomas 2011, 160.
[37] Črešnar, Thomas 2015. See here Toškan.

Priloga 1. Preglednica z vsemi osnovnimi podatki o obravnavanih skeletnih ostankih iz grobov z grobišč Slivnica pri Mariboru, Ptuj – Potrčeva ulica, Pobrežje v Mariboru, Ruše II, Gračič pod Brinjevo goro, Miklavž na Dravskem polju, Rogoza pri Mariboru, Za Raščico pri Krogu pri Murski Soboti.

Appendix 1. Table, containing all the basic data from studied skeletal remains from graves from cemeteries of Slivnica near Maribor, Ptuj – Potrčeva ulica, Pobrežje near Maribor, Ruše II, Gračič below Brinjeva gora, Miklavž na Dravskem polju, Rogoza near Maribor, Za Raščico near Krog near Murska Sobota.

Obdobje / Period (Najdišče / Site)	Grob št. / Grave Nr.	Teža / Weight (g)	Število oseb / No. of ind.	Starost (leta) / Age (years)	Spol / Sex	Patologije / Pathology	Temp. žganja / Temp. of firing	Živalske kosti / Animal bones
Pozna bakrena doba - zgodnja bronasta doba / Late Copper Age - Early Bronze Age								
Slivnica pri Mariboru	12	1335	2	< 14; > 20	Nedol. / Unident.; Ženski / Female?	Otrok - zlomi na dlaneh in stopalih / Juvenile - hand and foot fractures	> 650°C	
Slivnica pri Mariboru	13	28,1	1	Nedol. / Unident.	Moški? / Male?		> 650°C	
Srednja - pozna bronasta doba / Middle - Late Bronze Age								
Ptuj - Potrčeva ulica	1	40,6	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	
Kultura žarnih grobišč / Urnfield period								
Pobrežje v Mariboru	1	56,3	1	Odrasel? / Adult?	Nedol. / Unident.		200-300°C	Svinja / Pig
Pobrežje v Mariboru	3	32,3	1	Odrasel / Adult	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	14	160,3	1	> 16	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	19	146,1	1	Nedol. / Unident.	Nedol. / Unident.		500-650°C	
Pobrežje v Mariboru	22	543,5	1	> 16	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	26	420,4	1	> 20	Nedol. / Unident.	Osteoartritis / Osteoarthritis	200-300°C	
Pobrežje v Mariboru	27	130,7	1	21-30	Ženski / Female		500-650°C	Nedol. / Unident.
Pobrežje v Mariboru	32	144,6	1	> 14	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	36	307,9	1	> 15	Moški / Male		200-500°C	
Pobrežje v Mariboru	39	125,9	1	Odrasel? / Adult?	Nedol. / Unident.	Poroznost lobanje / Cranial pitting	200-300°C	
Pobrežje v Mariboru	55	44,5	1	> 13	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	56	37	1	Odrasel / Adult	Nedol. / Unident.		200-300°C	Nedol. / Unident.
Pobrežje v Mariboru	57	302,3	1	> 15	Nedol. / Unident.		200-650°C	Jelen, svinja / Red deer, pig
Pobrežje v Mariboru	59	95,9	1	> 15	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	61	15,3	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	63(1)	130,5	1	Odrasel / Adult	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	63(2)	9,2	1	Odrasel? / Adult?	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	66	3,9	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	68	176,5	1	> 20	Nedol. / Unident.		200-650°C	

