

# ANTHROPOLOGICAL ANALYSIS OF THE CELTIC CEMETERY UNEARTHED BY ROAD NO. 83 AT MÉNFŐCSANAK

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**Abstract:** The results of a general anthropological and paleopathological examination of 24 individuals from the earliest Celtic cemetery in the Carpathian Basin, excavated at Ménfőcsanak are presented in this paper. Due to the low number of the buried individuals, the demographic analysis could not be done. According to the metric and morphological investigation of the skulls, the serie is characterized by the long, dolichocrane-headed individuals, despite the assumption that the earliest Celtic immigrants were mainly short, brachycrane-headed. Due to the pathological analysis, the populaton buried here had the usual diseases with the exception of lesions on the skull of a female that indicate the possibility of surgical trepanation.

**Keywords:** Ménfőcsanak, physical anthropology, Celtic Period

## INTRODUCTION

The very final epoch of the Pre- and Protohistory of the Carpathian Basin, the so-called La Tène period of Late Iron Age started with the appearance of Celtic ethnic groups arriving from the west. These peoples first conquered a part of Transdanubia following the River Danube. These were the territories of people belonging to the Hallstatt culture, being absorbed into the newly arrived after the conquest. The intense amalgamation amongst peoples was further enhanced by multiple periods of Celts arriving from different directions sweeping away other autochthonous ethnic groups throughout their expansion.

The anthropological overview of the Celts of today's Hungary was first described by János Nemeskéry and Márta Deák, based on the examination of 35 skeletal remains of 14 sites. According to them, beside brachycranial (Alpine, Dinaric) components, dolichocranial (Cromagnoid, Nordid, Mediterranean) types also occur. The latter were presumably the characteristics of the indigenous people of the Carpathian Basin, and those that were assimilated throughout their wanderings.<sup>1</sup> Subsequently, Ildikó K. Hankó and István Kiszely published the analysis of the finds from the first credibly excavated inhumated burials of the biritual cemetery of Kölesd-Lencsepuszta.<sup>2</sup> Thereafter, Kinga Éry published the anthropological analysis of the finds from two excavation sites in Fejér County, and Zsuzsanna K. Zoffmann of several, mostly cremated burials from Somogy County.<sup>3</sup>

The anthropological finds from times following the Celtic immigration, primarily inhumated and later decisively cremated burials, originate mostly from Transdanubia. Outlining the anthropological spectrum was also made difficult by the appearance of the cremation ritual in burials.<sup>4</sup> Following the political transition of 1989, thanks

<sup>1</sup> NEMESKÉRI-DEÁK 1954.

<sup>2</sup> K. HANKÓ-KISZELY 1967.

<sup>3</sup> ÉRY 1972, 1984; NÉMETH *et al.* 2002.

<sup>4</sup> ZOFFMANN 2001; ZOFFMANN 2002; TÓTH *et al.* 2015.

to excavations preceding large investment projects, the number of Celtic sites has increased significantly. Several cemeteries including a large number of graves came to light.

Following the slow increase in the amount of anthropological samples, Zs. K. Zoffmann compared the Transdanubian material examined up to that time to the Prehistoric (male) skull series of Europe using a biostatistical method (Penrose analysis of biological distance).<sup>5</sup> According to her results, the Penrose relations of the five examined skull-series show differing orientations. Based on the analysis of the male skull series of Slovakia, she assumes that the majority of amalgamation took place here between the indigenous and the newly arrived Celts. The further existence of the autochthonous population is clearly detectable amongst the Transdanubian and Bohemian population from the Neolithic on, although they disappeared by the time of the Roman invasion.

#### TEST SAMPLES AND METHODOLOGY

The part of the cemetery that became known through the excavations of András Uzsoki was further explored by Andrea Vaday prior the construction of Road no. 83.<sup>6</sup> The majority of the graves are inhumations in this segment of the cemetery, but cremated burials and graves without bodies, or burials of a questionable rite also appear. Unfortunately, part of the skeletal remains either got lost during moving and a burst pipe and is not identifiable. There were some burials that contained no examinable bones or no human remains at all.<sup>7</sup>

Anthropological remains were first examined by Zs. K. Zoffmann, followed by the survey of the author of this paper. Anthropological remains of altogether 24 individuals were examinable. The samples are in a medium condition, a significant part of the material is fragmented or deficient. Two cremated and two biritual burials had been excavated on the site, therefore the examinable material had little representational value.

