



ZDENĚK TVRDÝ

## ANTHROPOLOGY OF THE NEOLITHIC POPULATION FROM NITRA-HORNÉ KRŠKANY (SLOVAKIA)

**ABSTRACT:** Neolithic people of the Linear Pottery or Linearbandkeramik (LBK) culture buried their dead in the cemetery on the area of today's city of Nitra (Slovakia) at the end of the 6<sup>th</sup> millennium BC. This article aims to present a detailed description of skeletons along with a basic anthropological analysis. The material comprised of 77 individuals, including 28 juveniles, 19 males, 27 females and 3 indeterminable adults. Females were dying more often at the age under 35 years, males at an older age. The average stature in males reached 165.0 cm, in females 155.2 cm. Population from Nitra was dolichocranic, moderately robust with platymeric femurs. Distinct muscle topography, enthesopathies and other alterations on bones associated with long-term workload were noted in skeletal material. The health status of the population was affected by numerous dental caries, inflammations occurred, including one case of tuberculosis. Cribra orbitalia, porotic hyperostosis and Harris lines demonstrate stressful periods during the life of some individuals from Nitra. Violence among the first farmers is illustrated by cranial trauma in five individuals.

**KEY WORDS:** Slovakia - Neolithic - Anthropology - Demography - Palaeopathology

### INTRODUCTION

The city of Nitra is situated in western Slovakia on the border of the Carpathian Mountains and the Danube plain (*Figure 1*) in the fertile soil that has been used for the entire period from the Neolithic up to the present day. Burial ground in Nitra was discovered during the rescue research induced by the building of potato storage on Priemyslová Street in the local part Horné Krškany. The site is situated on the right bank terrace

in the distance of 250–300 m from the river Nitra, about 140 m above sea level. During the research conducted by Juraj Pavúk from the Archaeological Institute of the Slovak Academy of Sciences in Nitra in the years 1964–1965 there was uncovered 74 graves dated to the Early Phase of the Linear Pottery culture (Pavúk 1972, 5). Results of radiocarbon dating of 12 graves from Nitra (2/64, 5/64, 6/64, 19/65, 25/65, 27/65, 32/65, 35/65, 36/65, 41/65, 66/65, 70/65) in the Oxford laboratory are in detail reported in Griffiths

Received 4 August 2016; accepted 26 August 2016.

© 2016 Moravian Museum, Anthropos Institute, Brno. All rights reserved.

(2013, table B1). The dating determined the beginning of the cemetery with a 95.4% probability to 5370–5220 cal BC and the end to 5210–4980 cal BC (Whittle *et al.* 2013, 143).

Burials were uncovered in two parallel probes on an area of about 15 by 50 meters (*Figure 2*). The cemetery was not completely excavated, some graves were probably destroyed before the initiation of the archaeological research. There were found eight groups of cremated human bones which probably also belong to the Linear Pottery culture (Pavúk 1972, 39).

The graves were predominantly oriented from south-east to north-west, with depth from 0.7 to 1.7 m,

some graves intersected or touched each other. The only multiple burial was triple burial 48–49–50/65 in which female with two children were buried (*Figure 3*). Dead were deposited to the graves mostly on the left side in crouched position with their heads to the south-east and facing south. Among the grave goods there were ceramic vessels, ground and chipped stone industry, bone artefacts and Spondylus beads.

Skeletal remains from the Nitra cemetery were transported to Moravian Museum in Brno (Czech Republic), where J. Jelínek carried out basic demographic analysis presented in Pavúk (1972). In nineties E. Crubézy, J. Brůžek and other researchers

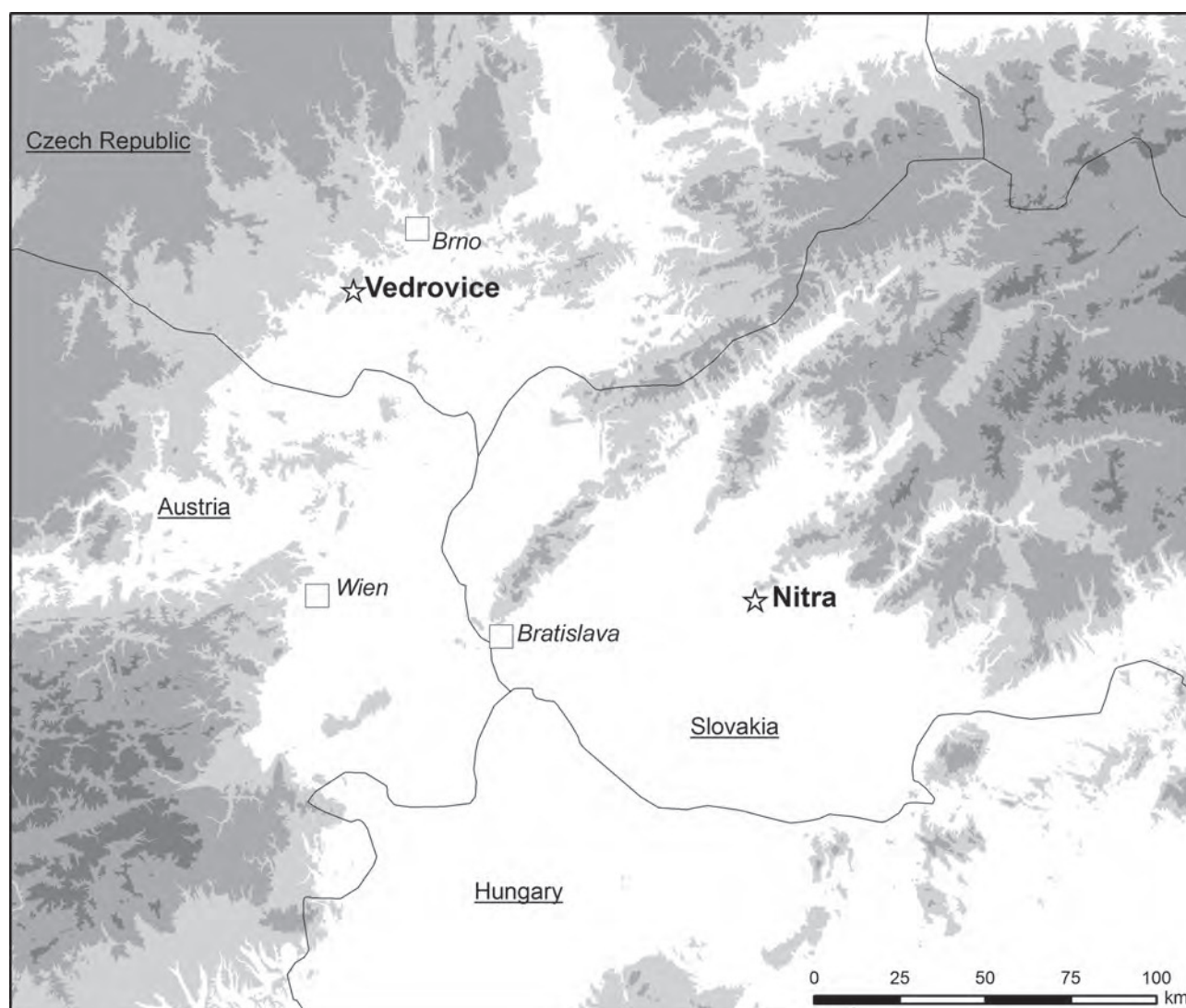


FIGURE 1. Map of LBK sites Nitra (Slovakia) and Vedrovice (Moravia), (digitalized by P. Neruda).

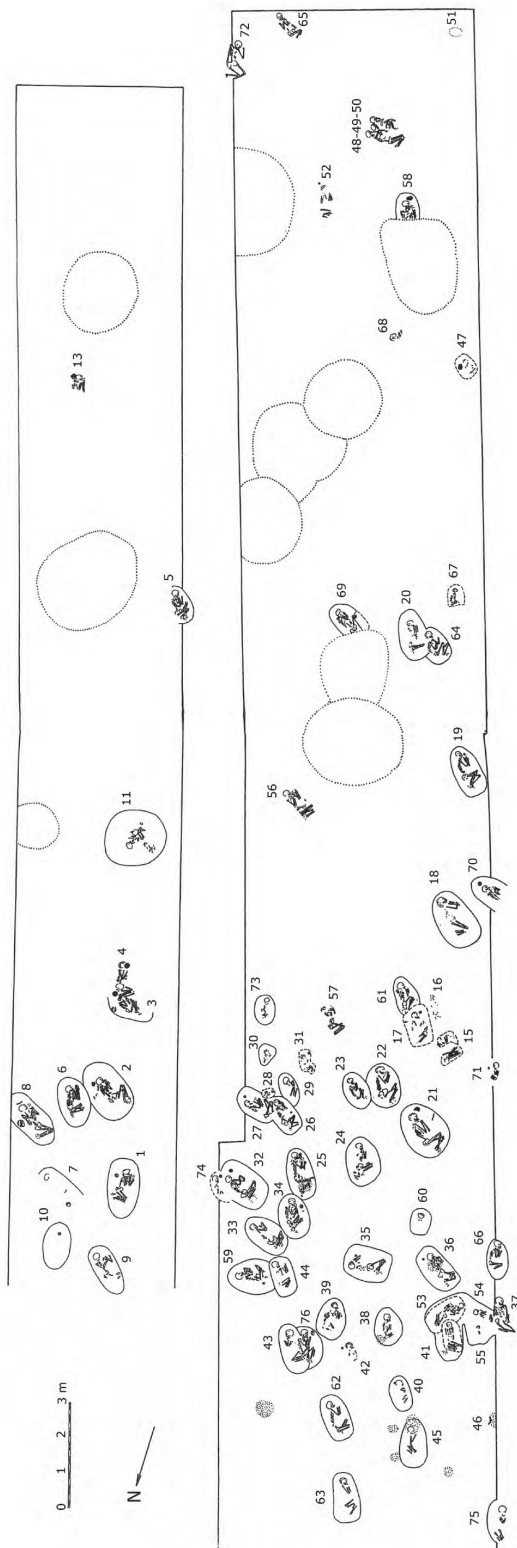


FIGURE 2. Nitra-Horné Krškany: plan of the cemetery (after Pavúk 1972).

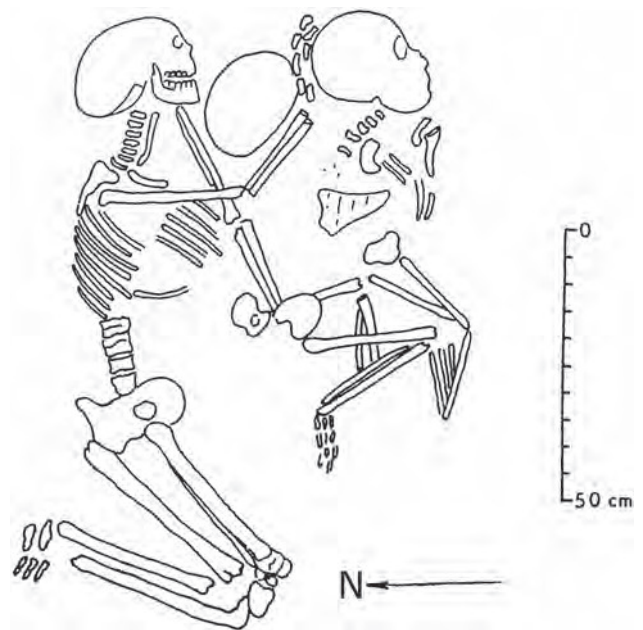


FIGURE 3. Triple burial (48-49-50/65) of 20-24-year old female and two 4-5-year-old-children with cranial trauma (after Pavúk 1972).

studied the material from Nitra and published papers about paleodemography (Crubézy *et al.* 1995), osteoarthritis and enthesopathies (Crubézy *et al.* 2002). D. W. Frayer compared dentition of LBK populations from Nitra and from the slightly older cemetery in Vedrovice (Czech Republic). Osteological analysis and sampling for stable isotope and radiocarbon analysis was carried out by L. Fibiger and P. Bickle who participated in an extensive project dealing with the Linear Pottery Culture in Central Europe (Whittle *et al.* 2013, Bickle *et al.* 2013). A. Ash studied health, nutrition and weaning of the first farmers based on manifestations of non-specific stress such as *cribra orbitalia*, porotic hyperostosis and hypoplasia of dental enamel (Ash *et al.* 2016).

The aim of this paper is to present a catalogue of skeletal material from the Neolithic cemetery in Nitra with a photographic documentation of preserved skulls. Results of the basic anthropological analysis performed by the author of this paper are discussed briefly, since the thorough bioarchaeological analysis of Nitra population carried out by L. Fibiger is presented in Whittle *et al.* (2013). Detailed analysis of health condition of the first farmers from Nitra will be published in the future.

## MATERIAL

Human skeletal material from excavation of Neolithic cemetery in Nitra-Horné Krškany is deposited in collections of the Anthropos Institute of the Moravian Museum under inventory numbers A 1463–A 1540. During the initial laboratory treatment the bones were washed, partially freed of sinter and preserved with polyvinyl acetate. Fragmented bones were glued and some missing parts were supplemented with plaster.

As part of the present-day revision process the bones were examined, repackaged and, if necessary, reglued by Y. Kovaříková, the restorer of the Anthropos

Institute. The preservation of skeletons was recorded in the schematic drawing database (*Figure 4*). T. Sojková and M. Krivanová participated in the anatomical determination of skeletal material and entering the preserved bones into the database.

Skeletal remains of 77 individuals from 74 numbered graves were a subject of the anthropological analysis. Compared to the original publication (Pavúk 1972) there were some discrepancies in the number of individuals, more individuals were marked with the same number (burial 4/64, 13/64, 15/65) while others were missing (51/65). To distinguish multiple individuals marked with the same grave number were used letters a, b, c placed behind the grave number and these individuals were included in the demographic analysis. In six individuals there were found isolated bones of other individuals that could get into the grave in Neolithic or recently during archaeological excavation or museum treatment. These bones were not included in the demographic analysis of the collection.

Preservation of skeletal material is moderate, the bones are often fragmentary, with abraded surface and some are coated with sinter that, in many cases, bounds some parts of the skeleton into solid blocks, particularly in the bones of the hand and foot, ribs and vertebrae. Poor preservation and sinter often limited the anthropological analysis.

## METHODS

For brief description of skeleton preservation in the catalogue were used signs + (S skull, P postcranial skeleton, +++ complete or nearly complete, ++ moderate, + poor preservation or small fragments, 0 not preserved).

Determination of bones was performed according to standard anthropological methods recommended by the Workshop of European Anthropologists (Ferembach *et al.* 1980). For the estimation of sex were used methods based on the morphology of the pelvic bones (Bruzek 2002, Acsádi, Nemeskéri 1970) and on the pelvic metric (Novotný 1986), morphology of the skull (Acsádi, Nemeskéri 1970) and metric of the talus (Novotný 1985), femur and humerus (Černý, Komenda 1980). The features used for the estimation of sex are mentioned in brackets in the catalogue. In juvenile skeletons the methods estimating sex are not too reliable and therefore the sex was not estimated in juveniles.

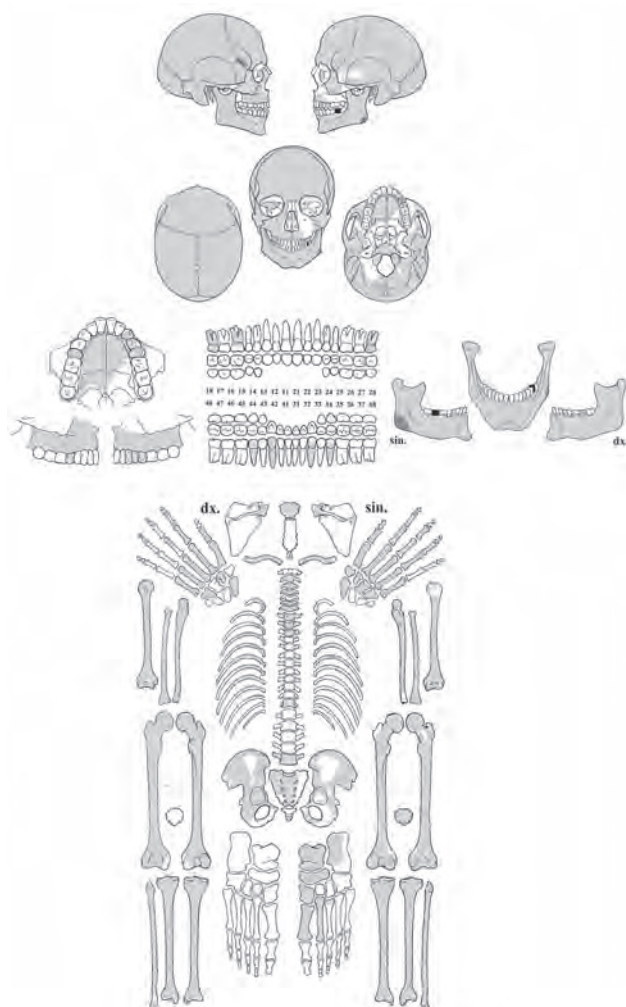


FIGURE 4. Anatomical record of the adult skeleton No. 61/65 (female aged 45–55 years); the bones withdrawn for chemical analyses are marked in black.

For the estimation of the age in adults, a combination of methods was used, evaluating the state of dental abrasion (Lovejoy 1985), the development of the surface of *facies auricularis* (Meindl *et al.* 1985) and symphysis (McKern, Stewart 1957). In juveniles there were used methods evaluating the mineralization of teeth (Ubelaker 1978, Vlček 1994), the length of long bones (Stloukal, Hanáková 1978) and the development of ossification (Schaefer *et al.* 2009). The features used for the estimation of age are mentioned in brackets in the catalogue.

Individuals were put in standard age categories of infans I (0–0.5 years), infans II (0.5–6 years), infans III (7–13 years), juvenis (14–19 years), adultus I (20–29 years), adultus II (30–39 years), maturus I (40–49 years), maturus II (50–59 years) and senilis (over 60 years); demographic analysis also worked with more detailed three-year intervals in children and longer fifteen-year intervals in adults.

The system by Martin (Bräuer 1988) was used for the metric analysis. The stature was estimated by the method of Sjøvold (1990). The bone dimension used for the stature estimation is mentioned in the brackets in the catalogue. When bones from both sides were preserved, an average of both dimensions was used.

Concerning enthesopathies, only severe cases were monitored in relation with evaluation of working activity.

The pathological changes of bones were assessed using paleopathological literature, mainly the publications by Horácková *et al.* (2004) and Ortner (2003). For the examination of Harris lines there were used radiographs of tibiae taken at St. Anne's University Hospital in Brno. This paper briefly presents the first results of palaeopathological analysis, a detailed paper dealing with health condition of Nitra population will be published in the future.

## CATALOGUE OF THE HUMAN SKELETAL REMAINS

### **Burial 1/1964: Museum Inv. No. A 1463**

S+, P+

**Sex:** female (morphology of skull, measurements of talus)

**Age:** 20–24 years (dental abrasion)

**Individual:** poorly preserved gracile skeleton with medium muscle topography

**Stature:** 154.4 cm (H1 dx.)

**Skull:** incomplete, partially reconstructed *calvaria* (Figure 5), separately preserved left temporal and damaged base of occipital, damaged maxilla, mandible without right ramus.

*Tuber frontale* small, *arcus superciliaris* weak, *margo supraorbitalis* sharp, glabella weak, *inclinatio frontale* arched, *pars parietalis* ascending, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *tuber parietale* medium, *planum nuchale* with distinct topography, chin medium prominent, *protuberantia mentalis* weak, *angulus mandibulae* flat.

There are remainders of calculus on dentition.

**Cranial metrics:** dolichocranic, eurytopic

**Postcranial skeleton:** preserved damaged long bones and bones of hand and feet. Medium muscle topography, more developed in right humerus – distinct *sulcus intertubercularis*. Femurs are hyperplatymetric with weak pilaster, tibiae platynemic.

**Pathology:** Cranial trauma – fracture line on the right parietal heading towards *angulus occipitalis* with small radial lines. Dental caries on both lower M1. Distal part of both upper and lower right M2 with damaged enamel (ante-mortem?).

**Varieties:** *sutura metopica persistens*, *ossicula suturae lamdoideae*, *foramen olecrani* in both humeri

**X-ray:** tibiae – negative result

### **Burial 2/1964: Museum Inv. No. A 1465**

S++, P++

**Sex:** male (morphology of pelvis and skull)

**Age:** 40–50 years (dental abrasion)

**Individual:** moderately preserved skeleton with medium muscle topography, surface of bones is abraded in some places and covered with sinter which binds some bones together

**Stature:** 168.0 cm (H1)

**Skull:** preserved partially reconstructed *calvaria* (Figure 6), damaged base. Above glabella there is round perforation in *lamina externa* caused by taphonomic process. From facial part is preserved left zygomatic, separate right zygomatic, maxillar dental arch and complete mandible.