Obdobje / Period (Najdišče / Site)	Grob št. / Grave Nr.	Teža / Weight (g)	Število oseb / No. of ind.	Starost (leta) / Age (years)	Spol / Sex	Patologije / Pathology	Temp. žganja / Temp. of firing	Živalske kosti / Animal bones
Pobrežje v Mariboru	70	35,3	1	Otrok / Infant	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	72	34,2	1	> 15	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	73	152,1	1	> 14	Nedol. / Unident.		200-650°C	Nedol. / Unident.
Pobrežje v Mariboru	75	66,6	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	76	9,6	1	Otrok / Infant	Nedol. / Unident.		> 650°C	
Pobrežje v Mariboru	78	54,8	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	79	130,4	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	80	20	1	Nedol. / Unident.	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	81	136,6	1	21-30	Moški / Male		200-650°C	
Pobrežje v Mariboru	83	14,7	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	84	248,6	1	> 16	Nedol. / Unident.	Poroznost lobanje / Cranial pitting	200-500°C	Nedol. / Unident.
Pobrežje v Mariboru	85	143,4	1	> 13	Nedol. / Unident.		200-300°C	Svinja / Pig
Pobrežje v Mariboru	86	228,9	1	> 20	Nedol. / Unident.		200-500°C	Nedol. / Unident.
Pobrežje v Mariboru	87	57,7	1	Odrasel / Adult	Nedol. / Unident.	Poroznost lobanje / Cranial pitting	200-300°C	
Pobrežje v Mariboru	91	259,9	1	Odrasel / Adult	Nedol. / Unident.		200-500°C	Nedol. / Unident.
Pobrežje v Mariboru	94	467	1	> 20	Moški / Male	Poroznost lobanje / Cranial pitting	200-650°C	
Pobrežje v Mariboru	96(1)	106,7	1	> 14	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	96(2)	2,5	1	Odrasel / Adult	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	97(1)	41,9	1	> 20	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	97(2)	8,6	1	Odrasel / Adult	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	98	39,4	1	> 13	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	100	13	1	Odrasel / Adult	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	101	232,7	1	> 16	Nedol. / Unident.	Neenakomerna debelina gobaste kostnine lobanje / Varying diploe thickness	200-500°C	Jelen / Red deer
Pobrežje v Mariboru	102	35,8	1	Nedol. / Unident.	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	104	2,4	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	105	17,5	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	

Obdobje / Period (Najdišče / Site)	Grob št. / Grave Nr.	Teža / Weight (g)	Število oseb / No. of ind.	Starost (leta) / Age (years)	Spol / Sex	Patologije / Pathology	Temp. žganja / Temp. of firing	Živalske kosti / Animal bones
Pobrežje v Mariboru	106	149,3	1	> 16	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	107	196,9	1	> 14	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	108	76,6	1	Odrasel / Adult	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	109	29,1	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	111	91,9	1	> 13	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	112	156,1	1	> 15	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	113	148,5	1	> 16	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	114b(1)	14,5	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	114b(2)	33	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	116	15,7	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	Nedol. / Unident.
Pobrežje v Mariboru	117(1)	5,1	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	117(2)	5,5	1	Otrok / Infant	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	120	13,7	1	Odrasel? / Adult?	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	122	312,6	1	> 50	Nedol. / Unident.		200-650°C	Koza ali ovca / Goat or sheep
Pobrežje v Mariboru	134	330,4	1	> 16	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	135	573,7	1	16-20	Nedol. / Unident.		200-650°C	Nedol. / Unident.
Pobrežje v Mariboru	137(1)	155,4	1	> 20	Nedol. / Unident.		200-650°C	Kuna / Stone marten
Pobrežje v Mariboru	137(2)	163,9	1	> 14	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	138	15,5	1	Otrok / Infant	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	139	62,2	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	141	79,5	1	< 30	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	144	57,5	1	Odrasel? / Adult?	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	147	133,6	1	> 13	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	148	117,3	1	> 13	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	153	111,2	1	Odrasel? / Adult?	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	156	147,2	1	> 17	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	164	186,1	1	> 15	Nedol. / Unident.		200-300°C	
Pobrežje v Mariboru	171	295,5	1	> 11	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	173	112,5	1	> 15	Nedol. / Unident.		200-500°C	