When determining morphological sex in cases of inhumation, 21 metric and morphological characteristics of cranial and skeletal bones regarding sex dimorphism were considered.<sup>8</sup>

In approximating biological age in the *Infans* age group, the development and eruption order of deciduous and permanent teeth<sup>9</sup> and methods based on the length of limb bones<sup>10</sup> were used. In *Juvenis* cases the chart established for recording the extent of the union of the epiphysis<sup>11</sup> was used. In cases of adults peripheral alterations of the facies symphyseos ossis pubis on the pelvis,<sup>12</sup> morphological appearance of facies articularis,<sup>13</sup> the extent of tooth wear<sup>14</sup> and in some cases inner structural alterations in the proximal epiphysis of the humerus and the femur<sup>15</sup> were taken into consideration.

Metric and morphological evaluation was carried out following the methods of R. Martin and K. Saller,<sup>16</sup> V. P. Alekseev and G. F. Debetz.<sup>17</sup> Results were calculated using Bernert's software package.<sup>18</sup> Body height was estimated based on W. R. Rösing,<sup>19</sup> T. Sjøvold<sup>20</sup> and Zs. Bernert.<sup>21</sup> Classification of parameters and indices was based on the categories of Alekseev and Debetz.<sup>22</sup> Calculated body height was grouped following the categories of Martin.

Macroscopic pathological discrepancies<sup>23</sup> and hereditary epigenetic characteristics were also recorded in the survey.<sup>24</sup> In cases of cremated burials, basically the same methods were used determining sex and age at death as in the cases of non-burnt skeletal finds. In addition, burnt skeletal finds were grouped and numbered based on anatomical characteristics. Their colour hues, extent of being fractured and cracked were also recorded.<sup>25</sup>

<sup>5</sup> ZOFFMANN 2001; ZOFFMANN 2002.

<sup>6</sup> VADAY 2006a; VADAY 2006b.

<sup>7</sup> See descriptions of excavated graves published in the archaeological announcements in this volume.

<sup>8</sup> ÉRY *et al.* 1963.

<sup>9</sup> SCHOUR–MASSLER 1941.

<sup>10</sup> UBELAKER 1989; SCHEUER–BLACK 2000.

<sup>11</sup> FEREMBACH *et al.* 1979.

<sup>12</sup> TODD 1920.

<sup>13</sup> LOVEJOY *et al.* 1985.

<sup>14</sup> MILES 1963; PERIZONIUS 1981.

<sup>15</sup> NEMESKÉRI *et al.* 1960.

<sup>16</sup> MARTIN–SALLER 1957.

<sup>17</sup> ALEKSEEV–DEBETZ 1964.

<sup>18</sup> BERNERT 2005.

<sup>19</sup> RÖSING 1988.

<sup>20</sup> SJØVOLD 1990.

<sup>21</sup> BERNERT 2008.

<sup>22</sup> ALEKSEEV–DEBETZ 1964.

<sup>23</sup> AUFDERHEIDE–RODRIGUEZ–MARTIN 1998; ORTNER 2003.

<sup>24</sup> HAUSER–DE STEFANO 1989.

<sup>25</sup> CHOCHOL 1961; NEMESKÉRI–HARSÁNYI 1968; GEJVALL 1963; UBELAKER 1989; WALKER–MILLER 2005.

## DESCRIPTION OF THE GRAVES

**Burial No. 301: Individual age 17 to 19**

Find consisting of a skull and postcranial bones. Age at death was estimated based upon the ossification of the epiphyseal plates.

*Teeth:* No caries were found on the 17 teeth preserved. Level of abrasion is ASII.