*Tuber frontale* small, *arcus superciliaris* distinct, *margo supraorbitalis* weakly rounded, glabella massive, *inclinatio frontale* nearly arched, *pars parietalis* nearly horizontal, *squama ossis occipitalis* arched to elongated, *protuberantia occipitalis externa* distinct, *tuberculum marginale* distinct, *crista supramastoidea* strong, *tuber parietale* mild, *planum nuchale* distinct topography, *processus mastoideus* large, chin prominent, *protuberantia mentalis* with distinct *tubera mentalia*, *angulus mandibulae* everted.

There are remainders of calculus in dentition. Dental abrasion is asymmetric, more distinct on the right side.

**Cranial metrics:** ultradolichocranic, hypsicranic, acrocranic, eurytopic, dolichostenomadibular

**Postcranial skeleton:** with damaged exposed parts. Vertebrae are bound by sinter into blocks. In some ribs longitudinal

lapping on lower edges. Scapulas and clavicles are damaged, bones of both arms are present. Bone lips were found on several phalanges.

Pelvis is damaged, partially bound by sinter (left bone and sacrum, the head of right femur in acetabulum), with male morphology. Femurs are platymeric with strong pilaster, tibiae mesocnemic.

**X-ray:** tibiae – Harris lines

#### **Burial 3/64: Museum Inv. No. A 1464**

S+, P+

**Sex:** male? (morphology of pelvis)

**Age:** 16–17 years (length of long bones, ossification)

**Individual:** poorly preserved skeleton

**Skull:** parietals and damaged occipital squama, complete mandible.

**Postcranial skeleton:** fragments of vertebrae and ribs, damaged scapulas and clavicles, humeri and forearm bones with partially damaged ends of diaphyses, fragments of pelvis, damaged diaphyses of femurs and tibiae, fibulae and part of the bones of foot.

**Pathology:** porotic hyperostosis in parietals and occipital.

**X-ray:** tibiae – negative result

#### **Burial 4/1964: Museum Inv. No. A 1466**

S+, P++

**Sex:** male (morphology of pelvis and skull)

**Age:** 30–40 years (dental abrasion, symphysis, *facies auricularis*)

**Individual:** moderately preserved skeleton with medium muscle topography. Surface of bones is abraded in some places and covered with sinter.

**Stature:** 168.6 cm (F1 sin.)

**Skull:** damaged, reconstructed *calvaria*, partially deformed by taphonomic process (*Figure 7*). Left ramus of mandible. Separate upper left M1.

*Tuber frontale* weak, *margo supraorbitalis* weakly rounded, *inclinatio frontale* mildly recessive, *pars parietalis* ascending, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *crista supramastoidea* very strong, *tuber parietale* mild, *planum nuchale* distinct topography, *processus mastoideus* large.

**Postcranial skeleton:** part of vertebrae bound by sinter into the blocks, with indicated osteophytes. Ribs are fragmentary. *Os sacrum* is damaged, not completely fused, there is round depression in the ventral side of S2 (cyst?).

Humeri and bones of forearm are nearly complete. Left pubis is missing, pelvis with rather male morphology. Femurs, tibiae and fibulae partially damaged, bones of feet missing. Right femur is platymeric with strong pilaster. Tibiae are hyperplatynemic.

**Pathology:** weak vertebral osteophytes, probable cyst in ventral side of *os sacrum*.

**X-ray:** tibiae – Harris lines on left tibia.

#### **Burial 4a/1964: Museum Inv. No. A 1467**

S++, P+

**Sex:** female (morphology of pelvis and skull)

**Age:** 20–30 years (dental abrasion, symphysis)

**Individual:** poorly to moderately preserved gracile skeleton

**Skull:** damaged reconstructed *calvaria* (*Figure 8*), separate fragment of right maxilla with front teeth, mandible is missing left ramus.

*Tuber frontale* medium, *arcus superciliaris* weak, *margo supraorbitalis* sharp, glabella weak, *inclinatio frontale* nearly arched, *pars parietalis* nearly horizontal, *squama ossis occipitalis* flat, *protuberantia occipitalis externa* weak, *tuberculum marginale* medium, *crista supramastoidea* mild, *tuber parietale* medium, *planum nuchale* mild topography, *processus mastoideus* small, chin medium prominent, *protuberantia mentalis* medium prominent.

Right deciduous canine persisted in maxilla. Dental abrasion is asymmetric, more distinct on the left side. Thick deposit of calculus in teeth.

**Postcranial skeleton:** vertebrae partially preserved, Schmorl's node was noted in L3. Fragments of ribs, part of hand and foot bones, in one phalange longitudinal lipping. Pelvis with female morphology including distinct *sulcus praeauricularis*.

**Pathology:** 4 dental caries (upper right M2 and both P2, lower left M1), intravital loss of both lower M2, retention of upper right canine, Schmorl's node in L3.

#### **Burial 5/1964: Museum Inv. No. A 1468**

S++, P++

**Sex:** undeterminable

**Age:** 16–17 years (ossification of bones)

**Individual:** moderately preserved gracile skeleton, bones are abraded and partly bound by sinter.

**Skull:** damaged, partially reconstructed (*Figure 9*). In facial part there is missing right zygomatic. Mandible with damaged rami.

**Postcranial skeleton:** partially damaged, epiphyses not fused. Vertebrae are damaged, C1–3 bound by sinter, fragmentary ribs, long bones with damaged ends of diaphyses, knee joints bound by sinter. Ilium and ischium are preserved from both sides of pelvis.

**Pathology:** retention of upper right C – diagonal eruption heading mesially and lingually, in maxilla there are additional molars (*Figure 69*). Mild *cribra orbitalia* were found in both orbits.

**Finding:** On ventral side of right humerus shaft there are toothmarks of a rodent.

**X-ray:** tibiae – negative result

**Burial 6/1964: Museum Inv. No. A 1469**

S+, P++

**Sex:** female (morphology of pelvis and skull)

**Age:** 50–60 years (dental abrasion, symphysis)

**Individual:** moderately preserved gracile skeleton with medium muscle topography.

**Stature:** 152.4 cm (F1 sin.)

**Skull:** part of reconstructed *calvaria* (Figure 10), two fragments of maxillar alveolar process, damaged mandible with restored rami.

*Tuber frontale* medium, *arcus superciliaris* weak, *margo supraorbitalis* sharp, glabella weak, *inclinatio frontale* nearly arched, *pars parietalis* ascending, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *crista supramastoidea* medium, *tuber parietale* medium, *planum nuchale* with distinct topography, *processus mastoideus* small, chin medium prominent, *protuberantia mentalis* medium. Teeth are heavily worn.

**Cranial metrics:** hyperdolichocranic, orthocranic, metriocranic, eurymetopic, dolichostenomandibular

**Postcranial skeleton:** vertebrae without osteophytes but with concave central part of bodies. Pelvis with female morphology including *sulcus praeauricularis*. Femurs are hyperplatymetric with weak pilaster, tibiae platycnemic.

**Pathology:** Dental carries in upper left P2, lower right M2 and left P1, three first molars were lost intravitaly. In occipital *lamina externa* there was noted distinct porotic hyperostosis. Left elbow (*trochlea humeri*) and some carpals from both sides display polished surface (eburnation) (Figure 70), in the perimeter of articular heads there are osteophytes, these alterations are evidence of *osteoarthritis*.

**Varieties:** *foramen olecrani*

**X-ray:** tibiae – negative result

**Burial 7/1964: Museum Inv. No. A 1470**

S+, P+

**Sex:** male?

**Age:** 40–45 years (dental abrasion)

**Individual:** fragments of skull and long bones

**Skull:** several fragments – part of occipital squama, damaged temporals, 3 teeth – upper right C and P1, lower left M3.

**Postcranial skeleton:** several small fragments of long bones.

**Pathology:** dental carries in lower left M3

**Burial 8/1964: Museum Inv. No. A 1471**

S++, P++

**Sex:** male (morphology of skull and pelvis)

**Age:** 40–55 years (dental abrasion)

**Individual:** moderately preserved skeleton with medium muscle topography

**Stature:** 161.3 cm (F1 sin.)

**Skull:** reconstructed damaged *calvaria* (Figure 11) and right zygomatic, separate maxillae, mandible complete.

*Tuber frontale* medium, *arcus superciliaris* prominent, *margo supraorbitalis* sharp, glabella medium, *inclinatio frontale* medium recessive, *pars parietalis* ascending, *squama ossis occipitalis* elongated, *protuberantia occipitalis externa* medium, *tuberculum marginale* medium, *crista supramastoidea* medium, *tuber parietale* small, *planum nuchale* with distinct topography, *processus mastoideus* large, chin strongly prominent, *protuberantia mentalis* distinctly prominent, *angulus mandibulae* weakly everted.



FIGURE 5. Nitra No. 1/64. Frontal, lateral and occipital view of the skull of a 20–24-year-old male, (Author of photos 5–60, 64–80 Z. Tvrđý).



FIGURE 6. Nitra No. 2/64. Frontal, lateral and occipital view of the skull of a 40–50-year-old male.



FIGURE 7. Nitra No. 4/64. Frontal, lateral and occipital view of the skull of a 30–40-year-old male.



FIGURE 8. Nitra No. 4a/64. Frontal, lateral and occipital view of the skull of a 20–30-year-old female.



FIGURE 9. Nitra No. 5/64. Frontal, lateral and occipital view of the skull of a 16–17-year-old individual.

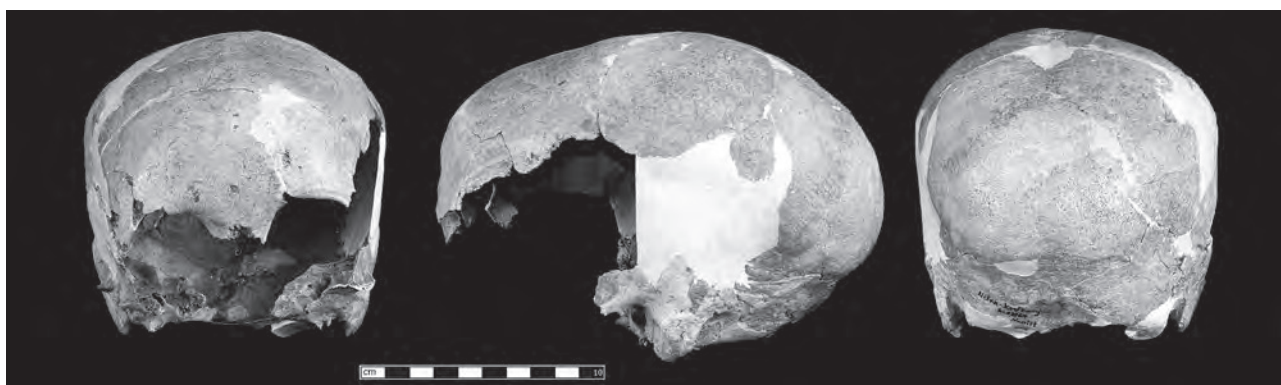


FIGURE 10. Nitra No. 6/64. Frontal, lateral and occipital view of the skull of a 50–60-year-old female.



FIGURE 11. Nitra No. 8/64. Frontal, lateral and occipital view of the skull of a 40–55-year-old male.

Asymmetric dental abrasion caused by dental carries in lower right M1, calculus deposit on the right teeth.

**Cranial metrics:** dolichocranic, orthocranic, acrocranic, hypsicranic, eurymetopic, dolichostenomandibular

**Postcranial skeleton:** fragmentary vertebrae. Schmorl's node and small osteophytes were noted on facies inferior of the thoracic vertebra. Bones of free upper limb with muscle topography more distinct on the right side, several hand phalanges with lipping. Pelvis damaged, with male morphology. Femurs medium robust, platymeric, with weak pilaster, tibiae platycnemic. Tarsals partially bound with sinter, enthesopathy on *tuber calcanei*.

**Pathology:** dental caries in lower right M1, subsequent inflammation process affected mandible, Schmorl's node and osteophytes in thoracic vertebra.

**X-ray:** tibiae – negative result

**Burial 9/1964: Museum Inv. No. A 1472**

S++, P+

**Sex:** female? (morphology of skull rather male, talus metrics decidedly female)

**Age:** 35–40 years (dental abrasion)

**Individual:** poorly preserved skeleton

**Skull:** reconstructed damaged *calvaria* (Figure 12), separate part of left maxilla, damaged mandible without left ramus.

*Tuber frontale* medium, *arcus superciliaris* medium, *margo supraorbitalis* indecisive, *glabella* medium, *inclinatio frontale* mildly recessive, *pars parietalis* ascending, *squama ossis occipitalis* elongated, *protuberantia occipitalis externa* medium, *crista supramastoidea* medium, *tuber parietale* small, *planum nuchale* with very distinct topography, *processus mastoideus* medium, chin medium prominent, *protuberantia mentalis* distinctly prominent.

Teeth covered with calculus.

**Cranial metrics:** dolichocranic

**Postcranial skeleton:** small fragments.

**Pathology:** dental caries in upper left M2, porotic hyperostosis in cranial vault, *cribra orbitalia* in right orbit (left not preserved).

**Burial 13a/64: Museum Inv. No. A 1473**

S++, P++

**Age:** 6 years (dental eruption)

**Individual:** moderately preserved skeleton

**Skull:** damaged reconstructed *calvaria* (Figure 13), maxilla and mandible.

**Postcranial skeleton:** fragments of vertebrae, ribs, long bones with damaged ends of diaphyses, fragments of pelvis.

**Pathology:** porotic hyperostosis in right parietal.

**Burial 13b/64: Museum Inv. No. A 1473**

S++, L0

**Age:** 8 years (dental eruption)

**Individual:** damaged skull

**Skull:** *calvaria* (Figure 14), separate maxilla, mandible.

**Pathology:** mild porotic hyperostosis.

**Burial 13c/64: Museum Inv. No. A 1473**

S+, P+

**Age:** 0–0.5 years

**Individual:** fragments of bones

**Skull:** small fragments

**Postcranial skeleton:** small fragments of ribs and long bones diaphyses.

**Burial 14/1964: Museum Inv. No. A 1474**

S+, P+

**Sex:** female (metrics of humerus)

**Age:** 24–30 years (dental abrasion)

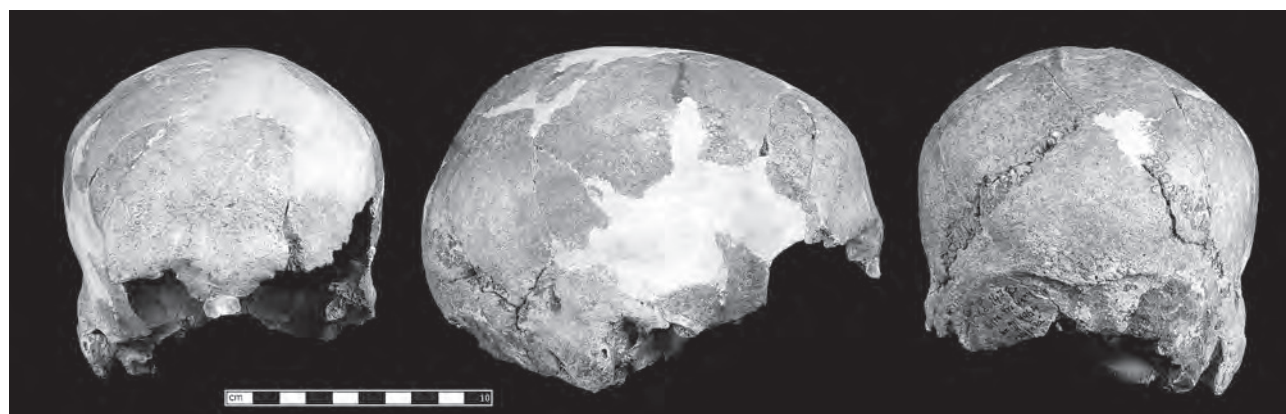


FIGURE 12. Nitra No. 9/64. Frontal, lateral and occipital view of the skull of a 35–40-year-old female.

**Individual:** incomplete upper part of skeleton with medium muscle topography

**Stature:** 154.5 cm (U1)

**Skull:** temporal pyramids, occipital base, mandible without right ramus.

**Postcranial skeleton:** part of vertebrae and ribs, most bones of upper limbs.

**Burial 15a/1965: Museum Inv. No. A 1475**

S+, P+

**Age:** 1 year (dental eruption)

**Individual:** fragments of bones

**Skull:** fragments, 14 teeth

**Postcranial skeleton:** vertebral fragments, 4 fragments of long bones diaphyses.

**Burial 15b/1965: Museum Inv. No. A 1475**

L0, P++

**Sex:** female? (metrics of talus, femur)

**Age:** adult

**Individual:** moderately preserved gracile postcranial skeleton with medium muscle topography

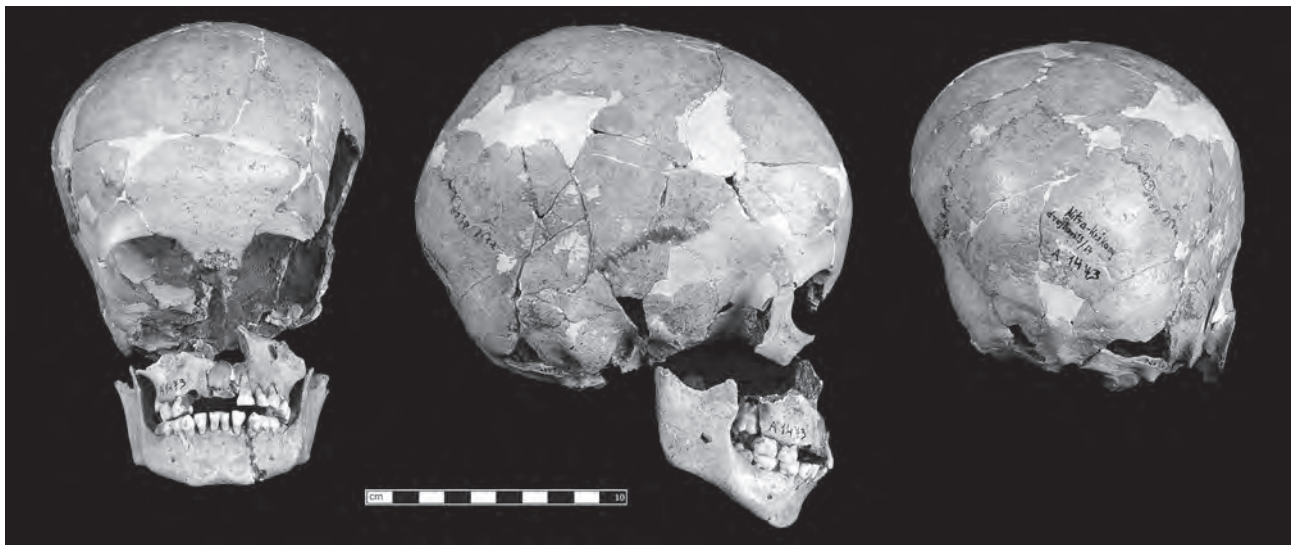


FIGURE 13. Nitra No. 13a/64. Frontal, lateral and occipital view of the skull of a 6-year-old child.



FIGURE 14. Nitra No. 13b/64. Frontal, lateral and occipital view of the skull of an 8-year-old child.

**Stature:** 150.3 cm (Ti1 sin.)

**Postcranial skeleton:** damaged long bones, fragmentary pelvis, several tarsals. Left femur is platymeric, with weak pilaster, tibiae mesocnemic.

**Pathology:** possible premortal trauma in medial side of left femur – bulge with unclear aethiology.

**Burial 16/1965: Museum Inv. No. A 1476**

S+, P0

**Sex:** undeterminable

**Age:** about 30 years (dental abrasion)

**Individual:** small fragments of skull and left clavicle

**Skull:** small fragments, damaged lower canine, premolar.

**Postcranial skeleton:** fragment of left clavicle.

**Burial 17/1965: Museum Inv. No. A 1478**

S++, P++

**Sex:** male (morphology of skull and pelvis)

**Age:** 50+ years (dental abrasion, *facies auricularis*)

**Individual:** moderately preserved robust skeleton with distinct muscle topography

**Stature:** 157.5 cm (R1 dx.)

**Skull:** reconstructed (*Figure 15*), with damaged base and missing left maxilla. Separate left zygomatic with part of maxilla.

