

Appendix 1.

Catalogue of Cremated Human Remains from Unterradlberg

Funerary Practices of the Middle to Late Bronze Age Transition in Unterradlberg, Lower Austria. An Interdisciplinary Approach to Investigate Burial Mounds and Cremation Graves

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The following catalogue contains the description of the cremated human remains and commingled unburnt remains from the site Unterradlberg.

1. Burial mound 563

NHM AA Inv. no.: 100729

MNI: 2

Cremated remains 563, 564	Individual 1	Individual 2
Find numbers SU 563	1, 3, 7, 8, 14, 16, 20	1, 7
Find numbers SU 564	1, 7, 13, 20	–
Burning stage (after Wahl 1981)	IV (650–700° C)	IV–V (650–800 °C)
Total weight SU 563 [g]	466.39	17.16
Total weight SU 564 [g]	21.98	
Σ	488.37	
Age at death	adultus	infans Ia? (0–3 years)
Sex	undetermined	undetermined

Tab. 1. Overview of the osteological data from burial mound 563.

1.1. SU 563

1.1.1. Individual 1

The total weight of the remains of the adult Individual 1 is 488.37 g. The age-at-death estimation is based on the morphology of diaphyseal fragments and two permanent, fully formed tooth roots. No diagnostic fragments were available for sex estimation. The human cremated remains are predominantly white with some grey and grey-blue areas.

1.1.2. Individual 2

The cremated remains of Individual 2 weigh 17.6 g. Most of the bone fragments are completely calcined and show some grey spots. Individual 2 is estimated as infans I (0–6 years) based on open epiphyseal joints and growth-related bone remodelling.

1.2. SU 564

The total weight of the cremated remains from SU 564 is 21.98 g. The cremated remains from SU 564 (ditch and area around the burial chamber) cannot be distinguished morphologically from the adult Individual 1 from inside the burial chamber SU 563. They were probably relocated through agricultural activity.

1.3. Unburnt bones from SU 563

Besides the cremated remains, a number of unburnt human remains were uncovered in the western part of the chamber. These fragments indicate potentially disturbed or secondary relocated burials. The unburnt bones comprised an ulna fragment with an open epiphysis of a young individual (infans Ia, 0–3 years, 0.56 g). Further cranial fragments, presumably of an infans I (0–3 years, 2.33 g) were identified based on bone morphology.

2. Burial mound 602

NHM AA Inv. no.: 1007131

MNI: 1

Cremated remains 602	Individual 1
Find numbers	1
Burning stage (after Wahl 1981)	V (800 °C)
Total weight [g]	0,73
Age at death	adult?
Sex	undetermined

Tab. 2. Overview of the osteological data from burial mound 602.

Two diaphyseal fragments with a total weight of 0.73 g were found near the remnants of burial mound 602. The fragments show evidence of intense cremation, reaching temperatures above 800 °C. The morphology points towards an adult individual.

3. Burial mound 627

NHM AA Inv. no.: 1007131

MNI: 2

Cremated remains 627	Individual 1	Individual 2
Find numbers	5, 7, 10, 17	7, 10
Burning stage (after Wahl 1981)	III–IV (550–650 °C)	IV–V (650–800 °C)
Total weight [g]	851.56	20.11
Age at death	adultus	infans I (0–6 years)
Sex	ambiguous with a tendency to female	undetermined

Tab. 3. Overview of the osteological data from burial mound 627.

3.1. Individual 1

The cremated remains of Individual 1 weigh 851.56 g. The bone fragments are predominantly white with some black and grey discolorations. Based on bone morphology and closed epiphyses, the individual's age at death is estimated to be adult. Elements from all body areas were preserved, two of which are suitable for morphological and metric sex determination. Based on a mastoid process and dens axis head measurements, this individual was estimated as ambiguous with a tendency to the female sex.

3.2. Individual 2

A second individual was evident based on open epiphyseal joints and growth-related bone remodelling, suggesting a non-adult individual (infans I, 0–6 years). All areas of bone elements are represented. The bones were predominantly calcined and showed a few grey areas.

3.3. Unburnt bones

Commingle within the cremated remains, further unburnt human bones were identified. The unburnt human remains comprise a total weight of 5.69 g. The open epiphyseal joints indicate a nonadult individual, according to the bone morphology and growth-related bone remodelling, most likely an infans I (0–6 years). A piece of the eye socket (orbita) shows bone remodelling, which points to a young individual as well.

4. Cremation grave 632

NHM AA Inv. no.: 1007131

MNI: 1

Cremated remains 632	Individual 1
Find numbers	2, 10, 8
Burning stage (after Wahl 1981)	IV–V (650–800 °C)
Total weight [g]	30.52
Age at death	infans I–infans II (3–9 years)
Sex	undetermined

Tab. 4. Overview of the osteological data from cremation grave 632.