*Anatomical variations:* none

*Pathology:* none

**Burial No. 303.1: Female aged 35–45**

Find consisting of a fairly well-preserved skull and skeletal fragments. The age of the individual at the time of her death was estimated based upon the abrasion of teeth and the ossification of cranial sutures. Sexualization index is indifferent. Absolute sizes refer to long – medium wide – very high cranium indices referring to being hyperdolicho-ortho-hyperachrocrane. The index of the medium broad forehead is hypereurymetope. Cranial contour of cranium is ovoide in the norma verticalis, house-shaped in norma occipitalis, glabella is level 2, curvo-occipitale type. The face and the upper face is low, according to absolute parameters. The index of the orbit is hyperchamae-conch, that of the nose is hyperleptorrhine. fossa canina is medium pitched, the bottom edge of apertura piriformis is of anthropine character. Based on the size of the radius, calculated stature is medium height according to Sjøvold and Bernert, tall according to Pearson–Rösing.

*Teeth:* No caries on the 30 teeth preserved, abrasion level is AM.

*Anatomical variations:* Sutura metopica on the skull.

*Pathological lesions:* Trauma of frontal cranial bone, presumably caused by a blunt object.

**Burial No. 303.2: Male aged 40–50**

The find consists of a skull of medium condition. The facial part is fragmented and incomplete. The age of death was estimated based upon the abrasion of teeth and the ossification of cranial sutures. Sexualisation index refers to masculine characteristics. According to absolute parameters, the medium long and medium broad cranium is of a mesochrane index. Broad forehead is of an eurimetope index. Contour of the cranium is spheroid in the norma verticalis and house shaped in norma occipitalis. Glabella is level 3, protuberantia occipitalis externa is level 2. The contour of the occiput is curvoccipital.

*Teeth:* Out of the 18 teeth preserved, lower right and left M1 and upper left M1 had caries. Upper right M1 and lower left M2 had fallen out ante mortem.

*Anatomical variations:* non-examinable

*Pathological lesions:* non-examinable

**Burial No. 307: Female(?) aged 23–59**

Sex of the find consisting of fragments of postcranial bones were determined by the gracility of the long bone fragments and the morphological characteristics of the pelvis. Age had to be estimated in a fairly wide range due to no age indicators being available.

*Teeth:* none

*Anatomical variation:* non-examinable

*Pathological lesions:* non-examinable

**Burial No. 343/B: Male(?) aged 20–30**

Poorly preserved find consisting of remains of the skull and postcranial bones like long bones lacking epiphysis, fragmented vertebrae and pelvis. Very little of characteristics supporting sex determination were available, that of the skull in particular. Besides while the fragmented pelvis showed female characteristics, the diameter of the caput of the femur, the estimated length of the femur and the robusticity of the postcranial bones would suggest the remains belonged to a male. Estimating the age at the time of death was limited to the analysis of teeth

abrasion and inner structure alterations of the proximal epiphysis of the fragmented femur. Obtaining metric data was only possible in the case of long bones, where primarily the diameter of diaphysis' were measurable.

*Teeth:* No caries occurred on 6 teeth preserved. Level of abrasion is ASII-AM.

*Anatomic variations:* non-examinable

*Pathological lesions:* Periostitis on diaphysis of left tibia.

#### **Burial No. 343/B: Individual, male (?) aged cca. 20**

Anthropological find consisting of only one fragment of the mandibula, and some fragments of longbones and ribs. Determination of sex is uncertain, only robusticity of cranial bones suggest the deceased being a male. Estimation of age was limited to taking the level of teeth abrasion into consideration.

*Teeth:* 3 teeth preserved had no caries on them. Level of abrasion is ASI-ASII. The root of the lower wisdom tooth was partly developed.

*Anatomical variations:* non-examinable

*Patological lesion:* non-examinable

#### **Burial No. 345/B1: Female age 30–40 (?)**

Find consisting of a skull and some fragments of long bones and ribs. The age at the time of the death of the individual was estimated based on the abrasion of the two remaining teeth and on the inner structural alterations of the proximal epiphysis of the femur. Because of the very few observable characteristics, it can only be assumed, that the remains belong to a woman.

*Teeth:* two preserved teeth had no caries on them. Abrasion is level ASII-AM.