*Tuber frontale* small, *arcus superciliaris* distinct, *margo supraorbitalis* weakly rounded, glabella distinct, *inclinatio frontale* mildly recessive, *pars parietalis* nearly horizontal, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *tuberculum marginale* mild, *crista supramastoidea* very strong, *tuber parietale* small, *planum nuchale* with very distinct topography, *processus mastoideus* medium, chin medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* everted.

**Cranial metrics:** dolichocranic, hypsicranic, acrocranic, eurytopic, dolichostenomandibular

**Postcranial skeleton:** moderately preserved, muscle topography more distinct in upper free limbs, especially in humeri (*m. pectoralis major*), longitudinal lipping in hand phalanges. Femurs hyperplatymeric, with weak pilaster, tibiae mesocnemic.

**Pathology:** 2 dental caries (upper right M1, left C), intravital loss of lower right M1, left C, M1 and M2. Porotic hyperostosis in occipital. Arthritic alterations in articular edges, eburnation on *facies articularis* of cervical vertebra.

**Varieties:** os lambdae

**Finding:** toothmarks of a rodent were noted in shaft of left femur.

**X-ray:** tibiae – negative result

**Burial 18/1965: Museum Inv. No. A 1477**

S++, P++

**Sex:** female? (morphology of skull and metrics of femur and humerus)

**Age:** 25–35 years (dental abrasion)

**Individual:** moderately preserved skeleton with medium muscle topography, surface of bones is abraded.

**Skull:** reconstructed *calvaria* (*Figure 16*), mandible.

*Tuber frontale* medium, *arcus superciliaris* medium, *margo supraorbitalis* sharp, glabella medium, *inclinatio frontale* mildly recessive, *pars parietalis* ascending, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *tuber parietale* small, *planum nuchale* with medium topography, chin medium prominent, *protuberantia mentalis* medium.

**Cranial metrics:** dolichocranic

**Postcranial skeleton:** fragments of vertebrae, long bones with damaged joints, fragments of pelvis. Left femur with weak pilaster, right tibia eurycnemic.

**Pathology:** dental caries in upper right M1. Upper left M3 is either microdont or is missing and there is present one additional tooth. *Cribra orbitalia* in both orbits.

**Burial 19/1965: Museum Inv. No. A 1479**

S++, P++

**Sex:** male (morphology of skull and pelvis)

**Age:** 35–45 years (dental abrasion)

**Individual:** moderately preserved robust skeleton with distinct muscle topography

**Stature:** 166.7 cm (F1)

**Skull:** *calvaria* (*Figure 17*), separate maxilla, mandible.

*Tuber frontale* small, *arcus superciliaris* distinct, *margo supraorbitalis* indecisive, glabella medium, *inclinatio frontale* mildly recessive, *pars parietalis* ascending, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *tuberculum marginale* medium, *crista supramastoidea* very strong, *tuber parietale* mild, *planum nuchale* with very distinct topography, *processus mastoideus* large, chin strongly prominent, *protuberantia mentalis* medium, *angulus mandibulae* weakly everted.

Asymmetric dental abrasion, more distinct on the right side. On lingual side of lower M2 and M3 there is missing enamel and dentin – ante-mortem?

**Cranial metrics:** hyperdolichocranic, hypsicranic, acrocranic, brachystaphylin, dolichostenomandibular

**Postcranial skeleton:** bones of the trunk and pelvis damaged, long bones complete. Femurs robust, eurymeric, with weak pilaster, tibiae mesocnemic.

Enthesopathies were noted in *tuber calcanei* and ventral side of patellae, which show deformation of lateral side (*Figure 65*).

**Pathology:** dental caries in lower left M2. Osteophytes in vertebrae.

**X-ray:** tibiae – negative result



FIGURE 15. Nitra No. 17/65. Frontal, lateral and occipital view of the skull of a 50-year-old male.

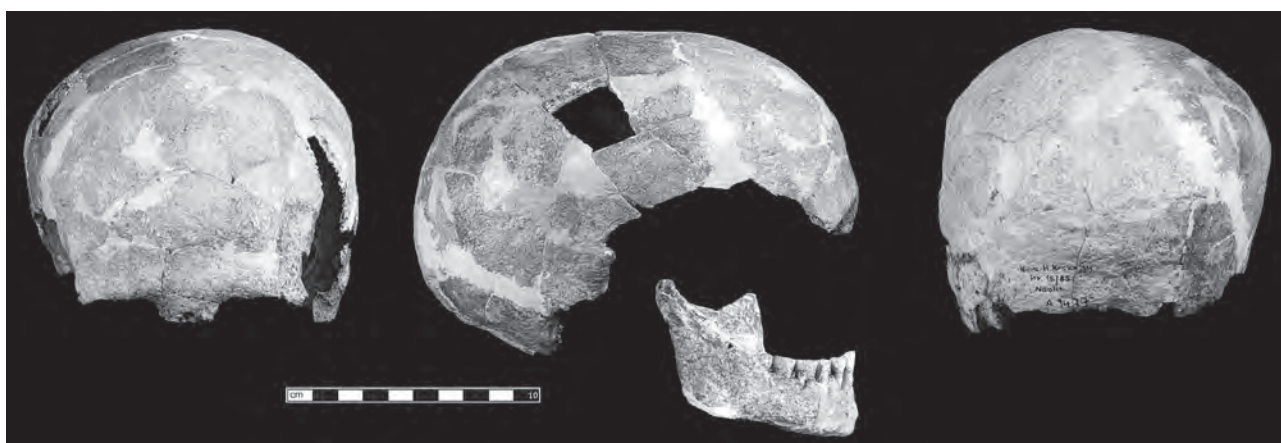


FIGURE 16. Nitra No. 18/65. Frontal, lateral and occipital view of the skull of a 25–35-year-old female.



FIGURE 17. Nitra No. 19/65. Frontal, lateral and occipital view of the skull of a 35–45-year-old male.



FIGURE 18. Nitra No. 20/65. Frontal, lateral and occipital view of the skull of a 24–30-year-old female.



FIGURE 19. Nitra No. 21/65. Frontal, lateral and occipital view of the skull of a 50–60-year-old male.

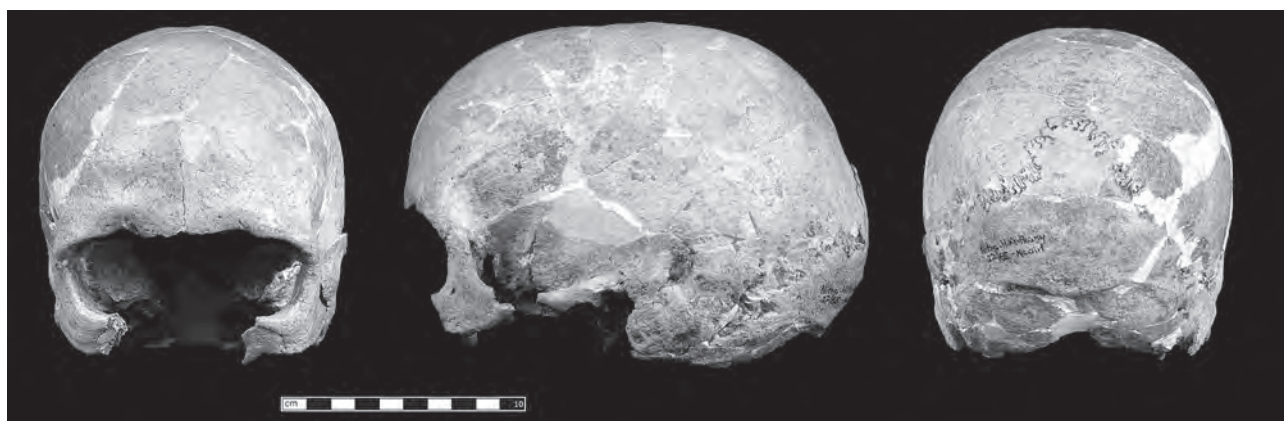


FIGURE 20. Nitra No. 22/65. Frontal, lateral and occipital view of the skull of a 45–55-year-old female.

**Burial 20/1965: Museum Inv. No. A 1480**

S++, P++

**Sex:** female (morphology of skull and pelvis)

**Age:** 24–30 years (dental abrasion)

**Individual:** moderately preserved gracile skeleton with mild muscle topography

**Stature:** 157.0 cm (F1)

**Skull:** reconstructed *calvaria* (Figure 18), with damaged base and left orbit. Separate left maxilla, mandible with damaged left ramus.

*Tuber frontale* medium, *arcus superciliaris* weak, *margo supraorbitalis* sharp, glabella weak, *inclinatio frontale* nearly arched, *pars parietalis* descending, *squama ossis occipitalis* flat to arched, *protuberantia occipitalis externa* medium, *crista supramastoidea* mild, *tuber parietale* medium, *planum nuchale* with weak topography, *processus mastoideus* medium, chin medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* nearly flat.

**Cranial metrics:** brachyranic, hypsicranic, metriocranic

**Postcranial skeleton:** bones of trunk are damaged, long bones with damaged joints. Pelvis with female morphology including mild *sulcus praeauricularis*. Femurs are platymeric, with weak pilaster, tibiae mesocnemic.

**Pathology:** *cribra orbitalia* in both orbits.

**Burial 21/1965: Museum Inv. No. A 1482**

S++, P++

**Sex:** male? (morphology of skull and pelvis)

**Age:** 50–60 years (dental abrasion)

**Individual:** moderately preserved skeleton with medium muscle topography, bones are abraded and covered with sinter, some of them bound together

**Stature:** 166.6 cm (F1)

**Skull:** reconstructed *calvaria* (Figure 19), separate zygomatics, damaged maxilla, mandible nearly complete.

*Tuber frontale* medium, *arcus superciliaris* weak, *margo supraorbitalis* indecisive, glabella medium, *inclinatio frontale* nearly arched, *pars parietalis* distinctly ascending, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* distinct, *tuberculum marginale* medium, *crista supramastoidea* very strong, *tuber parietale* mild, *planum nuchale* with very distinct topography, chin medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* weakly everted.

Dental abrasion is extensive, reaching teeth roots.

**Cranial metrics:** dolichocranic, eurytopic, dolichostenomandibular

**Postcranial skeleton:** fragmentary vertebrae and ribs, long bones well preserved. Hand phalanges with longitudinal lipping.

Femurs eurymeric, with weak pilaster, tibiae platycnemic.

**Pathology:** dental caries in upper right M1 and lower left P2, intravital loss (upper right C, left P2, lower right P2, M2?, left P1, M1). Cervical vertebrae with mild osteophytes. Distal parts of both fibulae with inflammatory periostitic alterations.

**X-ray:** tibiae – Harris lines

**Burial 22/1965: Museum Inv. No. A 1483**

S++, P++

**Sex:** female (morphology of pelvis, skull morphology indecisive)

**Age:** 45–55 years (dental abrasion)

**Individual:** moderately preserved gracile skeleton with medium muscle topography

**Stature:** 157.5 cm (F1)

**Skull:** reconstructed *calvaria* and both zygomatics (Figure 20), damaged region of glabella, separate damaged maxilla, mandible with damaged left arch.

*Tuber frontale* weak, *arcus superciliaris* weak, *margo supraorbitalis* indecisive, glabella weak, *inclinatio frontale* mildly recessive, *pars parietalis* nearly horizontal, *squama ossis occipitalis* elongated, *protuberantia occipitalis externa* distinct, *tuberculum marginale* small, *crista supramastoidea* strong, *tuber parietale* mild, *planum nuchale* with very distinct topography, *processus mastoideus* small, chin medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* nearly flat.

Dental abrasion is extensive, reaching teeth roots.

**Cranial metrics:** hyperdolichocranic, hypsicranic, acrocranic, eurytopic, dolichostenomandibular

**Postcranial skeleton:** bones of the trunk fragmentary, long bones well preserved. Hand phalanges with mild lipping. Pelvis moderately preserved with female morphology including distinct *sulcus praeauricularis*. Femurs platymeric, with weak pilaster, tibiae platycnemic.

**Pathology:** dental caries in incisor, intravital loss of lower right P1, P2, M1 and left C, P2. Periostitic alterations in distal parts of tibiae and fibulae.

**X-ray:** tibiae – Harris lines

**Burial 23/1965: Museum Inv. No. A 1481**

S++, P++

**Age:** 11–12 years (dental eruption)

**Individual:** moderately preserved skeleton

**Skull:** preserved *calvaria* (Figure 21), without left part of basis and both temporals, preserved partially reconstructed facial skeleton – zygomatics and maxillae, mandible nearly complete.

**Postcranial skeleton:** bones of the trunk fragmentary, diaphyses of long bones with damaged ends, right humerus is missing, clavicles complete, pelvis bones damaged, part of hand and foot bones.



FIGURE 21. Nitra No. 23/65. Frontal, lateral and occipital view of the skull of an 11–12-year-old child.



FIGURE 22. Nitra No. 24/65. Frontal, lateral and occipital view of the skull of a 35–40-year-old female.



FIGURE 23. Nitra No. 25/65. Frontal, lateral and occipital view of the skull of a 50-year-old male.

**Burial 24/1965: Museum Inv. No. A 1484**

S+++, P++

**Sex:** female (morphology of pelvis, skull indecisive)

**Age:** 35–40 years (dental abrasion)

**Individual:** moderately to well preserved gracile skeleton with medium muscle topography, some bones of hand and foot bound with sinter

**Stature:** 152.6 cm (F1 sin.)

**Skull:** nearly complete (*Figure 22*), left *processus mastoideus* is missing, damaged left mandible ramus.

*Tuber frontale* large, *arcus superciliaris* weak, *margo supraorbitalis* indecisive, glabella weak, *inclinatio frontale* arched, *pars parietalis* nearly horizontal, *squama ossis occipitalis* flat, *protuberantia occipitalis externa* medium, *tuberculum marginale* distinct, *crista supramastoidea* strong, *processus zygomaticus* medium, *tuber parietale* medium, *planum nuchale* with distinct topography, *processus mastoideus* small, chin medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* weakly everted.

Grooves in upper incisors. Dental calculus, lingual side of upper teeth covered with sinter.

**Cranial metrics:** dolichocranic, eurytopic, chamaeprosopic, hypsiconchic, chamaerhinic, leptostaphylinic, orthognathic, dolichostenomandibular

**Postcranial skeleton:** bones of the trunk fragmentary, some vertebrae bound with sinter, humeri and bones of forearm damaged, hand phalanges with mild lipping, pelvis without pubis with distinct female morphology including *sulcus praeauricularis*. Femurs well preserved, hyperplatymetric, with weak pilaster. Tibiae damaged, very flat and concave, eurycnemic.

**Pathology:** intravital loss of lower left P2. Possible inflammatory alterations in linea aspera of right femur.

**X-ray:** tibiae – Harris lines

**Burial 25/1965: Museum Inv. No. A 1485**

S++, P++

**Sex:** male (morphology of pelvis and skull)

**Age:** 50+ years (dental abrasion)

**Individual:** moderately preserved robust skeleton with distinct muscle topography

**Stature:** 172.3 cm (F1)

**Skull:** moderately preserved (*Figure 23*), damaged region of foramen magnum, separate maxillae with right zygomatic, mandible with damaged rami.

*Tuber frontale* medium, *arcus superciliaris* distinct, *margo supraorbitalis* indecisive, glabella distinct, *inclinatio frontale* medium recessive, *pars parietalis* ascending, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *tuberculum marginale* medium, *crista supramastoidea* strong,

*tuber parietale* mild, *planum nuchale* with distinct topography, *processus mastoideus* large, chin medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* weakly everted.

Front teeth considerably abraded, in upper incisors sloping lingually, lower left premolars buccally.

**Cranial metrics:** dolichocranic, hypsiconchic, acrocranic, eurytopic.

**Postcranial skeleton:** bones of the trunk fragmentary, osteophytes were noted in some vertebrae.

Pelvis damaged, with male morphology. Long bones partially damaged, femurs eurymeric, with weak pilaster, tibiae mesocnemic. Bones of feet are well preserved, some of them bound with sinter.

**Pathology:** large dental caries in lower right M1, nearly all (16) premolars and molars were intravitaly lost.

**X-ray:** tibiae – Harris lines

**Burial 26/1965: Museum Inv. No. A 1486**

S++(+), P++(+)

**Sex:** male (morphology of pelvis and skull)

**Age:** 35–45 years (dental abrasion)

**Individual:** well preserved robust skeleton with distinct muscle topography, some bones bound with sinter

**Stature:** 154.4 cm (F1)

**Skull:** well preserved (*Figure 24*), reconstructed, with damaged region of foramen magnum and left maxilla, mandible complete.

*Tuber frontale* weak, *arcus superciliaris* distinct, *margo supraorbitalis* indecisive, glabella distinct, *inclinatio frontale* mildly recessive, *pars parietalis* nearly horizontal, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *tuberculum marginale* distinct, *crista supramastoidea* very strong, *processus zygomaticus* medium, *tuber parietale* medium, *planum nuchale* with distinct topography, *processus mastoideus* medium, chin weakly prominent, *protuberantia mentalis* medium, *angulus mandibulae* weakly everted.

Tooth marks of a rodent were noted in region of foramen magnum.

**Cranial metrics:** hyperdolichocranic, hypsiconchic, acrocranic, stenometopic, leptoprosopic, leptenic, hypsiconchic, dolichostenomandibular

**Postcranial skeleton:** well preserved. Pelvis with male morphology. Muscle topography more distinct in right humerus (enthesopathy – *m. mastoideus*) and in tibiae (*tuberositas tibiae*), longitudinal lipping in hand phalanges. Femurs hyperplatymetric, with strong pilaster, tibiae mesocnemic.

**Pathology:** porotic hyperostosis in parietals and occipital. L5 with fracture of arch (*spondylolysis*).

**Varieties:** *ossicula suturae lambdoideae*.

**X-ray:** tibiae – Harris lines

**Burial 27/1965: Museum Inv. No. A 1487**

S++, P++

**Sex:** female (morphology of pelvis and skull)

**Age:** 50+ years (dental abrasion, displays of ageing - osteophytes, distinct topography)

**Individual:** moderately preserved skeleton with medium muscle topography

**Stature:** 168.4 cm (F1)

**Skull:** well preserved (*Figure 25*), damaged base and left zygomatic, mandible is missing left condyle.

*Tuber frontale* weak, *arcus superciliaris* distinct, *margo supraorbitalis* indecisive, glabella distinct, *inclinatio frontale* mildly recessive, *pars parietalis* nearly horizontal, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *tuberculum marginale* distinct, *crista supramastoidea* very strong, *processus zygomaticus* medium, *tuber parietale* medium, *planum nuchale* with distinct topography, *processus mastoideus* medium, chin weakly everted, *protuberantia mentalis* medium, *angulus mandibulae* weakly everted.

**Cranial metrics:** hyperdolichocranic, eurymetopic, leptoprosopic, mesoconchic, mesorrhinic.

**Postcranial skeleton:** bones of the trunk fragmentary, pelvis damaged with female morphology including *sulcus praeauricularis*. Hand phalanges with lipping. Long bones partially damaged, femurs are robust, platymeric, with weak pilaster, tibiae eurycnemic.

**Pathology:** mild *cribra orbitalia* in right orbit. Large dental caries in upper right P2 and M1 with possible connection to the cyst in lingual side of alveolar process. Intravital loss of upper left M2, lower right P2, M2 and left M1, M2. Osteophytes in articular edges and in one vertebra. Periostitic inflammatory alterations in distal end of tibiae and fibulae.

**X-ray:** tibiae - negative results

**Burial 28/1965: Museum Inv. No. A 1488**

S++, P+(+)

**Age:** 6 months (dental eruption)

**Individual:** moderately preserved skeleton

**Skull:** partially reconstructed *calvaria* (*Figure 26*), without base, fragments of mandible, crowns of deciduous teeth.

**Postcranial skeleton:** fragments of vertebrae, ribs and right ilium, damaged diaphyses of humeri and right tibia

**Burial 29/1965: Museum Inv. No. A 1489**

S++, P+

**Age:** 10 years (dental eruption)

**Individual:** moderately preserved skeleton

**Skull:** reconstructed *calvaria* (*Figure 27*), without base, separate part of left maxilla, mandible without left ramus.