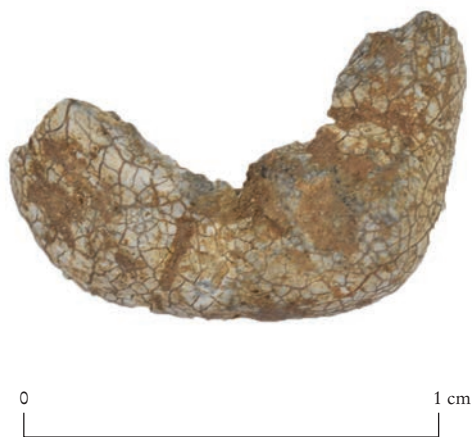


Fig. 1. Partially preserved molar crown of the nonadult Individual 1 (Photo: H. Skerjanz).



Fig. 2. Porotic hyperostosis, Individual 1 (Photo: H. Skerjanz).

4.1. Individual 1

The age at death of Individual 1 is estimated between 3 and 9 years based on tooth development (permanent incisor root, molar crown, partially resorbed deciduous tooth root). The bone condition shows primarily complete calcination with occasional grey areas. Notably, the molar crown shows little sign of heat exposure, likely because it was unerupted and protected within the mandible during the cremation process (Fig. 1).

4.2. Unburnt bones

Unburnt bone fragments were also discovered within this grave context. The fragments include a fragment of a human scapula as well as diaphyseal fragments. The unburnt bones are strikingly bleached, possibly due to taphonomic processes or prolonged exposure to sunlight.

5. Cremation grave 635

NHM AA Inv. no.: 1007131

MNI: 2

Cremated remains 635	Individual 1	Individual 2
Find number	6, 7	7
Burning stage (after Wahl 1981)	V (800°C)	V (800 °C)
Total weight [g]	259.19	0.94
Age at death	adultus	infans I (0–6 years)
Sex	undetermined	undetermined

Tab. 5. Overview of the osteological data from cremation grave 635.

5.1. Individual 1

The cremation weight of the adult Individual 1 is 259.19 g. Due to the lack of diagnostic elements, an exact age-at-death and sex determination is not possible. However, the morphology of bone fragments, fully formed tooth roots, and closed epiphyses confirm adult status. The cremation reached temperatures of up to 800 °C, evident in the completely calcined, white bones with sporadic grey-blue areas. Elements from all areas of the body were identified. Notably, several cranial fragments exhibit porotic hyperostosis.

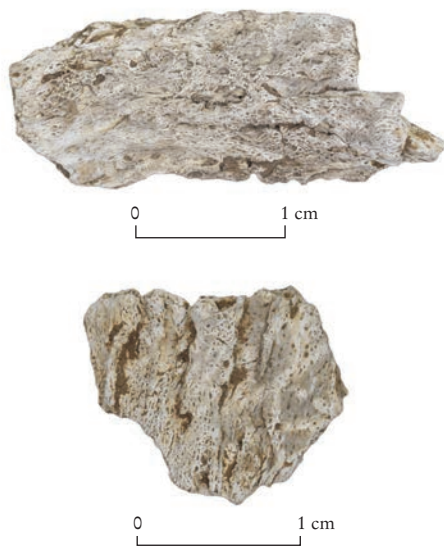


Fig. 3. Active periostitis on two neurocranial fragments (Photos: H. Skerjanz, L. Waltenberger).

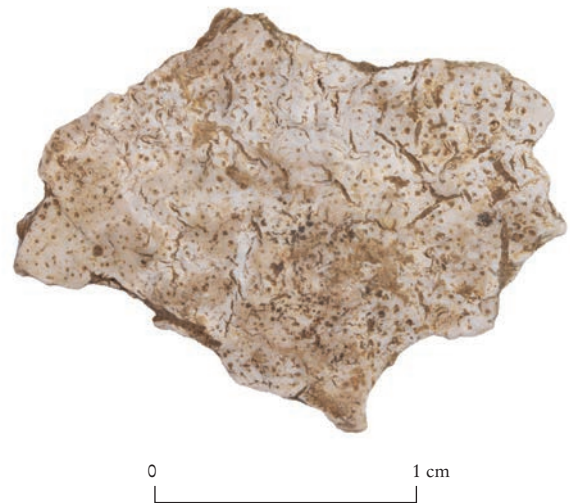


Fig. 4. Ectocranial lesions, Individual 2 (Photo: H. Skerjanz).

5.2. Individual 2

In total, 0.94 g of Individual 2 were identified. The cremated remains were intermingled with Individual 1 in find number 7. The burnt remains exhibit primary bone formation and growth-related bone remodelling. This, and the general bone size, e.g. of a vertebra, indicates an infans I (0–6 years).

6. Grave chamber 818, grave complex 817

NHM AA Inv. no.: 1007127

MNI: 2

Cremated remains 818	Individual 1	Individual 2
Find numbers	1, 10, 17	10, 17
Burning stage (after Wahl 1981)	III–IV (550–650 °C)	V (800 °C)
Total weight [g]	1018.71	34.29
Age at death	adultus	infans I (0–6 years)
Sex	undetermined	undetermined
Pathologies	cribra cranii	cribra cranii, periostitis

Tab. 6. Overview of the osteological data from grave chamber 818, grave complex 817.