*Anatomical variations:* none

*Pathological lesions:* Level 1 cribra orbitalia in the right orbit. There are traces of a healed trepanation on the right side of the fragmented os parietale. Due to the fragmentary nature of the find, it was only possible to determine a length of 6 cms, and an estimated diameter of 8 centimeters of this trepanation. Edges are sharp. There is another trace of trepanation on the right side of os occipitale with similar healed sharp edges. The wound on the fragment is 6 centimeters likewise, and according to this, the estimated diameter had to be at least 8 centimeters in this case as well.

#### **Burial No. 345/B2: Cremation – child age Infans I (0–7yrs)**

Find consisting of microfragmented mainly skull and less postcranial remains that had been cremated. Age at the time of death was estimated based on the developmental status of the only remaining premolar tooth. The colour of the approximately 200 fragments is greyish white, homogeneous, fracture lines are linear. Based on the above, remains may have been burnt at 600 °C. The remains weigh 49.9 grammes. A piece of longbone belonging to an animal otherwise not specified, also occurred among the remains.

*Teeth:* a premolar tooth, that allowed age determination.

*Anatomical variations:* non-examinable

*Pathological lesions:* non-examinable

#### **Burial No. 347: Female age 30 to 40**

The find consists of a skull in medium condition (facial bones are fragmented and incomplete) and postcranial bones (longbones without epiphysis', pelvis and vertebral fragments) in a bad condition. The age of the individual at the time of death was estimated based on the abrasion of teeth and the ossification of the sutures. Sexualisation index shows feminine characteristics. Because of the fragmentary state of the skull, only a few metric parameters and morphological characteristics could be recorded. The skull is medium long and medium broad. The contour of the cranium is pentagonoid in norma verticalis, glabella is level 2, protuberantia occipitalis externa is level 0, occiput's profile is curvo-occipitale.

*Teeth:* 28 teeth preserved, on lower left M2 a caries occurs on the neck. On some teeth there are traces of dental calculus. Abrasion is level AM.

*Anatomical variations:* A separate tiny bone occurs at the lambda point on the skull (os lambdae)

*Pathological lesions:* none

**Burial No 348: Female age 20–x yrs**

The find consists of postcranial bones in a very bad condition and a minimum amount of cranial remains. Sex determination was only possible based on the general appearance, while concerning age determination no clues were available.

*Teeth:* none

*Anatomical variations:* Separate little bone on the skull in the lambda-point (os lambdae)

*Pathological lesion:* non-examinable

**Burial No. 350: Male age 30–40**

Anthropological finds consist only of postcranial fragments (fragments of longbones, pelvis, sacrum, phalanges) the skull was not preserved. The sexualisation index shows strong masculine characteristics. The age at the time of the individual's death was estimated based on the inner structural alterations of the proximal epiphysis. Stature, calculated based on the length of the femur and the radius, is medium tall according to Bernert, while is in the tall range according to Pearson–Rösing.

*Teeth:* none

*Anatomical variations:* a separate tiny bone on the skull in the lambda-point (os lambdae)

*Pathological lesion:* non-examinable

**Burial No. 361: Male? age 40–59**

Of the anthropological remains only the skull was available, in medium condition, facial parts were not preserved. Age at death was estimated based on the abrasion level of teeth, partial alveolar resorption, and the ossification of the sutures. Sexualization index is indifferent. According to absolute parameters, the skull is very long, medium broad, of hyperdolichocrane index. Wide forehead is hypereurymetope. The contour of the cranium is ovoide in the norma verticalis and house shaped in norma occipitalis. Glabella is level 2–3, protuberantia occipitalis externa is level 1. Occiput's profile is curvo-occipitale.

*Teeth:* No caries were found on the 10 teeth preserved. Molars on the mandibula and first left molar had fallen out ante mortem. Abrasion is level 4–5.

*Anatomical variations:* none

*Pathological lesions:* none

**Burial No. 362: Individual of undeterminable sex and age**

Anthropological find consisting of small size bone fragments that were not suitable for analysis.

*Teeth:* non-examinable

*Anatomical variations:* non-examinable

*Pathological lesions:* non-examinable

**Burial No. 364: Female age 20–x ???**

Find consisting of postcranial fragments and a minimal amount of cranial remains. Sex was determined based on the robusticity of the postcranial bones, and the muscular adhesion surfaces. Age could only be estimated due to the lack of age references.