**Postcranial skeleton:** fragments of vertebrae and ribs, damaged diaphyses of long bones

**Pathology:** distinct *cribra orbitalia* in both orbits (*Figure 79*).

**Burial 30/1965: Museum Inv. No. A 1490**

S++, P+

**Age:** 6-7 years (dental eruption)

**Individual:** poorly preserved skeleton

**Skull:** damaged reconstructed *calvaria* (*Figure 28*), left maxilla, two parts of mandible.

**Postcranial skeleton:** atlas, fragments of vertebrae and ribs, fragments of left ilium and femur

**Pathology:** distinct porotic hyperostosis in parietals (*Figure 80*).

**Burial 31/1965: Museum Inv. No. A 1491**

S+(+), P+

**Age:** 3 years (dental eruption)

**Individual:** poorly preserved skeleton

**Skull:** reconstructed parts of *calvaria*, fragments of maxillae and mandible.

**Postcranial skeleton:** fragments of vertebra, ribs, pelvis, right clavicle, damaged diaphyses of humerus, femurs, fibula.

**Pathology:** distinct *cribra orbitalia* in both orbits.

**Burial 32/1965: Museum Inv. No. A 1492**

S++, P++

**Sex:** female (morphology of skull and pelvis)

**Age:** 18-20 years (ossification of bones, dental abrasion rather 20-24 years)

**Individual:** moderately preserved gracile skeleton with medium muscle topography

**Stature:** 160.8 cm (F1)

**Skull:** preserved *calvaria* partially deformed by taphonomic process (*Figure 29*), missing base, separate maxilla, mandible without left ramus.

*Tuber frontale* large, *arcus superciliaris* weak, *margo supraorbitalis* sharp, glabella flat, *inclinatio frontale* arched, *pars parietalis* nearly horizontal, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* mild, *crista supramastoidea* very mild, *tuber parietale* medium, *planum nuchale* with weak topography, *processus mastoideus* medium, chin medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* weakly everted.

**Postcranial skeleton:** bones of the trunk fragmentary, bones of hand and foot moderately preserved. Pelvis and long bones partially damaged. Epiphyses of humeri (proximal) and femurs (distal) partially fused. Femurs are platymeric, with weak pilaster, tibiae mesocnemic.

**Pathology:** porotic hyperostosis.

**X-ray:** tibiae - Harris lines (*Figure 81*)



FIGURE 24. Nitra No. 26/65. Frontal, lateral and occipital view of the skull of a 35–45-year-old male.



FIGURE 25. Nitra No. 27/65. Frontal, lateral and occipital view of the skull of a 50-year-old female.

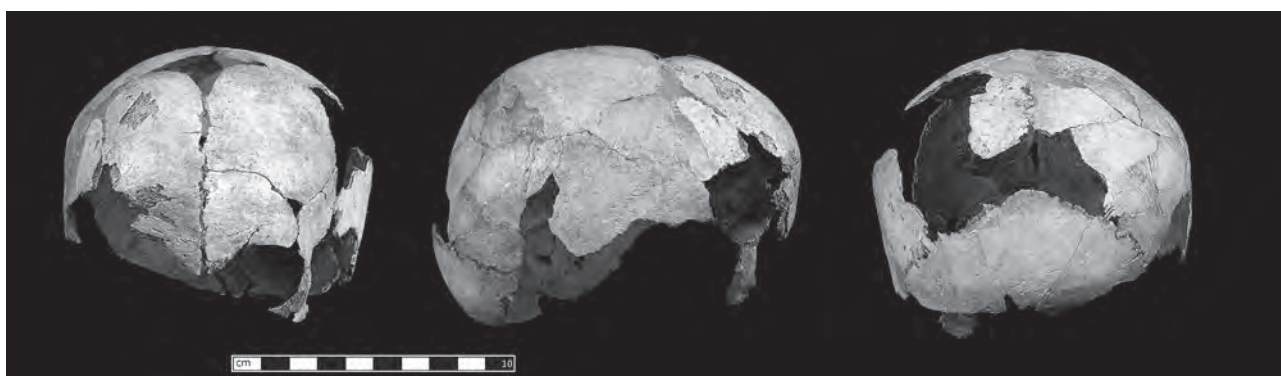


FIGURE 26. Nitra No. 28/65. Frontal, lateral and occipital view of the skull of a 6-month-old child.



FIGURE 27. Nitra No. 29/65. Frontal, lateral and occipital view of the skull of a 10-year-old child.

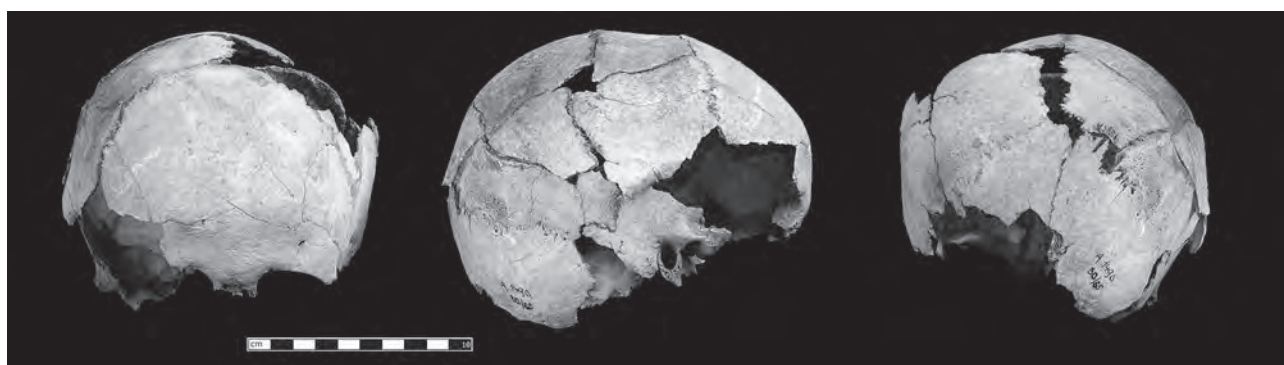


FIGURE 28. Nitra No. 30/65. Frontal, lateral and occipital view of the skull of a 6–7-year-old child.



FIGURE 29. Nitra No. 32/65. Frontal, lateral and occipital view of the skull of an 18–20-year-old female.

**Burial 33/1965: Museum Inv. No. A 1493**

S++(+), P++

**Sex:** female? (morphology of skull)

**Age:** 24–35 years (dental abrasion)

**Individual:** moderately preserved skeleton with medium muscle topography, surface of bones is abraded

**Stature:** 161.7 cm (F1)

**Skull:** well preserved (*Figure 30*), damaged left orbit and zygomatic. Mandible complete.

*Tuber frontale* medium, *arcus superciliaris* weak, *margo supraorbitalis* sharp, glabella weak, *inclinatio frontale* nearly arched, *pars parietalis* nearly horizontal, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* mild, *tuberculum marginale* medium, *crista supramastoidea* medium, *tuber parietale* medium, *planum nuchale* with weak topography, *processus mastoideus* large, chin medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* weakly everted.

Grooves in upper incisors.

**Cranial metrics:** dolichocranic, orthocranic, metriocranic, hypsicranic, acrocranic, eurytopic, hypsiconchic, mesorhynchic, leptostaphylinic, orthognathic, dolichostenomandibular

**Postcranial skeleton:** Vertebrae and ribs damaged, bones of hand and foot poorly preserved. Pelvis damaged, with indecisive morphology. Long bones partially damaged. Femurs platymeric, with weak pilaster, tibiae mesocnemic.

**Pathology:** distinct *cribra orbitalia* in both orbits.

**X-ray:** tibiae – negative result

**Burial 34/1965: Museum Inv. No. A 1494**

S+++, P++

**Sex:** male (morphology of pelvis and skull)

**Age:** 35–40 years (dental abrasion)

**Individual:** well preserved very robust skeleton with distinct muscle topography, some bones of hand and foot bound with sinter

**Stature:** 165.4 cm (F1 dx.)

**Skull:** well preserved (*Figure 31*), without zygomatic arches and left mandibular condyle.

*Tuber frontale* medium, *arcus superciliaris* prominent, *margo supraorbitalis* rounded, glabella massive, *inclinatio frontale* mildly recessive, *pars parietalis* descending, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *tuberculum marginale* very large, *crista supramastoidea* very strong, *tuber parietale* medium, *planum nuchale* with distinct topography, *processus mastoideus* large, chin medium prominent, *protuberantia mentalis* distinctly prominent, *angulus mandibulae* everted.

**Cranial metrics:** dolichocranic, hypsicranic, acrocranic, eurytopic, leptoprosopic, mesoconchic, hyperchamaerhynchic, orthognathic

**Postcranial skeleton:** long bones relatively short but very robust. Vertebrae poorly preserved, partially bound with sinter, ribs fragmentary. Enthesopathy in right humerus (*m. pectoralis major*). Bones of forearm, hand and foot are partially damaged. Pelvis damaged, with male morphology. Femurs, tibiae and fibulae well preserved. Femurs are platymeric, with weak pilaster, tibiae mesocnemic.

**Pathology:** porotic hyperostosis in lambda region. Collapsed bodies of two thoracic vertebrae (*Figure 77*) and inflammatory alterations in ribs (*Figure 78*) probably caused by tuberculosis.

**X-ray:** tibiae – Harris lines on tibia dx.

**Burial 35/1965: Museum Inv. No. A 1495**

S++, P++

**Sex:** female? (morphology of skull)

**Age:** 45–55 years (dental abrasion)

**Individual:** moderately preserved skeleton with distinct muscle topography

**Stature:** 151.1 cm (H1 sin.)

**Skull:** well preserved (*Figure 32*), reconstructed, with damaged base and mandibular condyles, nasals are missing. *Tuber frontale* medium, *arcus superciliaris* weak, *margo supraorbitalis* sharp, glabella weak, *inclinatio frontale* mildly recessive, *pars parietalis* descending, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *tuberculum marginale* medium, *crista supramastoidea* strong, *tuber parietale* medium, *planum nuchale* with distinct topography, *processus mastoideus* medium, chin medium prominent, *protuberantia mentalis* distinctly prominent, *angulus mandibulae* nearly flat.

Teeth with strong deposit of dental calculus. Tooth wear in form of grooves in upper incisors (*Figure 67*).

**Cranial metrics:** mesocranic, orthocranic, metriocranic, hypsicranic, acrocranic, eurytopic, mesostaphyline

**Postcranial skeleton:** bones of the trunk fragmentary, bones of hand and foot partially damaged, longitudinal lipping in hand phalanges. Pelvis fragmentary, long bones damaged, femurs platymeric, with weak pilaster, tibiae mesocnemic.

**Pathology:** dental caries in upper left M1 with periapical inflammation.

**Varieties:** *foramen olecrani*

**X-ray:** tibiae – Harris lines

**Burial 36/1965: Museum Inv. No. A 1498**

S++, P++

**Sex:** female (morphology of pelvis)

**Age:** 50+ years (dental abrasion)

**Individual:** moderately preserved skeleton with medium muscle topography

**Stature:** 161.3 cm (F sin.)



FIGURE 30. Nitra No. 33/65. Frontal, lateral and occipital view of the skull of a 24–35-year-old female.



FIGURE 31. Nitra No. 34/65. Frontal, lateral and occipital view of the skull of a 24–35-year-old male.



FIGURE 32. Nitra No. 35/65. Frontal, lateral and occipital view of the skull of a 45–55-year-old female.

**Skull:** reconstructed (*Figure 33*), with damaged base, left zygomatic is missing, maxilla separate, mandible complete. *Tuber frontale* medium, *arcus superciliaris* medium, *margo supraorbitalis* indecisive, glabella medium, *inclinatio frontale* mildly recessive, *pars parietalis* ascending, *squama ossis occipitalis* elongated, *protuberantia occipitalis externa* medium, *tuberculum marginale* medium, *crista supramastoidea* strong, *tuber parietale* medium, *planum nuchale* with distinct topography, *processus mastoideus* medium, chin medium prominent, *protuberantia mentalis* distinctly prominent, *angulus mandibulae* weakly everted.

Teeth are heavily worn.

**Cranial metrics:** hyperdolichocranic, eurytopic, dolichostenomandibular

**Postcranial skeleton:** vertebrae and ribs damaged, L5 with osteophyte. Bones of hand and foot moderately preserved, with lipping in hand phalanges. Pelvis damaged, with female morphology including *sulcus praeauricularis*. Long bones moderately damaged. Femurs are hyperplatymeric, with weak pilaster, tibiae mesocnemic.

**Pathology:** 2 dental caries, 7 intravital losses, periapical inflammation. L5 with distinct osteophyte. Bony structure was noted on inferior side of a right rib (osteom?).

**X-ray:** tibiae – Harris lines on tibia dx.

**Burial 37/1965: Museum Inv. No. A 1499**

S++(+), P+(+)

**Sex:** female (morphology of skull and pelvis)

**Age:** 24–30 years (dental abrasion)

**Individual:** moderately to well preserved gracile skeleton with distinct muscle topography

**Skull:** well preserved (*Figure 34*), reconstructed, with damaged base and maxillae, right zygomatic arch missing, mandible with damaged left ramus.

*Tuber frontale* medium, *arcus superciliaris* weak, *margo supraorbitalis* sharp, glabella flat, *inclinatio frontale* nearly arched, *pars parietalis* nearly horizontal, *squama ossis occipitalis* arched to elongated, *protuberantia occipitalis externa* medium, *tuberculum marginale* flat, *crista supramastoidea* medium, *tuber parietale* medium, *planum nuchale* with distinct topography, *processus mastoideus* small, chin weakly prominent, *protuberantia mentalis* mild, *angulus mandibulae* flat.

**Cranial metrics:** mesocranic, hypsicranic, acrocranic, eurytopic, chamaeprosopic, mesoconchic, hyperchamaerhine, orthognathic, dolichostenomandibular

**Postcranial skeleton:** vertebrae and ribs fragmentary, from pelvis are preserved parts of ilia. Bones of hand and foot partially preserved, some hand phalanges with mild lipping. Long bones damaged, femurs are platymeric, with strong pilaster.

**Pathology:** large dental caries in both lower third molars with periapical inflammation, other caries in lower first molars. Mild *cribra orbitalia* in both orbits.

**Varieties:** *ossiculum lambdae*, *ossicula suturae lambdoideae*, *foramen olecrani*.

**Burial 38/1965: Museum Inv. No. A 1501**

S++, P++

**Age:** 6–7 years (dental eruption)

**Individual:** moderately preserved skeleton

**Skull:** reconstructed *calvaria* and right zygomatic (*Figure 35*), fragments of maxillae, mandible without right condyle.

**Postcranial skeleton:** parts of vertebrae and ribs, damaged diaphyses of long bones, parts of pelvis.

**X-ray:** tibiae – Harris lines

**Burial 39/1945: Museum Inv. No. A 1503**

S++, P+(+)

**Sex:** female? (morphology of skull)

**Age:** 40–50 years (dental abrasion)

**Individual:** moderately preserved skeleton with medium muscle topography

**Skull:** reconstructed *calvaria* (*Figure 36*), without base and left temporal, separate zygomatics, maxilla and damaged mandible.

*Tuber frontale* medium, *arcus superciliaris* medium, *margo supraorbitalis* indecisive, glabella medium, *inclinatio frontale* nearly arched, *pars parietalis* nearly horizontal, *squama ossis occipitalis* elongated, *protuberantia occipitalis externa* medium, *tuberculum marginale* medium, *crista supramastoidea* strong, *tuber parietale* medium, *planum nuchale* with distinct topography, *processus mastoideus* medium, chin medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* flat.

**Cranial metrics:** mesocranic, metriometric, dolichostenomandibular

**Postcranial skeleton:** bones of the trunk fragmentary, osteophytes in several vertebrae. Pelvis fragmentary, bones of hand and foot damaged, with mild lipping in hand phalanges. Damaged shafts of long bones and separate joints. Femurs platymeric, with weak pilaster.

**Pathology:** osteophytes in vertebrae.

**Burial 40/1965: Museum Inv. No. A 1504**

S+, P+

**Age:** 4 years (dental eruption)

**Individual:** fragments of bones, covered with sinter

**Skull:** fragments of cranial vault, both pyramids, fragments of maxillae, damaged mandible.

**Postcranial skeleton:** small fragments of long bones diaphyses.



FIGURE 33. Nitra No. 36/65. Frontal, lateral and occipital view of the skull of a 50-year-old female.



FIGURE 34. Nitra No. 37/65. Frontal, lateral and occipital view of the skull of a 24-30-year-old female.



FIGURE 35. Nitra No. 38/65. Frontal, lateral and occipital view of the skull of a 6-7-year-old child.

**Burial 41/1965: Museum Inv. No. A 1506**

S+, P++

**Age:** 13–14 years (dental eruption and metrics of long bones – F, Ti)

**Individual:** poorly preserved skeleton, bones are abraded and covered with sinter

**Skull:** fragments of cranial vault, damaged mandible.

**Postcranial skeleton:** vertebrae and ribs fragmentary, damaged diaphyses of long bones, fragmentary bones of pelvis.

**X-ray:** tibia sin. – negative result

**Burial 42/1965: Museum Inv. No. A 1507**

S+, P0(+)

**Age:** 6–7 years (dental eruption)

**Individual:** fragments of bones

**Skull:** fragments of cranial vault, maxilla and mandible

**Postcranial skeleton:** several fragments of long bones

**Burial 43/1965: Museum Inv. No. A 22865**

L0, P+(+)

**Sex:** undeterminable

**Age:** adult

**Individual:** fragments of bones

**Postcranial skeleton:** 2 fragments of ribs, parts of shafts of long bones, fragment of right ilium.

**Burial 44/1965: Museum Inv. No. A 1508**

S++(+), P++

**Sex:** female (morphology of skull, metrics of talus)

**Age:** 40–55 years (dental abrasion)

**Individual:** preserved gracile skeleton with medium muscle topography

**Skull:** well preserved (*Figure 37*), reconstructed, damaged base and left orbit, mandible nearly complete.

*Tuber frontale* medium, *arcus superciliaris* weak, *margo supraorbitalis* sharp, glabella weak, *inclinatio frontale* nearly arched, *pars parietalis* ascending, *squama ossis occipitalis* arched to elongated, *protuberantia occipitalis externa* weak, *tuberculum marginale* medium, *crista supramastoidea* strong, *tuber parietale* large, *planum nuchale* with weak topography, *processus mastoideus* small, chin medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* nearly flat.

Grooves in front teeth.

**Cranial metrics:** dolichocranic, hypsicranic, acrocranic, eurytopic, leptoprosopic, leptenic, chamaeprosopic, mesoconchic, dolichostenomandibular

**Postcranial skeleton:** fragments of vertebrae and ribs, bones of hand and foot partially preserved. Long bones damaged, bones of left forearm bound with sinter. Femurs are platymeric, without pilaster, tibiae mesoconchic.

**Pathology:** dental caries in upper right M1 and left M3, lower right P2, three intravital losses. Vertebrae display arthritic alterations. Healed fracture in distal end of left radius (*Figure 74*).

**Varieties:** *sutura metopica persistens*

**Burial 45/1965: Museum Inv. No. A 1509**

S+, P+

**Sex:** male? (robusticity)

**Age:** 40–50 years (dental abrasion)

**Individual:** fragments of bones

**Skull:** reconstructed incomplete *calvaria*, part of mandible. *Tuber frontale* medium, *arcus superciliaris* medium, *margo supraorbitalis* indecisive, *inclinatio frontale* mildly recessive, *pars parietalis* ascending, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *crista supramastoidea* strong, *planum nuchale* with distinct topography.