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Pobrežje v Mariboru	175	56,9	1	Odrasel? / Adult?	Nedol. / Unident.		200-650°C	
Pobrežje v Mariboru	177	49,8	1	Odrasel? / Adult?	Nedol. / Unident.		200-500°C	
Pobrežje v Mariboru	178	57	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Ruše II	3	9,9	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	
Ruše II	4	7,3	1	Odrasel / Adult	Nedol. / Unident.		200-300°C	
Ruše II	9	8,4	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	
Ruše II	10	85,7	1	25-45	Moški? / Male?		200-650°C	
Ruše II	11(1)	27,6	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	
Ruše II	11(2)	10,1	1	Infant	Nedol. / Unident.		> 650°C	
Ruše II	13(1)	51,2	1	> 15	Nedol. / Unident.		200-500°C	
Ruše II	13(2)	17,1	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	
Ruše II	14(1)	13,9	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Ruše II	14(2)	1,1	1	Nedol. / Unident.	Nedol. / Unident.		> 650°C	
Ruše II	16	144,2	1	> 16	Nedol. / Unident.		200-500°C	
Ruše II	18	39,6	1	> 14	Nedol. / Unident.		200-300°C	
Ruše II	19(1)	129,6	1	> 15	Nedol. / Unident.		200-300°C	Nedol. / Unident.
Ruše II	19(2)	2	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Ruše II	20	15,8	1	> 20	Nedol. / Unident.	Osteoartritis / Osteoarthritis	200-300°C	Nedol. / Unident.
Ruše II	21	31,9	1	Odrasel / Adult	Ženski? / Female?		200-300°C	
Ruše II	23	63	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Ruše II	24	19,3	1	< 23	Nedol. / Unident.		200-300°C	
Ruše II	26	8,9	1	Odrasel / Adult	Nedol. / Unident.		200-300°C	
Ruše II	29(1)	27,5	1	> 14	Nedol. / Unident.		200-300°C	
Ruše II	29(2)	0,4	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Ruše II	29(3)	12	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Ruše II	32	290,6	1	> 21	Ženski? / Female?		200-650°C	Nedol. / Unident.
Ruše II	34	18,2	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	
Ruše II	8-1993	300,4	1	> 17	Nedol. / Unident.		200-650°C	
Ruše II	9-1993	112	1	Odrasel / Adult	Nedol. / Unident.		200-300°C	

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Gračič pod Brinjevo goro	1	85,1	1	Odrasel? / Adult?	Nedol. / Unident.		500-650°C	
Gračič pod Brinjevo goro	2	115,7	1	> 16	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	3	65,4	1	Odrasel? / Adult?	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	6	24,0	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	7	43,4	1	Odrasel / Adult	Nedol. / Unident.		500-650°C	
Gračič pod Brinjevo goro	9	39,7	1	Odrasel / Adult	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	10	194,7	1	11-15	Nedol. / Unident.		200-650°C	Nedol. / Unident.
Gračič pod Brinjevo goro	12	368,4	1	Odrasel / Adult	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	13	38,5	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	14	15,5	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	15(1)	83,8	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	
Gračič pod Brinjevo goro	15(2)	25,3	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	17	32,1	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	19	10,6	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	20	116,6	1	> 50	Nedol. / Unident.	Poroznost lobanje / Cranial pitting	200-300°C	Nedol. / Unident.
Gračič pod Brinjevo goro	21	129	1	Odrasel / Adult	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	22	7,5	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	23	121,3	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	24	105,6	1	Odrasel / Adult	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	25	112,6	1	Nedol. / Unident.	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	26	47,4	1	> 15	Nedol. / Unident.		200-500°C	Nedol. / Unident.
Gračič pod Brinjevo goro	27	326,1	1	Odrasel / Adult	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	28	544,1	1	> 21	Nedol. / Unident.	Poroznost lobanje / Cranial pitting	200-650°C	
Gračič pod Brinjevo goro	29	8,8	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	30	77,7	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	Nedol. / Unident.
Gračič pod Brinjevo goro	31(1)	15,6	1	> 15	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	31(2)	48,1	1	12-15	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	32	39,8	1	Odrasel? / Adult?	Nedol. / Unident.		200-650°C	