*Teeth:* non-examinable

*Anatomical variations:* non-examinable

*Pathological lesions:* non-examinable

**Burial No. 367/A: Individual age 40–x**

The find consists of cranial fragments and some vertebrae. Postcranial bones are missing. Determining sex encountered difficulties, since only the glabella region and a fragmented mandibula was available, based on which sex is not determinable. Age at the time of death was approximated based on the partial alveolar resorption occurring on the mandibula and the ossification of sutures.

*Teeth:* tooth abrasion the one remaining upper wisdom tooth is level ASII. On the mandibula molars had fallen out, in addition partial alveolar resorption occurs on the parodontium.

*Anatomical variations:* non-examinable

*Pathological lesions:* non-examinable

**Burial No. 376/B: Male age 40–59**

Find consisting of a skull and postcranial fragments. Age at the time of death was approximated based on the level of teeth abrasion. Sex was determined based on the definition of os occipitale on the skull, and that of linea aspera on the femur.

*Teeth:* No caries occurred on remaining 9 teeth. Level of abrasion is API-APC.

*Anatomical variations:* non-examinable

*Pathological lesions:* non-examinable.

**Burial No. 379: Male aged 23–59**

The find consists of a skull in poor condition and fragmented postcranial bones (longbones, vertebrae, pelvis, and phalanges). The age at the time of death was estimated based on the abrasion of teeth and the ossification of the sutures. Sex was determined based on the few characteristics observed on the skull fragments.

*Teeth:* In the case of the three teeth preserved, there is caries on bottom left M1, in addition the crown of the tooth had been worn away almost down to the root. There is an abscess/cyst at bottom right M1. Teeth abrasion is level AM-API.

*Anatomical variations:* none

*Pathology:* a fragmented presumably fibula in bad condition shows slight signs of periostitis

**Burial No 465: Child aged Infans I–II. (1–14 yrs)**

Find consisting of some tooth fragments and bone shards. Age of death was estimated based on the teeth.

*Teeth:* Abrasion of remaining teeth is level ASI.

*Anatomical variations:* non-examinable

*Pathological lesions:* non-examinable

**Burial No 737: Male aged 40–50**

Find consisting of a skull in medium condition and fragmented and incomplete postcranial bones. Age at the time of death was estimated based on the abrasion level of the teeth and the ossification of sutures. The sexualization index is of masculine characteristics. Cranium is medium long. Contour of the skull in norma verticalis is sphenoid, glabella is level 3, protuberantia occipitalis externa is level 1–2. Occiput's profile is curvooccipital.

*Teeth:* out of 16 teeth preserved 5 has cervical caries (upper left and bottom right M3, and two bottom and an upper premolaris)

*Anatomical variations:* none

*Pathological lesions:* slight cribra orbitalia in the right orbit, left orbital part of the frontal bone is fragmented. On an ulna and a left side radius found in the grave, although it is not provable that they belong to the individual, a healed fracture occurs with minimal callus formation showing traces of a slight inflammation.

**Burial No. 744: Female??? age 35–45**

Skull is in bad condition, facial bones are fragmented and incomplete. Only a few fragmented longbones were preserved of the incomplete postcranial bones. No ribs or remains of vertebrae or the pelvis were found. Age at death was estimated based on the abrasion of teeth and the ossification of sutures. Sexualization index (–0.86) is of feminine characteristics. The skull was not suitable for recording metrical data due to its fragmented nature and warpedness, only some morphological characteristics could be recorded. Contour of cranium is pentagonoide in the norma verticalis and house shaped in norma occipitalis. Glabella is level 2, protuberantia occipitalis externa is level 0. Profile of the occiput is moderately curvo-occipitale.

*Teeth:* No caries were found on the 9 teeth preserved. Abrasion is level AM.

*Anatomical variations:* there are little suture bones on the right side of the lamboid suture (ossa suturae lambdoidea).