**Postcranial skeleton:** fragments of shafts of radii, femurs and left tibia.

**Pathology:** dental caries in five molars and premolars.

**Burial 46/1965: Museum Inv. No. A 1510**

L0, P+

**Sex:** undeterminable

**Age:** adult

**Individual:** fragments of bones

**Postcranial skeleton:** parts of femurs.

**Burial 47/1965: Museum Inv. No. A 1511**

S+, P+(+)

**Age:** about 1.5 years (dental eruption)

**Individual:** fragments of bones

**Skull:** fragments of cranial vault, both pyramids, central part of mandible, teeth.

**Postcranial skeleton:** damaged diaphyses of long bones.

**Burial 48/1965: Museum Inv. No. A 1512**

S+++ , P++

**Sex:** female? (morphology of skull and pelvis)

**Age:** 20–24 years (dental abrasion, ossification of pelvis)

**Individual:** well preserved gracile skeleton with medium muscle topography

**Stature:** 144.0 cm (F1 sin.)

**Skull:** well preserved (*Figure 38*), partially reconstructed, with damaged right zygomatic.

*Tuber frontale* medium, *arcus superciliaris* weak, *margo supraorbitalis* sharp, glabella weak, *inclinatio frontale* mildly recessive, *pars parietalis* ascending, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* weak, *tuberculum marginale* small, *crista supramastoidea* medium, *tuber parietale* medium, *planum nuchale* with weak topography, *processus*

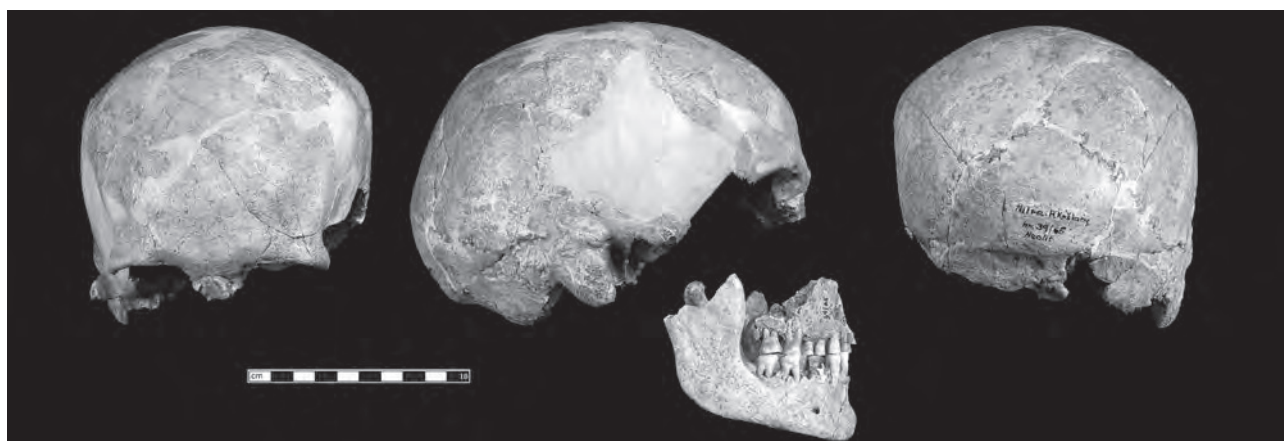


FIGURE 36. Nitra No. 39/65. Frontal, lateral and occipital view of the skull of a 40-50-year-old female.



FIGURE 37. Nitra No. 44/65. Frontal, lateral and occipital view of the skull of a 40-55-year-old female.



FIGURE 38. Nitra No. 48/65. Frontal, lateral and occipital view of the skull of a 20-24-year-old female.

*mastoideus* small, chin medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* nearly flat.

Dental abrasion is asymmetric, especially the left side of maxilla is more abraded.

**Cranial metrics:** mesocranic, orthocranic, acrocranic, hypsicranic, stenometopic, mesoconchic, chamaerhinic, leptostaphylinic, orthognathic, dolichostenomandibular.

**Postcranial skeleton:** vertebrae and ribs partially damaged, bones of hand and foot moderately preserved, with mild lipping in hand phalanges. Pelvis damaged, with female morphology and partially fused iliac crest. Long bones partially damaged, femurs are hyperplatymeric, with weak pilaster, tibiae eurycnemic.

**Pathology:** dental caries in lower right M2, microdont upper right I2.

**X-ray:** tibiae – Harris lines

**Burial 49/1965: Museum Inv. No. A 1513**

S++, P++

**Age:** 4–5 years (dental eruption)

**Individual:** moderately preserved skeleton

**Skull:** damaged, reconstructed *calvaria* (Figure 39), without base, separate parts of base, damaged alveolar process of right maxilla, right mandibular ramus.

**Postcranial skeleton:** several parts of vertebral arches, damaged diaphyses of humeri, femurs, tibiae and fibulae, damaged ilia and right ischium.

**Pathology:** *cribra orbitalia* in both orbits. Cranial trauma in the right part of occipital in the area of *linea nuchae suprema* – crescent-shape fracture, 35 mm long, the whole bone was not preserved to get complete image of the (perimortem?) trauma (Figure 72).

**X-ray:** tibiae – negative result

**Burial 50/1965: Museum Inv. No. A 1514**

S++, P+

**Age:** 4–5 years (dental eruption)

**Individual:** moderately preserved skeleton

**Skull:** damaged reconstructed *calvaria* (Figure 40), missing base, fragments of maxillar alveolar process, mandible without right ramus.

**Postcranial skeleton:** damaged diaphyses of long bones, fragments of ribs, damaged right ilium.

**Pathology:** *cribra orbitalia* in both orbits. Semicircular trauma in right parietal with 18 mm radius, probably perimortal (Figure 73).

**Burial 52/1965: Museum Inv. No. A 1515**

S+(+), P+

**Sex:** female (metrics of talus, morphology of skull is indecisive)

**Age:** 45–55 years (dental abrasion)

**Individual:** poorly to moderately preserved skeleton with medium muscle topography

**Skull:** damaged *calvaria* (Figure 41), base is missing, left half of mandible.

*Tuber frontale* flat, *arcus superciliaris* small, *margo supraorbitalis* weakly rounded, *pars parietalis* nearly horizontal, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *crista supramastoidea* medium, *tuber parietale* medium, *planum nuchale* with distinct topography, *processus mastoideus* medium, chin medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* everted.

Deposit of dental calculus in lower incisors.

**Postcranial skeleton:** fragments of cervical vertebrae and ribs, poorly preserved bones of hand and foot with lipping in hand phalanges. Damaged shafts of long bones, femurs with weak pilaster.

**Pathology:** large dental caries in lower left P2 and M1 with periapical inflammation (Figure 68). Severe inflammatory alterations in distal part of right fibula and tibia, probably *osteomyelitis* (Figure 75).

**Burial 53/1965: Museum Inv. No. A 1516**

S++, P++

**Sex:** female (morphology of pelvis, skull is indecisive)

**Age:** 24–30 (dental abrasion, symphysis)

**Individual:** well preserved gracile skeleton with medium muscle topography

**Stature:** 156.8 cm (F1)

**Skull:** nearly complete (Figure 42), partially reconstructed, missing nasofrontal region.

*Tuber frontale* medium, *arcus superciliaris* weak, *margo supraorbitalis* sharp, *inclinatio frontale* mildly recessive, *pars parietalis* nearly horizontal, *squama ossis occipitalis* arched to elongated, *protuberantia occipitalis externa* distinct, *tuberculum marginale* very large, *crista supramastoidea* very mild, *tuber parietale* medium, *planum nuchale* with very distinct topography, *processus mastoideus* medium, chin medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* everted.

**Cranial metrics:** dolichocranic, orthocranic, acrocranic, hypsicranic, metriocranic, metriometopic, mesostaphyline, dolichostenomandibular

**Postcranial skeleton:** vertebrae and ribs damaged, some are bound with sinter. Damaged right clavicle, acromial part distinctively bigger than the left one. Pelvis well preserved, with female morphology including *sulcus praeauricularis*. Bones of hand and foot partially preserved.

Long bones well preserved, femurs are platymeric, with weak pilaster, tibiae eurycnemic.

**Pathology:** Left elbow affected by inflammatory process, alterations are displayed in distal end of humerus and



FIGURE 39. Nitra No. 49/65. Frontal, lateral and occipital view of the skull of a 4–5-year-old child.



FIGURE 40. Nitra No. 50/65. Frontal, lateral and occipital view of the skull of a 4–5-year-old child.



FIGURE 41. Nitra No. 52/65. Frontal, lateral and occipital view of the skull of a 45–55-year-old female.



FIGURE 42. Nitra No. 53/65. Frontal, lateral and occipital view of the skull of a 24–30-year-old female.



FIGURE 43. Nitra No. 54/65. Frontal, lateral and occipital view of the skull of a 7-year-old child.



FIGURE 44. Nitra No. 56/65. Frontal, lateral and occipital view of the skull of a 50-year-old male.

proximal part of ulna, head of radius was not preserved (Figure 76).

**X-ray:** tibiae – Harris lines

**Burial 54/1965: Museum Inv. No. A 1517**

S++(+), P++

**Age:** 7 years (dental eruption)

**Individual:** moderately to well preserved skeleton

**Skull:** well preserved (Figure 43), with damaged base and zygomatic arches. Mandible without right ramus.

**Postcranial skeleton:** parts of vertebrae and ribs, damaged diaphyses of long bones, fragments of pelvis.

**Pathology:** inflammatory alterations in distal part of tibiae and fibulae.

**X-ray:** tibiae – negative result

**Burial 55/1965: Museum Inv. No. A 1518**

S+, P++

**Age:** 6 months

**Individual:** moderately preserved skeleton

**Skull:** fragments of cranial vault, both pyramids, part of mandible.

**Postcranial skeleton:** parts of vertebrae and ribs, damaged diaphyses of long bones, left ulna bowed, damaged left ilium.

**Pathology:** porosity in endocranial surface of occipital and sphenoid, probably manifestation of rickets suggested by bowing deformity of left ulna.

**Burial 56/1965: Museum Inv. No. A 1519**

S++, P++

**Sex:** male (morphology of pelvis, skull is indecisive)

**Age:** 50+ years (dental abrasion)

**Individual:** moderately preserved robust skeleton with distinct muscle topography

**Stature:** 168.1 cm (F1 dx.)

**Skull:** well preserved (Figure 44), reconstructed, damaged base and nasal region.

*Tuber frontale* medium, *arcus superciliaris* medium, *margo supraorbitalis* sharp, *glabella* distinct, *inclinatio frontale* mildly recessive, *pars parietalis* nearly horizontal, *squama ossis occipitalis* arched to elongated, *protuberantia occipitalis externa* distinct, *tuberculum marginale* mild, *crista supramastoidea* strong, *tuber parietale* medium, *planum nuchale* with very distinct topography, *processus mastoideus* medium, *chin* medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* weakly everted.

**Cranial metrics:** mesocranic, hypsicranic, metriocranic, eurytopic, dolichostenomandibular

**Postcranial skeleton:** bones of the trunk fragmentary, pelvis damaged, with male morphology. Bones of hand and foot partially preserved, with lipping in hand phalanges. Long bones damaged, femurs platymeric, with medium pilaster, tibiae eurytopic.

**Pathology:** dental caries in upper right P2, M1 and M3, periapical inflammation in both upper first molars. Mild porotic hyperostosis in occipital. Inflammatory alterations in distal ends of fibulae.

**X-ray:** tibiae – Harris lines

**Burial 57/1965: Museum Inv. No. A 1520**

S++, P++

**Sex:** female (morphology of skull, metrics of talus)

**Age:** 20–30 years (dental abrasion 30–35 years, ossification of bones to 25 years)

**Individual:** moderately preserved gracile skeleton with medium muscle topography

**Stature:** 147.4 cm (Ti1 dx.)

**Skull:** damaged, partially reconstructed *calvaria* (Figure 45), with damaged base, missing right temporal. Separate zygomatics, damaged left maxilla, mandible without condyles.

*Tuber frontale* large, *arcus superciliaris* weak, *margo supraorbitalis* sharp, *inclinatio frontale* arched, *pars parietalis* nearly horizontal, *squama ossis occipitalis* elongated, *protuberantia occipitalis externa* weak, *tuberculum marginale* small, *crista supramastoidea* weak, *tuber parietale* medium, *planum nuchale* with mild topography, *processus mastoideus* small, *chin* medium prominent, *protuberantia mentalis* medium, *angulus mandibulae* flat.

**Cranial metrics:** dolichocranic, orthocranic, metriocranic, metriometopic

**Postcranial skeleton:** vertebrae and ribs fragmentary, bones of hand and foot partially preserved. Pelvis damaged, with indecisive morphology and fusing iliac crest. Long bones damaged, femurs platymeric, with weak pilaster, tibiae eurytopic.

**Pathology:** mild *cribra orbitalia* in both orbits. Dental caries in lower left M1. Upper left P1 rotated, lower left premolars are missing, only one socket preserved – possible retention. Distinct diastema between lower first incisors.

**Burial 58/1965: Museum Inv. No. A 1521**

S++, P++

**Sex:** male (morphology of skull)

**Age:** 40–50 years (dental abrasion)

**Individual:** moderately preserved upper part of skeleton, bones are very robust with distinct muscle topography

**Stature:** 175.2 cm (H1 sin.)

**Skull:** damaged, partially reconstructed (Figure 46), with damaged base and zygomatic arches, missing right zygomatic and left mandibular condyle.

*Tuber frontale* medium, *arcus superciliaris* prominent, *margo supraorbitalis* rounded, *glabella* massive, *inclinatio frontale* medium recessive, *pars parietalis* nearly horizontal, *squama*

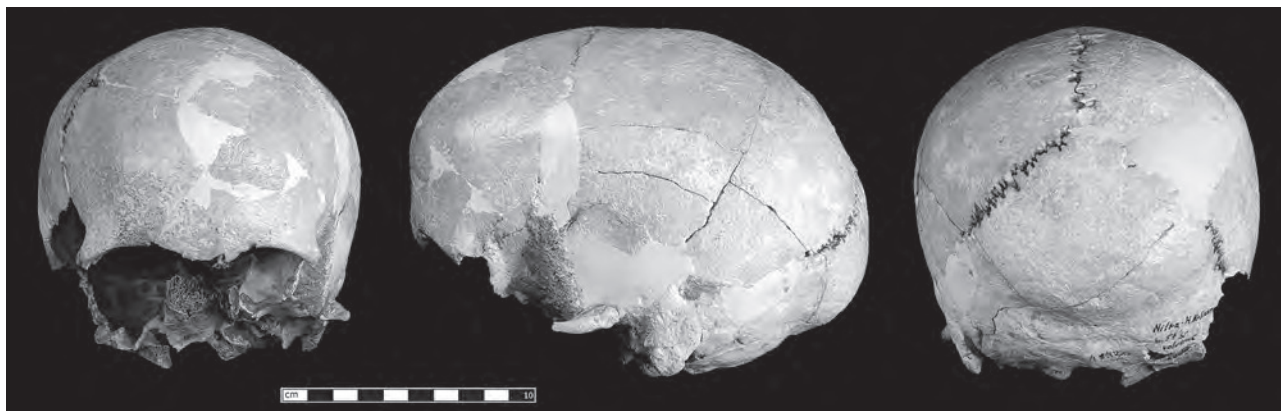


FIGURE 45. Nitra No. 57/65. Frontal, lateral and occipital view of the skull of a 20–30-year-old female.



FIGURE 46. Nitra No. 58/65. Frontal, lateral and occipital view of the skull of a 40–50-year-old male.



FIGURE 47. Nitra No. 59/65. Frontal, lateral and occipital view of the skull of a 14–15-year-old child.

*ossis occipitalis* elongated, *protuberantia occipitalis externa* very distinct, *tuberculum marginale* large, *crista supramastoidea* very strong, *tuber parietale* medium, *planum nuchale* with distinct topography, *processus mastoideus* medium, chin medium prominent, *tubera mentalia* distinct, *angulus mandibulae* everted.

**Cranial metrics:** hyperdolichocranic, hypsicranic, acrocranic, eurytopic, mesoconchic, leptorrhine, dolichostenomandibular

**Postcranial skeleton:** vertebrae and ribs damaged, right humerus, ulna and radius damaged, left-side bones complete. Bones of hand well preserved, phalanges with distinct longitudinal lipping (*Figure 66*).

**Pathology:** osteophytes in some vertebrae.

#### **Burial 59/1965: Museum Inv. No. A 1522**

S++, P++

**Age:** 14–15 years (dental eruption)

**Individual:** moderately preserved skeleton

**Skull:** damaged, partially reconstructed (*Figure 47*), missing base, damaged right temporal and orbit, separate left zygomatic and maxilla, mandible complete.

**Postcranial skeleton:** preserved parts of vertebrae and ribs, diaphyses of long bones damaged, right ilium well preserved, other pelvis bones fragmentary.

**Pathology:** *cribra orbitalia* in right orbit (left orbit not preserved), lower canines rotated.

**X-ray:** tibiae – negative result

#### **Burial 60/1965: Museum Inv. No. A 1523**

S+, P+

**Age:** 1 year (dental eruption)

**Individual:** fragments of bones

**Skull:** small fragments, teeth.

**Postcranial skeleton:** fragments of vertebrae, damaged diaphyses of tibia, femur and humerus.

#### **Burial 61/1965: Museum Inv. No. A 1524**

S++, P++

**Sex:** female (morphology of skull and pelvis)

**Age:** 45–55 years (dental abrasion, osteophytes in joint edges)

**Individual:** moderately preserved gracile skeleton with medium muscle topography

**Stature:** 157.6 cm (F1)

**Skull:** well preserved with damaged base (*Figure 48*), damaged left maxilla, mandible complete.

*Tuber frontale* medium, *arcus superciliaris* weak, *margo supraorbitalis* indecisive, glabella weak, *inclinatio frontale* mildly recessive, *pars parietalis* nearly horizontal, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* with mild topography,

*tuberculum marginale* mild, *crista supramastoidea* very strong, *tuber parietale* medium, *planum nuchale* with distinct topography, *processus mastoideus* medium, chin medium prominent, *tubera mentalia* distinct, *angulus mandibulae* weakly everted.

**Cranial metrics:** hyperdolichocranic, hypsicranic, acrocranic, eurytopic, hyperleptoprosopic, mesoconchic, orthognathic, dolichostenomandibular

**Postcranial skeleton:** vertebrae and ribs damaged, in left scapula was *os acromiale* (not preserved, but manifested by the shape of the medial part of acromion). Pelvis damaged, with female morphology including *sulcus praeauricularis*. Bones of hand and foot partially preserved, hand phalanges with lipping. Osteophytes in some joints' edges. Long bones partially damaged, femurs hyperplatymetric, with weak pilaster, tibiae platycnemic.

**Pathology:** dental caries in lower right M2, intravital loss of all incisivi and both upper and lower right first molars.

**Varieties:** *os acromiale sin.*

**X-ray:** tibiae – negative result

#### **Burial 62/1965: Museum Inv. No. A 1525**

S++, P+(+)

**Sex:** male (morphology of skull, metrics of femur)

**Age:** 30–35 years (dental abrasion)

**Individual:** moderately preserved skeleton, bones are abraded and covered with sinter, parts of vertebrae and foot bones bound together

**Stature:** 164.3 cm (F1 sin.)

**Skull:** reconstructed *calvaria* (*Figure 49*), partially deformed by taphonomic process, missing base, glabella region, right temporal, separate maxilla, mandible with damaged condyles. *Tuber frontale* medium, *margo supraorbitalis* weakly rounded, *inclinatio frontale* medium recessive, *pars parietalis* nearly horizontal, *squama ossis occipitalis* elongated, *protuberantia occipitalis externa* medium, *crista supramastoidea* medium, *planum nuchale* with distinct topography, *processus mastoideus* large, chin strongly prominent, *tubera mentalia* distinct, *angulus mandibulae* everted.

**Postcranial skeleton:** vertebrae, ribs and pelvis fragmentary, long bones damaged. Femurs are hyperplatymetric, without pilaster, tibiae mesocnemic.

**X-ray:** tibiae – Harris lines

#### **Burial 63/1965: Museum Inv. No. A 1526**

S+, P+

**Sex:** male? (robusticity)

**Age:** 35–40 years (dental abrasion)

**Individual:** fragments of bones, abraded and covered with sinter

**Skull:** fragments of cranial vault, medial part of maxillar alveolar arch, damaged mandible. Teeth crowns are split from the roots.

**Postcranial skeleton:** fragments of shafts of femurs, tibiae and humeri.

**Burial 64/1965: Museum Inv. No. A 1527**

S+, P++

**Sex:** female (morphology of pelvis)

**Age:** 40–45 years (dental abrasion)

**Individual:** moderately preserved gracile skeleton with medium muscle topography

**Stature:** 158.9 cm (F1)

**Skull:** fragment of the base and partially restored mandible.

Chin weakly everted, *tubera mentalia* mild, *angulus mandibulae* nearly flat.

**Cranial metrics:** dolichostenomandibular

**Postcranial skeleton:** well preserved vertebrae and ribs. Pelvis damaged with distinct *sulcus praeauricularis*. Bones of hand and feet preserved, hand phalanges with lipping. Long bones well preserved, femurs hyperplatymetric, with weak pilaster, tibiae mesocnemic.