6.1. Individual 1

The cremated remains of the adult Individual 1 weigh 1018.71 g. Fragments from all body areas were identified. The burning temperature is estimated between 550 and 700 °C, evidenced by a range of coloration like white-grey to blue-grey with some black areas. While an exact age at death could not be determined, the bone morphology and presence of permanent tooth roots suggest an adult individual. Sex determination was not possible due to a lack of diagnostic elements. Notably, corroded bronze was found on a viscerocranial fragment. Pathological lesions comprise porotic hyperostosis (Fig. 2).

6.2. Individual 2

Individual 2 had a total weight of 34.29 g. The cremation temperature was up to 800 °C, evident due to the overall white colour. Individual 2 is nonadult and falls into the age category infans I (0–6 years) based on bone morphology and open epiphyses such

as a pars basilaris part of the occipital bone. A part of the zygomatic bone with immature bone formation and growth-related bone remodelling as well as a mandible fragment with tooth sockets for deciduous teeth further support the age estimation. Furthermore, cranial fragments show porotic hyperostosis and periosteal reactions (Figs. 3–4).

7. Cremation grave 814

NHM AA Inv. no.: 1007136

MNI: 2

Cremated remains 814	Individual 1	Individual 2
Find numbers	1, 3, 5, 6, 10, 13	5
Burning stage (after Wahl 1981)	IV (650–700 °C)	IV–V (650–800 °C)
Total weight [g]	419.90	5.12
Age at death	infans II (6–12 years)	infans I (0–6 years)
Sex	undetermined	undetermined

Tab. 7. Overview of the osteological data from cremation grave 814, grave complex 817.

7.1. Individual 1

The total weight of Individual 1 is 419.90 g. The estimated burning temperature ranged from 650 to 700 °C, with some grey areas present on the predominantly white bones. Fragments from all anatomical areas were identified. Two petrous bones of differing sizes confirm the presence of two individuals. A root of a permanent tooth indicates a minimum age of 10 years. Open epiphyses and the overall bone size further support a nonadult individual. Based on tooth eruption, the age at death of the individual was estimated as infans II (6–12 years).

7.2. Individual 2

A total of 5.12 g could be clearly assigned to a second nonadult individual. Fragments from the cranium, thorax, upper extremities, diaphyses, and autopodia were identified. The petrous bone of the second individual is distinguishable from the first individual due to its smaller size. The size of fragmented vertebrae, open epiphyses, and fragments of an ulna diaphysis indicate different ages at death for the two individuals, with Individual 2 likely falling into the infans I (0–6 years) category.

8. Cremation grave 816

NHM AA Inv. no.: 1007136

MNI: 1

Cremated remains 816	Individual 1
Find numbers	1
Burning stage (after Wahl 1981)	IV–V (650–800 °C)
Total weight [g]	22.68
Age at death	nonadult?
Sex	undetermined

Tab. 8. Overview of the osteological data from cremation grave 816, grave complex 817.

The cremated remains from grave context 816 weigh a total of 22.68 g. While the size of the bones suggests a possible nonadult age at death, this cannot be confirmed with certainty due to the absence of other indicators. Identifiable bone elements include fragments from the cranium, thorax, lower extremities, and diaphyses.

9. Cremation grave 742

NHM AA Inv. no.: 1007136

MNI: 1

Cremated remains 742	Individual 1
Find numbers	1, 2
Burning stage (after Wahl 1981)	V (800 °C)
Total weight [g]	90.2
Age at death	adultus
Sex	undetermined

Tab. 9. Overview of the osteological data from grave chamber 742, grave complex 817.

90.2 g of cremated remains were documented from inside cremation grave 742. Elements from all areas of the body were identified. Based on the size of the bones and the presence of a single-rooted tooth root, the remains are determined to be from an adult individual. The cremated remains are fully calcined.

10. Burial mound complex 817

NHM AA Inv. no.: 1007136

MNI: 2

All combined, the cremated human remains from burial complex 817 weigh a total of 90 g. Due to limited contextual information regarding the exact find location, the osteological evaluation is summarized and documented here. It can be assumed that these are admixtures of the respective individual grave contexts such as the central burial chamber and cremation graves. The bones are predominantly white with occasional grey areas. Besides bones that clearly belonged to one or more adult individuals, the size of some bone fragments could indicate a younger individual (possible infans II, 6–12 years). However, this is not supported by other elements such as open epiphyses.

11. SU 628

NHM AA Inv. no.: 1007131

The precise find location of cremated human remains within SU 628 is not clear. Osteologically and archaeologically, the remaining cremated remains from 628 cannot be distinguished or grouped with the adult Individual 1 from burial chambers 627 and 818, or cremation grave 742. However, the remains are documented here for completeness. The total weight of all human remains from SU 628 is 121.54 g.