*Pathological lesions:* none



**Burial No. 752: Female age 34–43**

The find consists of a skull in a relatively good condition and postcranial bones in poor condition. Age at the time of death was estimated based on the level of abrasion of the teeth, the ossification of sutures, and the changes of the inner structure of the proximal epiphysis of the humerus and the femur. The sexualizational index ( $-0.50$ ) refers to feminine characteristics. According to the absolute parameters, the long – very narrow – medium high cranial index, the skull is hyperdolicho-ortho-acrocrane. The wide frontal bone's index is hypereurymetope. The contour of the cranium is ellipsoid in the norma verticalis, house-shaped in the norma occipitalis, both the glabella and the protuberantia occipitalis are level 1, the profile of the occiput is bathrocrane. The low, rhomboid shaped orbit is of chamaeconch index. Fossa canina is deep with moderate alveolar prognathism. Stature calculated based on the parameters of the longbones is medium tall according to Sjøvold and Bernert while it falls into the tall range according to Pearson–Rösing.

*Teeth:* out of the 21 teeth preserved the crown of the first molaris on the bottom right decayed presumably due to caries. Traces of inflammation are visible on the alveolus. Level of abrasion is AM.

*Anatomical variations:* There is a small bone on both sides of the lambdoid suture (ossa suture lambdoidea). Fossa olecrani is perforated on the right humerus.

*Pathological lesions:* a large dent, mark of a strike occurs on the right temporal bone also covering a part of the frontal bone, which may have been caused by a blunt object, which probably was the cause of the death of the individual. The superior auricular process on the first cervical vertebra is broadened, and some bottom thoracic vertebrae a minimal spondylosis deformans occurs. On the thoracic and lumbar vertebrae spondylodiscitis appears in the form of tiny holes. Also in the case of this individual, significant inflammation occurs on the top edge of the sacrum, that also affected the 5<sup>th</sup> lumbar vertebra.

**Burial No. 755: Male age 20–39**

Find consisting of a skull and postcranial bones in medium condition. Age at death was approximated based on the abrasion of teeth, the ossification of sutures, and the inner structural changes of the proximal epiphysis of the femur. Sexualizational index ( $+0.91$ ) refers to masculine characteristics. Due to the fragmentariness, only few metric and morphological data could be recorded. The skull is narrow, just as the forehead, according to its indices metriometope. Contour of the cranium is sphenoid in norma verticalis, glabella is level 3, protuberantia occipitalis externa is level 2. Stature calculated by the measures of the femur is medium tall according to Sjøvold and Bernert, while it falls in the tall range according to Pearson–Rösing.

*Teeth:* No caries were found on the 15 teeth preserved. Level of abrasion is AM.

*Anatomical variations:* none

*Pathological lesions:* none

**Burial No. 757: Female? age 23–29**

The find consists of a few skull and longbone fragments. Sex was determined primarily by the general morphological appearance of the bones, age at death was estimated by the abrasion of teeth.

*Teeth:* No caries were found on two teeth preserved. Level of abrasion is ASII-AM.

*Anatomical variations:* none

*Pathological lesions:* none

**Burial No. 760: “rob” Male age 20–30**

Find consisting of a skull in medium condition, and fragmented, incomplete postcranial bones. Age at the time of the individual's death was approximated based on the level of teeth abrasion, the ossification of sutures and the inner structural alterations of the proximal epiphysis of the femur. The sexualizational index is indifferent. According to absolute measures the long and wide cranium is of mesochrane index. The contour of the skull is pentagon-shaped in norma verticalis, and house-shaped in norma occipitalis. Glabella is level 2, protuberantia occipitalis externa is level 1. Profile of the occiput is curvoccipital. Stature calculated based on length of the femur is medium tall according to Sjøvold and Bernert, tall according to Pearson–Rösing.

*Teeth:* No caries was found on the remaining 26 teeth. Level of abrasion is ASII-AM.

*Anatomical variations:* none

*Pathological lesions:* none

**Burial No. 760: “grac” Male age 20–x**

The find consists of fragmentary postcranial bones. Determination of sex was based on the length of the femur and definiteness of linea aspera. Approximation of the age at death is uncertain, what certain is that the buried individual was of adult age.