**Pathology:** dental caries in lower left P2 and M1 with periapical inflammatory alterations.

**X-ray:** tibiae – negative result

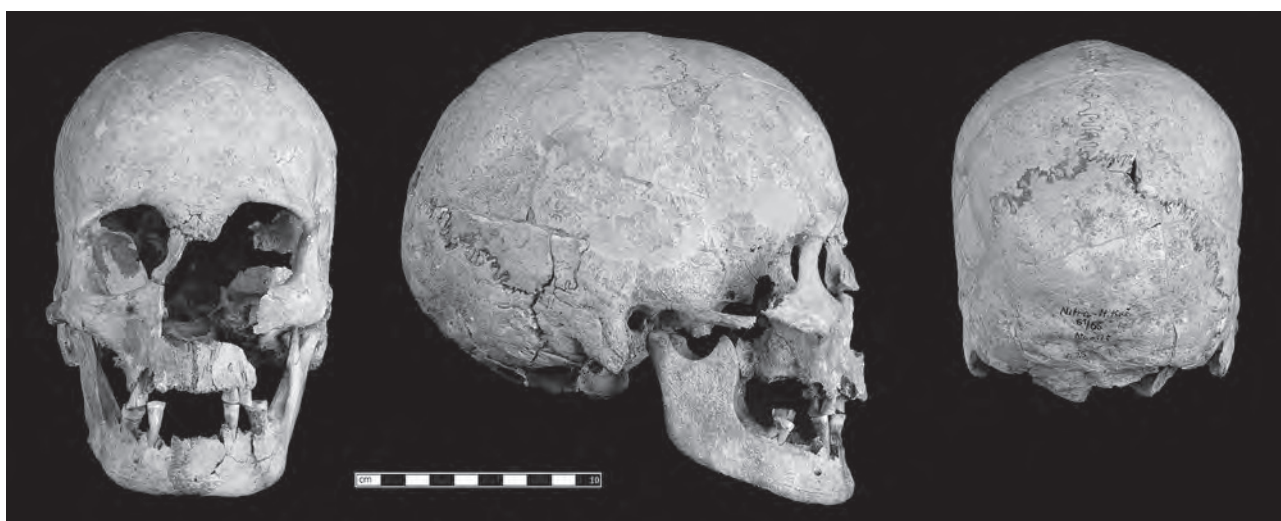


FIGURE 48. Nitra No. 61/65. Frontal, lateral and occipital view of the skull of a 45–55-year-old female.



FIGURE 49. Nitra No. 62/65. Frontal, lateral and occipital view of the skull of a 30–35-year-old male.

**Burial 65/1965: Museum Inv. No. A 1528**

S++, P++

**Sex:** female (morphology of pelvis and skull)**Age:** 35–40 years (dental abrasion)**Individual:** moderately preserved skeleton with medium muscle topography**Skull:** damaged, reconstructed *calvaria* and damaged base (Figure 50), separate right zygomatic, damaged maxilla and mandible.

*Tuber frontale* medium, *arcus superciliaris* weak, glabella weak, *inclinatio frontale* nearly arched, *pars parietalis* ascending, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* medium, *tuberculum marginale* medium, *crista supramastoidea* medium, *tuber parietale* large, *planum nuchale* with distinct topography, *processus mastoideus* medium, chin medium prominent, *tubera mentalia* distinct, *angulus mandibulae* everted.

**Cranial metrics:** mesocranic, orthocranic, tapeinocranic**Postcranial skeleton:** vertebrae and ribs moderately preserved, pelvis damaged, with female morphology including *sulcus praeauricularis*. Bones of hand and foot partially preserved, with mild lipping in hand phalanges. Long bones damaged, femurs platymeric, with weak pilaster, tibiae mesocnemic.**Varieties:** *sutura metopica persistens*, *ossicula suturae lambdae*.**Burial 66/1965: Museum Inv. No. A 1529**

S++, P++

**Sex:** female (morphology of skull, metrics of talus)**Age:** 50+ years (dental abrasion)**Individual:** moderately preserved gracile skeleton with medium muscle topography**Stature:** 150.2 cm (F1 dx.)**Skull:** partially reconstructed *calvaria* with damaged left part of frontal and base (Figure 51). From facial skeleton are preserved nasals, right zygomatic and fragments of maxilla and mandible.

*Tuber frontale* medium, *arcus superciliaris* weak, *margo supraorbitalis* indecisive, glabella weak, *inclinatio frontale* nearly arched, *pars parietalis* nearly horizontal, *squama ossis occipitalis* elongated, *protuberantia occipitalis externa* medium, *tuberculum marginale* mild, *crista supramastoidea* medium, *tuber parietale* large, *planum nuchale* with distinct topography, *processus mastoideus* small.

**Cranial metrics:** dolichocranic, hypsicranic, metriocranic, hypsiconchic**Postcranial skeleton:** small fragments of vertebrae, ribs and pelvis. Bones of hand and foot partially preserved. Long bones partially damaged, femurs platymeric, with weak pilaster, tibiae eurymeric.**Pathology:** intravital loss – lower right M1.**X-ray:** tibiae – Harris lines**Burial 67/1965: Museum Inv. No. A 1530**

S+(+), P+

**Age:** 2 years (dental eruption)**Individual:** poorly preserved skeleton**Skull:** reconstructed damaged *calvaria* (Figure 52), missing glabella, right parietal, base. Facial skeleton not preserved, mandible without condyles.**Postcranial skeleton:** parts of vertebrae and ribs, fragment of right ilium, damaged diaphyses of femurs, tibiae and humeri.**Burial 68/1965: Museum Inv. No. A 1531**

S+, P0

**Age:** 8–9 years (dental eruption)**Individual:** part of *calvaria***Skull:** part of reconstructed damaged *calvaria* (Figure 53), without base, fragment of left mandibular ramus, teeth.**Postcranial skeleton:** several phalanges.**Pathology:** Possible cranial trauma in left parietal – irregular shape with semicircular part.**Burial 69/1965: Museum Inv. No. A 1532**

S++, P++(+)

**Sex:** male (morphology of skull, metrics of talus, morphology of pelvis indecisive)**Age:** 18–20 years (ossification)**Individual:** well preserved robust skeleton with medium muscle topography, bones in places covered by sinter**Stature:** 168.4 cm (F1 sin.)**Skull:** well preserved (Figure 54) with damaged base, mastoidei process and zygomatic arches, mandible without condyles.

*Tuber frontale* medium, *arcus superciliaris* medium, *margo supraorbitalis* weakly rounded, glabella medium, *inclinatio frontale* mildly recessive, *pars parietalis* nearly horizontal, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* mild, *tuberculum marginale* medium, *crista supramastoidea* strong, *tuber parietale* medium, *planum nuchale* with weak topography, chin medium prominent, *tubera mentalia* distinct, *angulus mandibulae* weakly everted.

**Cranial metrics:** mesocranic, hypsicranic, acrocranic, eurymeric, brachystaphyline**Postcranial skeleton:** epiphyses not completely fused. Vertebrae well preserved, ribs damaged. Pelvis with damaged pubis, morphology indecisive. Bones of hand and foot well preserved, with lipping in hand phalanges. Long bones partially damaged, with enthesopathy in right humerus (*m. pectoralis major*) (Figure 64). Femurs platymeric, with weak pilaster, tibiae mesocnemic.**Pathology:** retention of lower right C, with persisted deciduous tooth. Porotic hyperostosis in lambda region.**X-ray:** tibiae – Harris lines



FIGURE 50. Nitra No. 65/65. Frontal, lateral and occipital view of the skull of a 35–40-year-old female.



FIGURE 51. Nitra No. 66/65. Frontal, lateral and occipital view of the skull of a 50-year-old female.

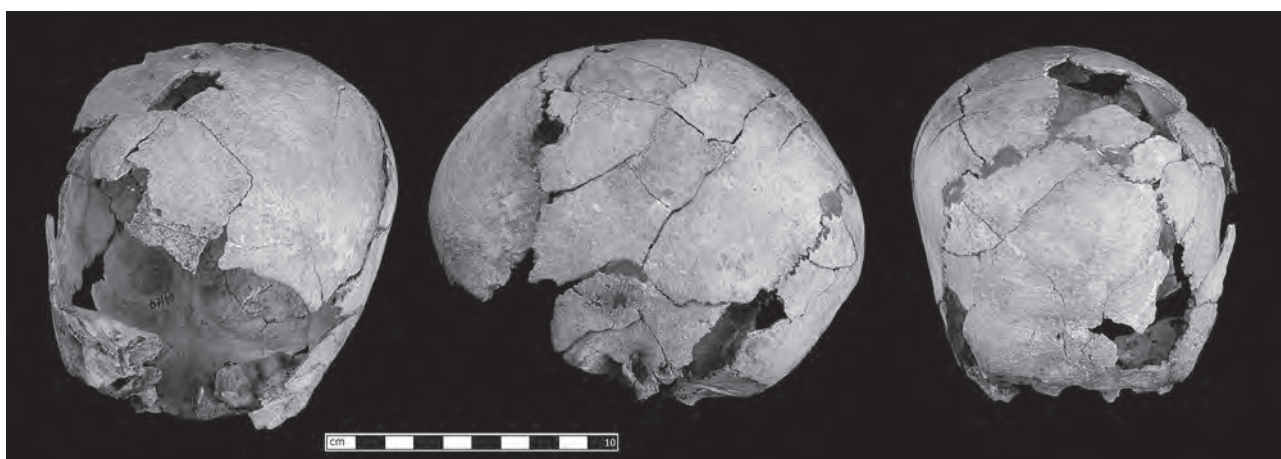


FIGURE 52. Nitra No. 67/65. Frontal, lateral and occipital view of the skull of a 2-year-old child.



FIGURE 53. Nitra No. 68/65. Lateral and occipital view of the skull of an 8–9-year-old child.

**Burial 70/1965: Museum Inv. No. A 1533**

S++(+), P++

**Sex:** female (morphology of skull and pelvis)

**Age:** 35–40 years (dental abrasion)

**Stature:** 151.6 cm (H1)

**Individual:** well preserved gracile skeleton with medium muscle topography

**Skull:** well preserved (Figure 55), partially reconstructed. Damaged glabella, zygomatic arches and mandibular condyles. *Tuber frontale* medium, *arcus superciliaris* medium, *margo supraorbitalis* indecisive, *glabella* medium, *inclinatio frontale* mildly recessive, *pars parietalis* ascending, *squama ossis occipitalis* arched, *protuberantia occipitalis externa* mild, *tuberculum marginale* medium, *crista supramastoidea* mild, *tuber parietale* medium, *planum nuchale* with mild topography, chin medium prominent, *tubera mentalia* distinct, *angulus mandibulae* weakly everted.

**Cranial metrics:** hyperdolichocranic, hypsicranic, acrocranic, eurytopic, mesoconchic, leptostaphylinic, dolichosteno-mandibular

**Postcranial skeleton:** bones of the trunk partially damaged. Pelvis missing pubis, with female morphology including *sulcus praeauricularis*. Bones of hand and foot partially preserved, with lipping in hand phalanges. Long bones partially damaged, femurs platymeric, with weak pilaster, tibiae eurycnemic.

**Pathology:** dental caries in lower right M1, M3 and left M2, M3.

**Variety:** *os Incae completum bipartitum*

**X-ray:** tibiae – Harris lines on tibia sin.

**Burial 71/1965: Museum Inv. No. A 1534**

S+(+), P++

**Age:** 5–6 years (dental eruption, length of long bones)

**Individual:** moderately preserved skeleton

**Skull:** reconstructed damaged *calvaria* (Figure 56), without base, separate temporals and damaged maxilla, mandible.

**Postcranial skeleton:** parts of vertebrae and ribs, both ilia and left ischium, damaged diaphyses of long bones.

**Pathology:** periostitic alterations in long bones.

**X-ray:** tibiae – negative result

**Burial 72/1965: Museum Inv. No. A 1535**

S++(+), P++(+)

**Sex:** male? (morphology of pelvis, skull is indecisive)

**Age:** 20–30 years (dental abrasion, ossification)

**Individual:** well preserved gracile skeleton with medium muscle topography

**Stature:** 165.6 cm (F1)

**Skull:** well preserved (Figure 57), missing zygomatic arches and right zygomatic.

*Tuber frontale* medium, *arcus superciliaris* weak, *margo supraorbitalis* indecisive, *glabella* weak, *inclinatio frontale* nearly arched, *pars parietalis* nearly horizontal, *squama ossis occipitalis* arched to elongated, *protuberantia occipitalis externa* medium, *tuberculum marginale* medium, *crista supramastoidea* medium, *tuber parietale* small, *planum nuchale* with distinct topography, *processus mastoideus* medium, chin weakly everted, *tubera mentalia* distinct, *angulus mandibulae* medium everted.

**Cranial metrics:** hyperdolichocranic, hypsicranic, acrocranic, eurytopic, mesorrhinic, leptostaphylinic, orthognathic

**Postcranial skeleton:** vertebrae and ribs partially preserved, sacrum damaged. Pelvis missing pubis, with male morphology. Long bones well preserved, femurs eurymeric, with strong pilaster, tibiae mesocnemic.

**Pathology:** cranial trauma in right temporal squama – semicircular with 40 mm radius (Figure 71).

**Varieties:** *ossiculum suturae labdoideae*.

**X-ray:** tibiae – Harris lines



FIGURE 54. Nitra No. 69/65. Frontal, lateral and occipital view of the skull of an 18–20-year-old male.



FIGURE 55. Nitra No. 70/65. Frontal, lateral and occipital view of the skull of a 35–40-year-old female.



FIGURE 56. Nitra No. 71/65. Frontal, lateral and occipital view of the skull of a 5–6-year-old child.



FIGURE 57. Nitra No. 72/65. Frontal, lateral and occipital view of the skull of a 20–30-year-old male.



FIGURE 58. Nitra No. 74/65. Frontal, lateral and occipital view of the skull of a 3-year-old child.



FIGURE 59. Nitra No. 76/65. Frontal, lateral and occipital view of the skull of a 40–50-year-old male.

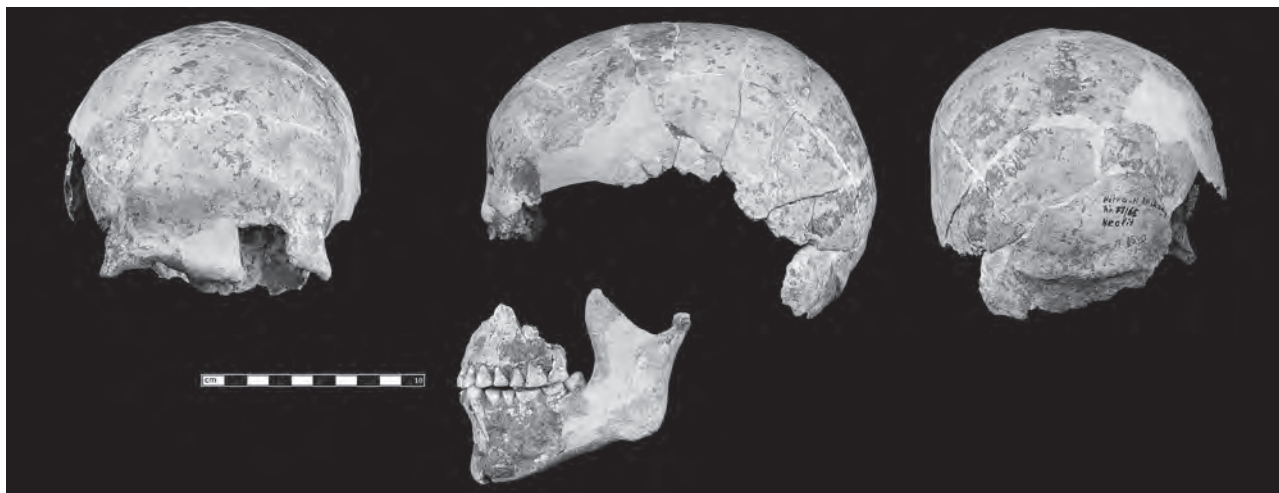


FIGURE 60. Nitra No. 77/65. Frontal, lateral and occipital view of the skull of a 35–45-year-old male.

**Burial 73/1965: Museum Inv. No. A 1536**

S+, P+

**Age:** 0.5–1 year (dental eruption)

**Individual:** fragments of bones

**Skull:** right part of frontal, both pyramids, fragments of cranial vault, mandible without rami. Teeth separate.

**Postcranial skeleton:** parts of vertebrae and ribs, damaged clavicles, damaged diaphyses of long bones.

**Burial 74/1965: Museum Inv. No. A 1537**

S++, P++

**Age:** 3 years (dental eruption)

**Individual:** moderately preserved skeleton

**Skull:** partially preserved reconstructed *calvaria* (Figure 58), missing base, separate pyramids, maxilla, mandible without rami.

**Postcranial skeleton:** several parts of vertebrae and ribs, damaged ilia and diaphyses of long bones.

**Pathology:** *cribra orbitalia* in both orbits.

**Burial 75/1965: Museum Inv. No. A 1538**

S+, P+

**Age:** 16–20 years (dental eruption, dental abrasion 20–24 years)

**Individual:** fragments of bones

**Skull:** damaged fragments of cranial vault, mandibular alveolar arch

**Postcranial skeleton:** fragments of long bones.

**Burial 76/1965: Museum Inv. No. A 1539**

S++, P++

**Sex:** male? (morphology of skull, metrics of humerus male, femur rather female)

**Age:** 40–50 years (dental abrasion)

**Individual:** moderately preserved skeleton with distinct muscle topography

**Stature:** 157.9 cm (R1 sin.)

**Skull:** damaged, partially reconstructed *calvaria* (Figure 59), missing base, damaged maxilla, mandible without rami and front teeth.

*Tuber frontale* medium, *arcus superciliaris* medium, glabella distinct, *inclinatio frontale* nearly arched, *pars parietalis* nearly horizontal, *squama ossis occipitalis* elongated, *protuberantia occipitalis externa* medium, *crista supramastoidea* strong, *tuber parietale* medium, *planum nuchale* with distinct topography, *processus mastoideus* medium, chin weakly everted, *tubera mentalia* distinct, *angulus mandibulae* distinctly everted.

Skull is short, bent in occiput.

**Cranial metrics:** brachycranic, hypsicranic, acrocranic

**Postcranial skeleton:** several fragments of ribs, parts of pelvis. Bones of hand and foot partially preserved, with mild lipping in hand phalanges. Long bones damaged, femurs with very distinct *linea aspera*, hyperplatymeric, with weak pilaster, tibiae mesocnemic.

**Varieties:** *sutura metopica persistens*

**X-ray:** tibiae – negative result

**Burial 77/1965: Museum Inv. No. A 1540**

S(+), P(+)

**Sex:** male? (morphology of skull indecisive, mandible rather male, humerus metrics rather female, femurs indecisive)

**Age:** 35–45 years (dental abrasion)

**Individual:** poorly preserved skeleton with distinct muscle topography, bones partially covered by sinter

**Stature:** 159.0 cm (H1 sin.)

**Skull:** damaged reconstructed *calvaria* (Figure 60), damaged maxilla, mandible taphonomically deformed and covered with sinter.

*Tuber frontale* medium, *arcus superciliaris* medium, *inclinatio frontale* nearly arched, *pars parietalis* nearly horizontal, *squama ossis occipitalis* flat, *protuberantia occipitalis externa* medium, *crista supramastoidea* medium, *tuber parietale* medium, *planum nuchale* with very distinct topography, *processus mastoideus* medium, chin medium prominent, *tubera mentalia* distinct, *angulus mandibulae* everted.

**Cranial metrics:** dolichocranic

**Postcranial skeleton:** fragments of cervical vertebrae and ribs, bones of hand and foot partially preserved. Pelvis missing, long bones damaged. Femurs hyperplatymeric, with weak pilaster, right tibia platynecemic.

**X-ray:** tibiae – negative result

## DEMOGRAPHY

The studied set from Nitra-Horné Krškany consisted of skeletal remains of 77 individuals of which 28 were juveniles (36.4 %) and 49 adults (63.6 %). Among adults there were 19 males (38.8 %), 27 females

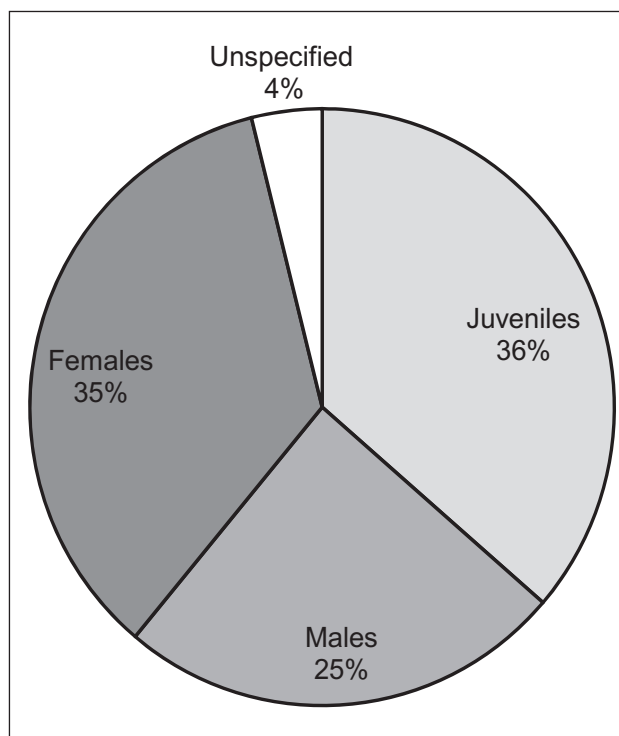


FIGURE 61. Distribution of individuals from Nitra by sex.