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Gračič pod Brinjevo goro	33	2,4	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	34(1)	401,7	1	> 13	Nedol. / Unident.		200-500°C	Koza ali ovca / Goat or sheep
Gračič pod Brinjevo goro	34(2)	130,9	1	> 14	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	35(1)	126,2	1	> 11	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	35(2)	66,1	1	Nedol. / Unident.	Nedol. / Unident.		500-650°C	
Gračič pod Brinjevo goro	36	29,3	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	37	25,1	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	Govedo / Cow
Gračič pod Brinjevo goro	38(b)	51,8	1	> 9	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	38(2)	29,4	1	Odrasel? / Adult?	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	39(1)	19,5	1	Nedol. / Unident.	Nedol. / Unident.		500-650°C	
Gračič pod Brinjevo goro	39(2)	2,7	1	Nedol. / Unident.	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	40	106,4	1	Nedol. / Unident.	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	42	41,6	1	Odrasel? / Adult?	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	43	25,8	1	Nedol. / Unident.	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	44	21,6	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	45	89,8	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	47	92,2	1	Odrasel / Adult	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	49	37,7	1	Nedol. / Unident.	Nedol. / Unident.		500-650°C	
Gračič pod Brinjevo goro	50	70,8	1	> 15	Nedol. / Unident.		500-650°C	
Gračič pod Brinjevo goro	51	56,1	1	Odrasel / Adult	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	52	49,9	1	Odrasel? / Adult?	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	53	129,4	1	Odrasel / Adult	Ženski? / Female?		500-650°C	
Gračič pod Brinjevo goro	56	176,4	1	Odrasel / Adult	Nedol. / Unident.		500-650°C	
Gračič pod Brinjevo goro	57	37,5	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	58	72,5	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	
Gračič pod Brinjevo goro	59	33,0	1	Nedol. / Unident.	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	60	97,7	1	> 16	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	61	65,8	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	62	34,6	1	Odrasel / Adult	Nedol. / Unident.		500-650°C	

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Gračič pod Brinjevo goro	63	53,8	1	Odrasel / Adult	Nedol. / Unident.		500-650°C	
Gračič pod Brinjevo goro	65	13,2	1	Odrasel / Adult	Nedol. / Unident.		500-650°C	
Gračič pod Brinjevo goro	68(1)	50,0	1	> 15	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	68(2)	226,7	1	> 17	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	70(1)	72,7	1	Odrasel? / Adult?	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	70(2)	23,1	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Gračič pod Brinjevo goro	72	45,6	1	Odrasel? / Adult?	Nedol. / Unident.		500-650°C	Nedol. / Unident.
Gračič pod Brinjevo goro	73	60,1	1	> 11	Nedol. / Unident.		200-500°C	
Gračič pod Brinjevo goro	77	385,5	1	> 15	Nedol. / Unident.		> 650°C	
Miklavž na Dravskem polju	2	110,9	1	< 23	Nedol. / Unident.		200-300°C	
Miklavž na Dravskem polju	4	0,8	1	Nedol. / Unident.	Nedol. / Unident.		200-300°C	
Miklavž na Dravskem polju	5	1049,8	1	15-18	Nedol. / Unident.		200-300°C	Govedo / Cow
Miklavž na Dravskem polju	6	160,2	1	> 14	Nedol. / Unident.		200-300°C	
Miklavž na Dravskem polju	7	2,1	1	Nedol. / Unident.	Nedol. / Unident.		> 650°C	
Miklavž na Dravskem polju	8	7,6	1	Nedol. / Unident.	Nedol. / Unident.		200-> 650°C	
Miklavž na Dravskem polju	9	43,6	1	> 14	Nedol. / Unident.		200-300°C	
Miklavž na Dravskem polju	10	28,8	2	Novorojenček / Perinate; > 14	Nedol. / Unident.		200-> 650°C	
Starejša železna doba / Early Iron Age								
Rogoza pri Mariboru	Gomila / Tumulus 1	43,6	1	Nedol. / Unident.	Nedol. / Unident.		200-650°C	
Rogoza pri Mariboru	Gomila / Tumulus 2	97,8	1	Odrasel / Adult	Nedol. / Unident.		> 650°C	
Za Raščico pri Krogu	1	100,8	1	Nedol. / Unident.	Nedol. / Unident.		> 650°C	

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