*Teeth:* non-examinable

*Anatomical variations:* non-examinable

*Pathological lesions:* non-examinable

## RESULTS

*Table 1* contains basic data concerning the 24 individuals examined. According to that, 8 women, 11 men, 2 individuals of indeterminate sex and 3 children were buried in the graves. According to their age, 2 children age Infans I, 8 adultus, 3 adultus-maturus, 4 maturus, 6 adultus-senilis and one person of undeterminable age could be distinguished. Although due to the low number of cases overall conclusions cannot be drawn, distribution of sexes are quite even, but the number of elderly is significantly higher.

Being very fragmented, skulls can only provide little information. The number of measurable cases were low, resulting in even less data. (*Table 2, 3*) Being very fragmented, skulls can only provide little information. The number of measurable cases were low, resulting in even less data. (*Table 2, 3*) Based on this data, long and usually broad skulls dominate in the cases of men. According to indexes, mesocrany is typical. (3 cases!) The forehead is usually broad or medium broad, based on indices, mostly metriometope. (4 cases!) Facial bones were measurable in none of the cases. In cases of women, skull No. 303.1 is very long and medium wide, medium high, based on its indices it is hyperdolicho-chamea-acrocrane. The index of the medium wide forehead is eurymetope. The face and the upper face are low. The orbits are narrow and quite high, according to its indexes hyperchamaeconch, the nose is narrow and medium wide, based on its indexes it belongs to the leptorrhine category. The cranium of female No. 752 is very long, very tall and narrow, hyperdolicho-chamae-acrocrane according to its indices. The forehead is narrow, based on indices hypereurymetope. Face and upper face are low or extra low. Orbit is low and narrow, mesoconch according to its indices.

The material was not suitable for comparison and statistical analysis. Neither gerontomorphia nor tall stature is characteristic in the women's cases. This requires further examination. Body height was calculated using three different methods, in cases of both men and women fall in the category of medium height according to Sjøvold and Bernert, while using the calculation method of Pearson and Röring both sexes fall into the category of tall (*Table 4–7*).

In general, even though this is the earliest Celtic cemetery of the Carpathian Basin, this fact is not referred to by taxonomy types. Long head, broad face, gerontomorphic characteristics and tall stature refer to a rather Cromagnon and Nordic type, which does not exclude mixing in with other taxa throughout migration. Meanwhile, brachyran characteristics that are typical of early Celts cannot be traced in this series.

In general, illnesses are the usual ones, primarily appearing at an elderly age. The presumably trepanational case definitely requires further examination. Earliest trepanations in Europe originate from the Neolithic Age. They were surgical treatments (although it is debated by many), not symbolic procedures, they presumably rather served to heal battle injuries.



**Table 1.**  
The sex and age of the buried individuals

Grave No.	Sex	Gender index	Number of examinable characteristics	Age at death	Basis of determination of age at death
303.1	female	–027	15	35–45	abrasion of teeth
303.2	male	+110	10	40–50	abrasion of teeth, sutures ossification
307	female	–200	2	20–x	estimation
343/A	male	+100	3	20–30	abrasion of teeth, femur
343/B	male ?	–	–	20–30	teeth, sutures
345/B1	female ?	000	4	30–35	abrasion of teeth
345/B2	children	–	–	05–55	teeth
347	female	–109	11	30–40	abrasion of teeth, sutures ossification
348	female ?	–200	1	20–x	estimation
350/A	male	+150	4	30–40	femur
361	male ?	+025	8	40–59	abrasion of teeth, sutures ossification
362	?	–	–	?	–
364	female ???	+000	1	20–x	estimation
367	?	+033	3	40–x	sutures
376/B	male	+133	4	40–59	abrasion of teeth
379	male ?	+050	8	20–x	abrasion of teeth, sutures ossification
465	children	–	–	1–14	teeth, estimation
737	male	+083	6	40–50	abrasion of teeth, sutures ossification
744	male?	–0186	1	35–45	abrasion of teeth, sutures ossification
752	female	–050	16	34–43	long of the femur, abrasion of teeth
755	male	+0,91	11	20–39	abrasion of teeth, sutures ossification
757	female ?	(0,00	1	20–39	abrasion of teeth
760/A	male	+016	12	20–30	femur, abrasion of teeth
760/B	male	+100	2	20–x	estimation