TABLE 1. Distribution of individuals from Nitra by age and sex.

	Males		Females		Unspecified		Total	
	n	%	n	%	n	%	n	%
infans I					2	7.4	2	2.6
infans II					16	59.3	16	20.8
infans III					6	22.2	6	7.8
juvenis	1	5.0			3	11.1	4	5.2
Total-juvenile					27	100.0	28	36.4
juvenis-adultus I	1	5.0	1	3.7			2	2.6
adultus I	1	5.0	8	29.6			9	11.7
adultus I-II			2	7.4	1		3	3.9
adultus II	4	20.0	4	14.8			8	10.4
adultus II-maturus I	3	15.0					3	3.9
maturus I	5	25.0	2	7.4			7	9.1
maturus I-II	1	5.0	5	18.5			6	7.8
maturus II	2	10.0	2	7.4			4	5.2
maturus II-senilis	2	10.0	2	7.4			4	5.2
adults			1	3.7	2		3	3.9
Total-adults	19	38.8	27	55.1	3	6.1	49	63.6
Total	20	26.0	27	35.1	30	39.0	77	100.0

(55.1 %) and 3 undeterminable individuals (6.1 %) (Figure 61).

Demographic structure of the cemetery is depicted in Table 1. However, it should be considered that these data are not related to the whole population, but only to the individuals excavated during the archaeological research of the cemetery and subjected to anthropological analysis.

The sex ratio, expressing the ratio representation of males and females in the population, reached 741, which shows the predominance of females in the cemetery.

Mortality in the population peaked twice, in children between four and six years of age and in adults

aged 30–39 years (Figure 62). Most juveniles (57.1 %) belong to the category infans II (0.5–6 years) and 53.6 % of juvenile individuals from the cemetery did not live more than six years. Mortality rates for males and females according to the relative representation in the various age categories are shown in Figure 63, from which it is clear that females often died at a younger age to 35 years, on the contrary mortality at a later age is higher among males. This distribution is typical for prehistoric populations, when the difference is often attributed to higher female mortality related to pregnancy and childbirth.

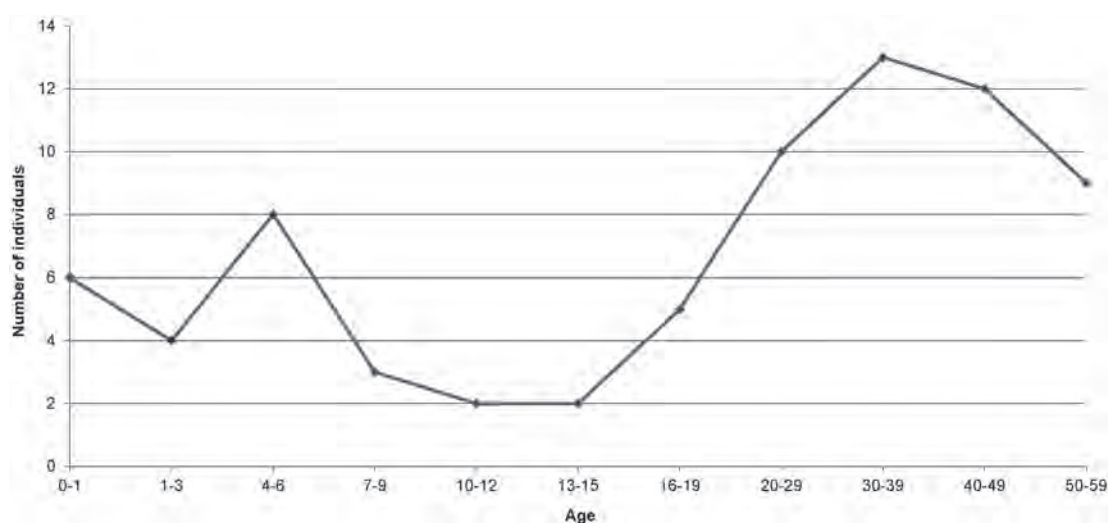


FIGURE 62. Distribution of individuals from Nitra by age.

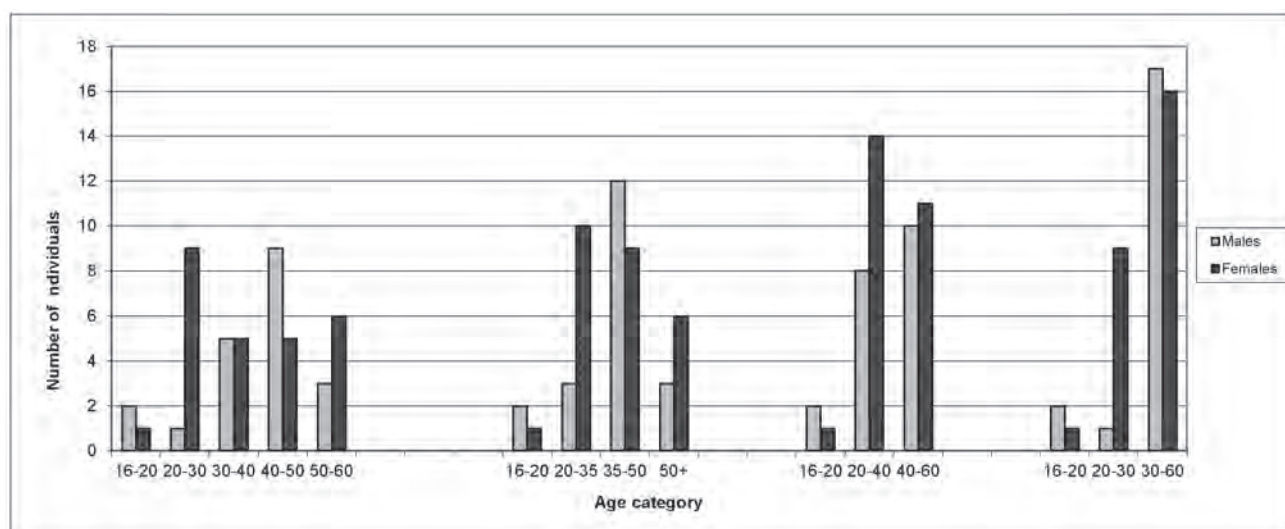


FIGURE 63. Distribution of adult individuals from Nitra by sex in four different types of age classification.

### Metric characteristics

The state of preservation enabled at least partial metric evaluation of 16 male and all 27 female skulls (Table 2). Particularly the facial parts of the skulls were often damaged and did not allow metric analysis. Both males and females had on average long, narrow and high skull. Expressed by average values, the cranial indexes of the Neolithic males from Nitra were I1 – dolichocranic (71.7), I2 – hypsicranic (75.4), I3 – acrocranic (107.2), I4 – hypsicranic (73.3), I5 – acrocranic (102.5), I13 – eurytopic (71.5), I38 – leptoprosopic (94.2), I39 – leptenic (57.0), I42 dx. –

hypsicranic, I42 sin. – mesocranic (80.0), I48 – mesorrhine (47.5), I54 – brachyuranic (121.1), I60 – orthognathic (87.3), I62 – dolichostenomandibular (65.1). Female indexes can be characterized as I1 – dolichocranic (73.0), I2 – orthocranic (74.1), I3 – acrocranic (100.2), I4 – hypsicranic (68.5), I5 – acrocranic (93.8), I13 – eurytopic (73.6), I38 – leptoprosopic (90.6), I39 – mesenic (53.0), I42 – mesocranic (82.6, 78.9), I48 – chamaerhine (52.3), I54 – brachyuranic (123.2), I60 – orthognathic (92.9), I62 – dolichostenomandibular (66.8).

TABLE 2. Metrics of Nitra population.

	Males					Females				
	n	x	min	max	SD	n	x	min	max	SD
M1 – Cranial length	14	189.2	170.0	204.0	8.96	23	184.0	170.0	200.0	6.62
M8 – Cranial breadth	14	135.2	123.0	144.0	5.31	21	134.1	124.0	143.0	5.24
M17 – Basion-bregmatic cranial height	3	146.0	141.0	149.0	3.56	9	135.0	130.0	147.0	4.74
M45 – Bizygomatic facial breadth	1	121.0	121.0	121.0	0	3	120.7	115.0	125.0	4.19
M47 – Facial height	5	122.0	114.0	130.0	5.22	8	111.4	101.0	123.0	7.92
M48 – Upper facial height	4	73.5	68.0	79.0	5.025	7	65.9	57.0	72.0	5.82
I1 – Cranial index	14	71.7	60.3	84.7	5.23	20	73.0	65.3	82.4	4.18
I2 – Length-height index	3	75.4	74.6	75.9	0.56	9	74.1	70.3	78.6	2.66
I3 – Breadth-height index	3	107.2	104.2	112.1	3.51	9	100.2	90.9	118.6	7.15
I4 – Auricular length-height index	11	73.3	66.5	81.2	5.16	14	68.5	61.1	79.3	5.30
I5 – Auricular breadth-height index	11	102.5	86.2	115.2	9.17	14	93.8	79.0	109.7	7.84
I12 – Transverse frontal index	10	81.2	77.9	85.0	2.20	13	82.4	76.8	88.2	3.64
I13 – Transverse frontoparietal index	11	71.5	64.7	80.5	3.77	16	73.6	66.2	96.7	6.89
I33 – Foramen magnum index	3	90.7	86.1	97.2	4.71	6	79.4	72.2	86.5	4.78
I38 – Facial index	1	94.2	94.2	94.2	0	2	90.6	82.8	98.4	7.8
I39 – Upper facial index	1	57.0	57.0	57.0	0	2	53.0	49.2	56.8	3.8
I39 – Malar upper facial index	2	80.3	76.7	83.9	3.6	5	76.8	72.2	85.7	5.00
I42 – Orbital index dx.	1	92.1	92.1	92.1	0	8	82.6	72.5	97.2	7.43
I42 – Orbital index sin.	2	80.0	78.6	81.4	1.4	5	78.9	75.0	84.2	3.12
I48 – Nasal index	3	47.5	43.4	50.0	2.90	5	52.3	47.1	60.0	4.28
I54 – Maxilloalveolar index	5	121.1	113.5	132.7	7.17	7	123.2	112.1	138.6	8.11
I58 – Palatal index	3	82.0	72.7	88.2	6.70	5	78.3	69.9	83.7	4.85
I60 – Alveolar index	2	87.3	81.9	92.7	5.4	5	92.9	85.1	97.0	4.37
I62 – Length-breadth mandibular index	8	65.1	61.2	78.4	5.69	12	66.8	59.2	90.9	8.20
Cross-section index of humeral shaft	16	83.7	72.7	90.2	5.47	22	79.3	71.4	91.2	5.20
Length-breadth femoral index	10	20.8	19.4	21.7	0.64	11	20.1	18.5	21.0	0.71
Pilastric index	16	112.6	93.0	132.0	9.88	23	106.5	88.5	131.9	8.27
Platymetric index	15	79.3	69.0	89.1	6.57	21	75.5	66.7	84.2	4.09
Cnemic index	15	64.0	53.2	71.6	4.57	20	67.7	60.3	77.8	4.99
Stature	16	165.0	154.4	175.2	5.45	19	155.2	144.0	168.4	5.60

In postcranial skeleton, the analysis focused on the indexes of the long bones that enable to characterize the population. The average value of the humeral shaft cross-section index ranks both males and females in the category of eurybrach. Both males and females had femur moderately robust and platymeric, males with moderate pilaster and females with weak pilaster.

Stature could be estimated in 16 males and 19 females. On average males reached 165.0 cm, females 155.2 cm, the stature of both sexes was medium high.

### Physical activity

Poor preservation of skeletons from Nitra often limited the evaluation of physical load manifestations on bones. Besides robusticity of skeletons and distinct relief, there were found pronounced enthesopathies (musculoskeletal stress markers) in right humeri (attachment site of *m. pectoralis major*) (26/65, 34/65, 69/65) (Figure 64), in calcanei (*tuber calcanei*) (8/64, 19/64) and in pattellae (19/65) (Figure 65) of five males. The long-term working activity is indicated by longitudinal lips on finger phalanges (Figure 66) in the hands of 9 males (64.3 % of males with sufficiently preserved phalanges) and in 12 females (60 %). In five males and seven females phalanges were not preserved at all or only in insufficient amount.

Grooves on upper incisors in at least four females (24/65, 33/65, 35/65, 44/65) are a special type of working activity manifestation (Figure 67). This specific tooth wear resulted from a long-term use of teeth as tools.



FIGURE 64. Humeri of an 18–20-year-old male No. 69/65 with enthesopathy (bone depression) in the right humerus.

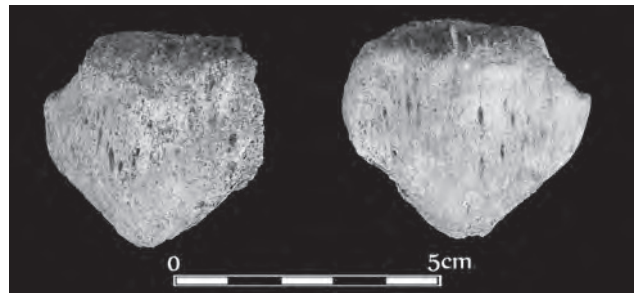


FIGURE 65. Pattellae with distinct enthesopathies in a 35–45-year old male No. 19/65.

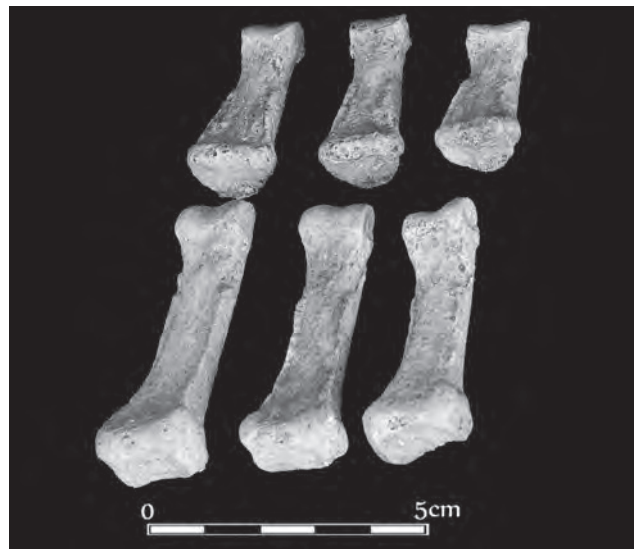


FIGURE 66. Finger phalanges with longitudinal lips in a 40–50-year-old male No. 58/65.

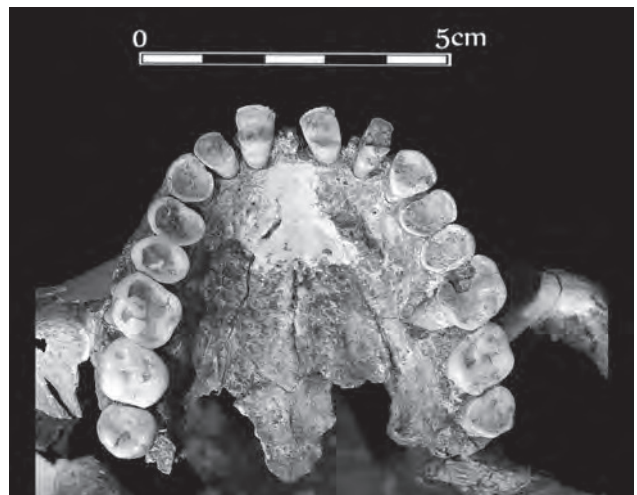


FIGURE 67. Grooves in upper incisors in a 45–55-year old female No. 35/65.

## HEALTH CONDITION

### Dentition

Dental caries is the most common pathology found in dentition. At least one dental caries was found in 28 out of a total of 45 adult individuals with evaluable teeth (62 %). Chronic periapical inflammation occurred in six individuals (8/64, 35/65, 37/65, 52/65, 56/65, 64/65) (Figure 68). An old female from the grave 27/65 had a cyst on the palatal side of right maxilla.

Notable deposit of dental calculus was found in nine individuals.

Among dental anomalies we include variations in the number of teeth, the size and shape of teeth and disorders of eruption. In 20–30-year-old female from the grave 4a/64 the deciduous upper right canine persisted with subsequent retention of a permanent tooth; a similar problem occurred with the lower right canine in male aged 18–20 years from the grave 69/65. In 16–17-year-old individual (5/64) there was retention of the upper right canine when eruption went in mesial and lingual direction (Figure 69); the individual had additional molars in maxilla (hyperdontia). Female (18/65) aged about 30 years had the microdont molar, young female (48/65) had the microdont upper right lateral incisor. Tooth rotation occurred in two individuals; 30-year-old female (57/65) had the rotated upper left first premolar, in mandible there was retention of the left premolar and distinct diastema between the central incisors. In juvenile aged 14–15 years (59/65) there was rotation of the lower canines.



FIGURE 68. Chronic periapical inflammation of the mandible in a 45–55-year-old female No. 52/65.



FIGURE 69. Retention of right maxillary canine and additional molars in a 16–17-year-old individual No. 5/64.

### Degeneratively productive diseases

These include deformative arthrosis and spondylosis. Arthrosis (*osteoarthritis*) manifests itself with deformations of joints, dense smooth substance resembling ivory (eburnation) on articular surface (Figure 70) or with osteophytes in perimeter of joints; *osteoarthritis* occurred in four individuals from Nitra (6/64, 17/65, 44/65, 61/65). Deformative spondylosis was diagnosed in nine individuals based on osteophytes (*spondylophytes*) (4/64, 8/64, 19/65, 21/65, 25/65, 27/65, 36/65, 39/65, 58/65) and round depressions on terminal surfaces of vertebral bodies, so-called Schmorl's nodes (4a/64, 8/64).

### Traumas

Peri-mortem cranial trauma was recorded on five individuals from Nitra (1 male, 1 female, 3 juveniles). Female (1/64) aged 20–24 years has diagonal rupture on the right parietal heading towards *angulus occipitalis*, smaller ruptures head radially. In 20–30-year-old male (72/65) there is a semi-circular opening with diameter of 40 mm on the right temporal squama



FIGURE 70. Eburnation of trochlea humeri of right humerus in a 50–60-year-old female No. 6/64.

(Figure 71). On the left parietal bone of 8–9-year-old child from the grave 68/65 there is an opening of irregular shape, part of which has a semi-circular shape and sloping edge. This could be a trauma, but the skull is unfortunately considerably damaged for reliable diagnosis. In the tripple-grave 48–49–50/65 there were buried a young female and two children aged 4–5 years with trauma on the skull (Figure 3). Child 49/65 has a crescent-shaped opening with diameter of about 45 mm on the right part of the occipital bone in the area of *linea nuchae suprema* (Figure 72). In child 50/65 there is a semi-circular trauma with diameter of 18 mm on the right parietal, fragmentariness of the skull prevents complete reconstruction of the shape (Figure 73).

Traumas were found on postcranial skeleton of four individuals. Female 15b/65 has a bump with probably traumatic cause on the medial side of the left femur. In 40–55-year-old female (44/65) there is a healed fracture on the distal end of the left radius (Figure 74). Elderly female (61/65) had *os acromiale* on the left shoulder blade. This condition occurs by non-fussion

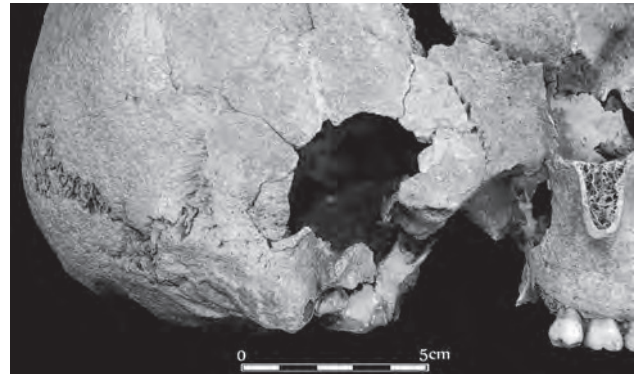


FIGURE 71. Peri-mortem trauma in right temporal in a 20–30-year-old-male No. 72/65.