**Table 2.**  
Individual cranial measurements and indices for males and females

Martin No.	Grave	Grave	Grave	Grave	Grave	Grave	Grave
	303.2	361	737	755	760/A	303.1	752
	male	male	male	male	male	female	female
1	183	189	172	–	188	186	179
5	–	–	–	–	–	103	99
8	142	135	–	137	147	131	129
9	99	99	–	92	–	94	99
10	130	118	–	122	130	113	119
11	–	–	–	–	124	118	113
12	–	111	–	–	–	109	109
17	–	–	–	–	–	136	129
20	–	–	–	–	–	–	111
38			–			–	–
40	–	–	–	–	–	106	94
43	105	109	–	102	–	106	103
45	–	–	–	–	–	–	–
46	–	–	–	–	–	–	–
47	–	–	–	–	–	104	101
48	–	–	–	–	–	61	55
51	–	–	–	–	–	41	38
52	–	–	–	–	–	30	31
54	–	–	–	–	–	22	–
55	–	–	–	–	–	48	43
60	–	–	–	–	–	–	–
61	–	–	–	–	–	–	–
62	–	–	–	–	–	–	–
63	–	–	–	–	–	–	–
65	–	–	–	–	–	109	105
66	99	101	–	–	106	94	90
69	–	–	–	–	35	30	26
70	61	67	–	–	63	61	57
71	30	27	–	–	–	30	29
8:1	77.60	71.43	–	–	78.19	70.43	72.07
17:1	–	–	–	–	–	73.12	72.07
17:8	–	–	–	–	–	103.82	100
20:1	–	–	–	–	–	–	62.01
20:8	–	–	–	–	–	–	86.5
9:8	69.72	73.33	67.15	67.15	–	71.76	76.74
47:45	–	–	–	–	–	–	–
48:45	–	–	–	–	–	–	–
52:51	–	–	–	–	–	73.17	81.58
54:55	–	–	–	–	–	45.83	–
63:62	–	–	–	–	–	–	–

**Table 3.**

Classification by Alekseev and Debetz for males and females

Martin No.	303.2	361	737	755	760/A	303.1	752
	male	male	male	male	male	female	female
8:1	m	hd	–	–	m	hd	hd
17:1	–	–	–	–	–	ort	ch
17:8	–	–	–	–	–	hakr	akr
20:1	–	–	–	–	–	–	ch
20:8	–	–	–	–	–	–	hakr
9:8	eumet	heumet	metr	metr	–	eumet	heumet
38	–	–	–	–	–	–	–
47:45	–	–	–	–	–	–	–
48:45	–	–	–	–	–	–	–
52:51	–	–	–	–	–	hch	meso
54:55	–	–	–	–	–	lept	–
63:62	–	–	–	–	–	–	–

**Table 4.**

Individual long bone measurements for males

Martin No.	Clavicle 1		Humerus 1		Ulna 1		Radius 1		Femur 1		Tibia 1		Fibula 1	
Graves	left	right	left	right	left	right	left	right	left	right	left	right	left	right
350/A	–	–	–	–	–	–	–	–	457	–	–	–	–	–
755	–	–	–	–	–	–	–	–	456	–	–	–	–	–
760/A	–	–	–	–	–	–	–	–	455	–	–	–	–	–

**Table 5.**

Average stature for males, by Sjøvold, Pearson–Rösing and Bernert

Grave	by Sjøvold	classification	by Rösing	classification	by Bernert	classification
350/A	169,71	tm	16592	m	170,6	tm
755	169,44	tm	16573	m	170,4	tm
760/A	169,17	tm	16554	m	170,2	tm

**Table 6.**

Individual long bone measurements for females

Martin No.	Clavicle 1		Humerus 1		Ulna 1		Radius 1		Femur 1		Tibia 1		Fibula 1	
Graves	left	right	left	right	left	right	left	right	left	right	left	right	left	right
303.1	–	–	–	–	–	–	228	–	–	–	–	–	–	–
752	127	121	287	–	–	–	204	–	–	–	–	–	–	–

**Table 7.**

Average stature for females, by Sjøvold, Pearson–Rösing and Bernert

Grave	by Sjøvold	classification	by Rösing	classification	by Bernert	classification
303.1	16971	tm	16592	m	1706	tm
752	16917	tm	16554	m	1702	tm

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