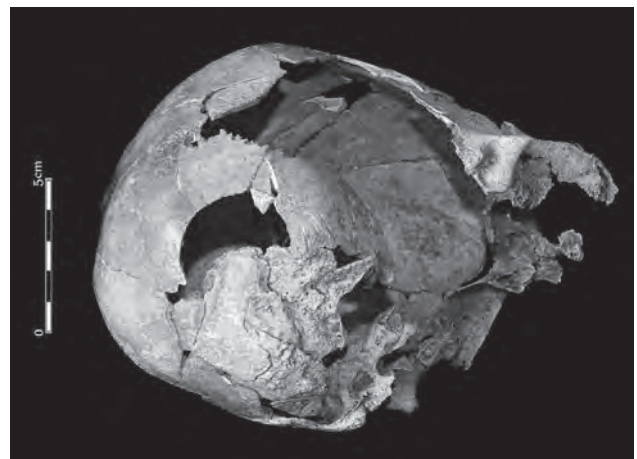


FIGURE 72. Peri-mortem trauma in occipital in a 4–5-year-old child No. 49/65.

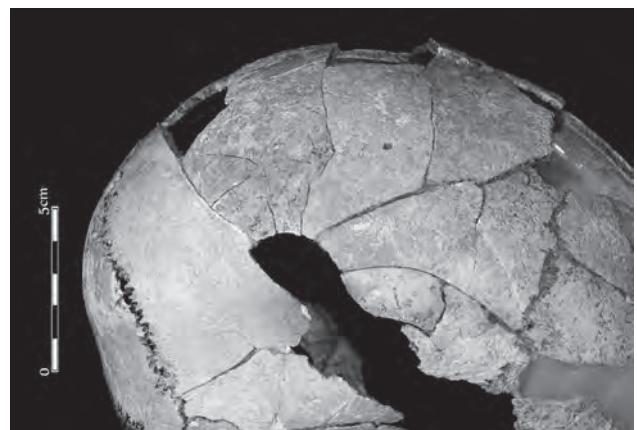


FIGURE 73. Peri-mortem trauma in right parietal in a 4–5-year-old child No. 50/65.

of the acromion process due to congenital causes or heavy work-load of the shoulder. Similarly, congenital or working-activity factors caused spondylolysis, a vertebral arch fracture, which occurred in fifth lumbar vertebra of about 40 year-old male (26/65).

### Inflammations

On skeletal material we can find non-specific inflammations which affect bone marrow (*osteomyelitis*), periosteum (*periostitis*) or bone (*ostitis*). Male aged 50–60 years (21/65) has inflammatory alterations of surface of distal parts of fibulae; both tibiae and fibulae were affected in old females 22/65 and 27/65 and in 7-year-old child (54/65). Child aged 5–6 years (71/65) has periostitic alterations on numerous long bones and 3-year-old child has affected dorsal parts of femurs. The case of *osteomyelitis* occurred in 45–55 year-old female (52/65), which has extensive inflammatory alterations in the distal part of the right fibula and of the tibia to a lesser extent (Figure 75). A young female (53/65) had an inflammatory process in the left elbow (Figure 76),

it was probably a chronic process that limited the functionality of the upper left extremity because there was found an asymmetry in the clavicles as the right clavicle has significantly larger acromial end than the left one.

On the endocranial surface of the occipital and parietals of six-month-old infants (55/65) there are inflammatory alterations probably caused by rickets (vitamin D deficiency) that can be diagnosed based on the bowing deformity of the left ulna.

In 35–40-year-old male (34/65) the collapse of the bodies of two thoracic vertebrae (Figure 77) and the inflammatory alterations on the ribs occurred (Figure 78). These symptoms indicate active tuberculosis.

### *Cribra orbitalia* and porotic hyperostosis

Nutritional stress and anemia or bloodstream disorders are manifested by porosity in orbital roof (*cribra orbitalia*) and in parietal and occipital region of the skull (porotic hyperostosis). *Cribra orbitalia* (Figure 79) were found in 13 individuals from Nitra, including

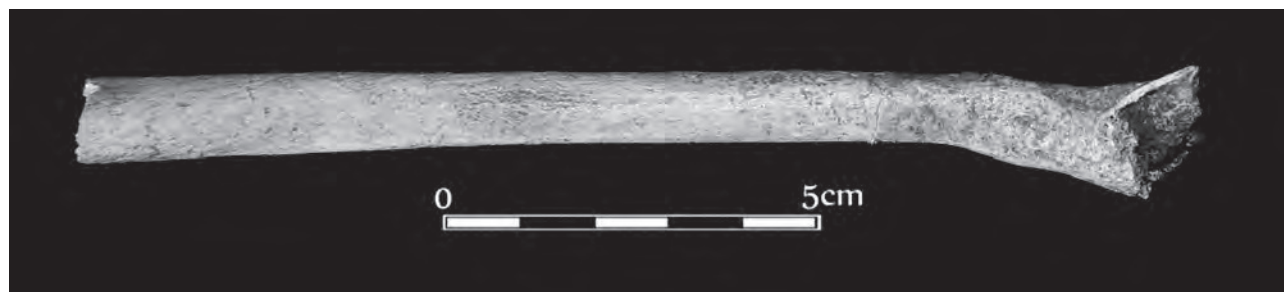


FIGURE 74. Distal part of left radius with healed fracture in a 40–55-year-old female No. 44/65.

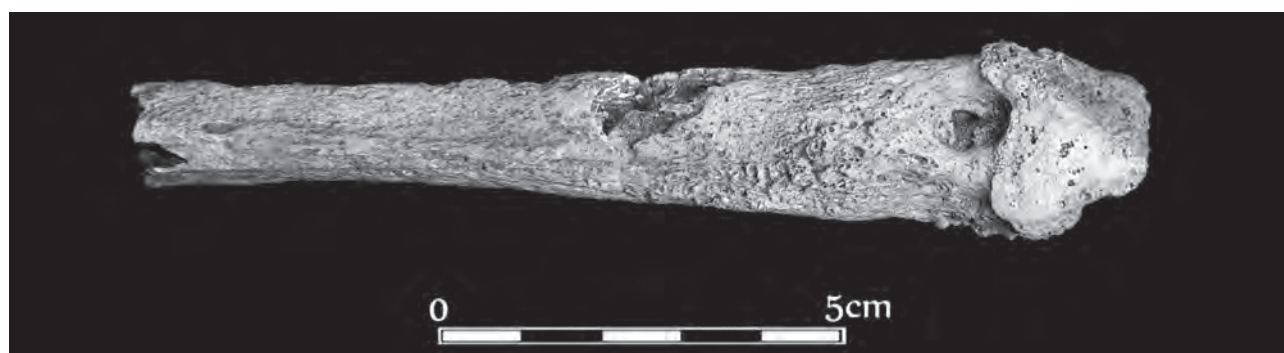


FIGURE 75. Distal part of right fibula with inflammatory alteration (osteomyelitis) in a 45–55-year-old female No. 52/65.



FIGURE 76. Elbows of a 24–30-year old female No. 53/65 with inflammatory alterations in right humerus and ulna (lower).

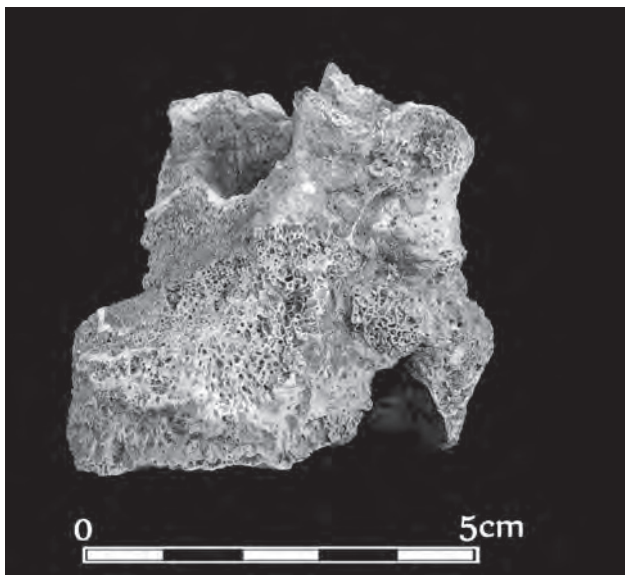


FIGURE 77. Thoracic vertebrae with collapsed bodies in a 35–40-year-old male No. 34/65.

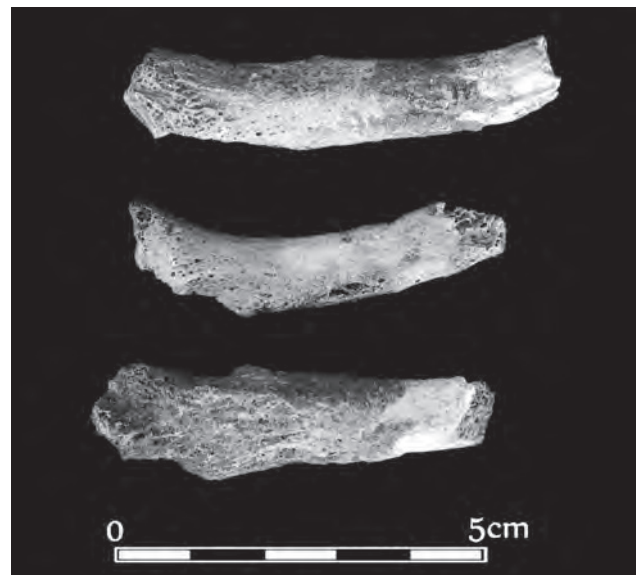


FIGURE 78. Ribs affected by tuberculosis in a 35–40-year-old male No. 34/65.

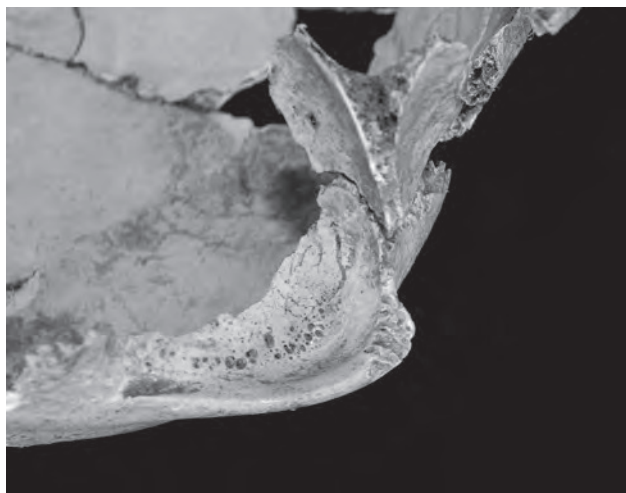


FIGURE 79. Right orbita with cribra orbitalia in a 10-year-old child No. 29/65.

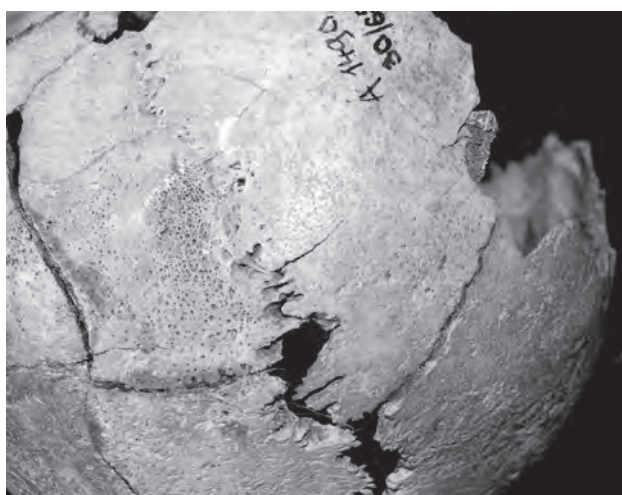


FIGURE 80. Parietals with porotic hyperostosis in a 6-7-year-old child No. 30/65.

6 children (5/64, 29/65, 31/65, 50/65, 59/65, 74/65) and 7 females (9/64, 18/65, 20/65, 27/65, 33/65, 37/65, 57/65). Porotic hyperostosis (Figure 80) occurred in 11 individuals including 4 males (17/65, 26/65, 56/65, 69/65), 3 females (6/64, 9/64, 32/65) and 3 juveniles (3/64, 13a, b/64, 30/65).

#### Harris lines

These are horizontal lines which are apparent on radiographs of tibiae (Figure 81) and are caused by growth retardation due to stress periods. X-ray images



FIGURE 81. Radiograph of tibiae with Harris lines in an 18-20-year-old female No. 32/65 (Photo: St. Anne's University Hospital in Brno).

of tibiae of 39 individuals have been taken. Harris lines were found in 20 individuals, including 10 males (2/64, 4/64, 21/65, 25/65, 26/65, 34/65, 56/65, 62/65, 69/65, 72/65, 9 females (22/65, 24/65, 32/65, 35/65, 36/65, 48/65, 53/65, 66/65, 70/65) and one child (38/65).

#### DISCUSSION

Nitra cemetery was not excavated completely, yet it is the largest cemetery of Linear Pottery Culture in

Slovakia and with the 77 individuals belongs among the largest Neolithic cemeteries in Central Europe. In comparison with analysis of Jelínek presented in Pavúk (1972) we differ in the evaluation of sex and age of some individuals. It is understandable, since there were used different methods and evaluation of some poorly preserved skeletons without determinative features tends to be subjective. The sex was evaluated differently in 11 individuals (9/64, 14/64, 27/65, 35/65, 36/65, 39/65, 41/65, 59/65, 64/65, 75/65, 76/65). The evaluation of age of adults is even more subjective, but we differ from Jelínek by 10 years at most in seven individuals. Compared with analysis performed by L. Fibiger (Whittle *et al.* 2013) we differ in evaluation of sex only in two poorly preserved individuals (9/64, 76/65) since we used similar evaluation methods.

The entire population was not probably buried in Nitra cemetery and in addition to incompleteness of the archeological excavation it limits possibilities of detailed demographic analysis. Nevertheless, we can draw some interesting conclusions from the demographic structure of the cemetery (*Table 1, Figures 61–63*). The number of juveniles (36 %) is lower than expected in prehistoric population, the difference can be explained by the combination of taphonomical factors and burial rite. Juvenile skeletons are more gracile and more subject to decomposition, children graves are also sometimes shallower and there is a higher possibility of their destruction in later periods. Deceased non-adults could be treated with different burial rite than adult part of the population, specific treatment is indicated by high number of children among individuals buried in Neolithic settlements in Slovakia (Farkaš 2002, 37) and in Moravia (Dočkalová, Čížmář 2007, 2008). Similar trend occurred in Vedrovice cemetery, where children represented 30 % of individuals (Dočkalová 2008, 305).

Low number of adult males (39 %) versus females (55 %) expressed by the value 741 of sex ratio was probably caused by the migration process which took place during the spreading of agricultural way of life when local groups of hunters and gatherers blended with new-coming farmers (Galeta *et al.* 2011; Lillie 2008, 145). Migration theory is supported by the strontium isotope analysis that showed greater variance and therefore non-local origin of some Nitra females (Whittle *et al.* 2013, 152). Females more often died at younger age, which is usually explained as a result of complications related to pregnancy and childbirth.

Distribution of mortality by age shows peaks in the age category of 4–6 years in children and 35–50 years (respectively 30–39 years) in adults.

Cranial index of males and females from Nitra was on average dolichocranic (*Table 2*) and even though there was not a sufficient number for thorough statistical comparison, we can say that skull dimensions were not much different from similarly dated cemetery in Vedrovice (Dočkalová 2008, 306). The average stature in males was 165.0 cm and in females 155.2 cm; here as well the result is comparable with population of Vedrovice where males reached on average 165.7 cm and females 154.7 cm (Dočkalová 2008, 307). Platymeric index expresses flattening in the upper third of femur diaphysis (the greater flattening the lower index value). This flattening is associated with the increased physical load of lower limbs (Larsen 1997, 221) and platymeric values in the Nitra population indicate long-term physical activity.

Among the manifestations of a long-term everyday working activity on the skeleton belong also distinct muscle topography, musculoskeletal stress markers (enthesopathy) and alterations in the spine. These displays are affected by the type of the long-time physical activity, by the sex and age. With age, the alterations are more pronounced (Hawkey, Merbs, 1995, 324). The transition to an agricultural way of life resulted in different working activity displayed by occupational stress alterations in bones (Dočkalová 2008, Eshed *et al.* 2004). Longitudinal bone lips on the sides of hand phalanges in more than 60 % of adult individuals from Nitra indicate everyday using of hands for heavy work (*Figure 66*). Distinct enthesopathies occurred mainly in right humeri at the attachment sites of *m. pectoralis major* (*Figure 64*) and in calcanei (*tuber calcanei*). Tooth wear in form of grooves (*Figure 67*) that was found on the front teeth in four females, is associated with the use of teeth as a working tool in the processing of fibres (Frayer 2004, 96). Tooth marks of a rodent were noted on right humerus (5/64), left femur (17/65) and in the area of foramen magnum (26/65) suggesting possible postdepositional disturbance of burials as part of taphonomic process.

Evaluation of the health condition of Nitra population has been limited by the state of preservation of the skeletons. Dental carries was found in 62 % of adult individuals, carries prevalence is discussed in detail by Frayer (2004) and Fibiger (Whittle *et al.* 2013, 144). Crubézy *et al.* (2002, 584) described the frequency of *osteoarthritis* and degenerative enthesopathies and presented that *osteoarthritis*

occurred at most in shoulders, followed by hand, hip, wrist and elbow. Occurrence of *cribra orbitalia* in 13 individuals and porotic hyperostosis in 11 individuals suggests some form of nutritional stress and anemia, more often in juveniles and females (Ash *et al.* 2016, 4). Harris lines on the tibias of 20 individuals are an indication of stressful periods during growth.

Traumas on skulls of five individuals are evidence of violence in the Neolithic. In the triple-burial 48–49–50/65 there was found 20–24-year-old female and two children aged 4–5 years both of them with peri-mortem cranial trauma. The young female was very gracile and with estimated stature of 144.0 cm she was the smallest individual found in Nitra cemetery. We can only speculate whether they were victims of inter- or intra-population violence or ritual behavior.

## CONCLUSIONS

For anthropological analysis we had at our disposal skeletal remains of 77 individuals excavated in 1964–1965 in Nitra-Horné Krškany and dated to the Neolithic Linear Pottery culture in the period of transition to an agricultural way of life. The material comprised of 28 juveniles, 19 males, 27 females and 3 undeterminable adult individuals. The predominance of females in the cemetery is probably caused by the migration and blending with the local indigenous population. The relatively low number of small children in Nitra is not unusual in LBK cemeteries and is probably caused by a combination of taphonomical factors and burial rite. Females died more often in younger age to 35 years, in later age the mortality is higher in males.

Metric analysis characterizes both males and females from Nitra as dolichocranic with platymer femurs. Stature of adults was medium high, males reached on average 165.0 cm and females 155.2 cm. The metrics of Nitra population was not very different from the slightly older cemetery in Vedrovice (Czech Republic).

On the bones there were found displays of physical load such as a distinct muscle topography and enthesopathies. Bone lipping on finger phalanges indicates a long-term working activity. Occlusal grooves on the front teeth of four individuals are evidence of the use of teeth as tools.

The health condition of the Nitra population was affected by occurrence of dental carries, degenerative productive diseases and inflammations. Remarkable are possible displays of tuberculosis in 35–40-year-old

male from burial 34/65. Occurrence of the manifestations of nutritional stress and anemia like *cribra orbitalia* and porotic hyperostosis indicate stressful periods in the life of the first farmers. Traumas on the skulls of five individuals are evidence of violence in the Neolithic.

## ACKNOWLEDGEMENTS

This paper was financially supported by the Ministry of Culture of the Czech Republic by institutional financing of long-term conceptual development of the research institution (the Moravian Museum, MK000094862).

## REFERENCES

- ACSÁDI G., NEMESKÉRI J., 1970: *History of human life span and mortality*. Akadémiai Kiadó, Budapest.
- ASH A., FRANCKEN M., PAP I., TVRDÝ Z., WAHL J., PINHASI R., 2016: Regional differences in health, diet and weaning patterns amongst the first Neolithic farmers of central Europe. *Science Report* 6, 29458; doi: 10.1038/srep29458.
- BICKLE P., BENTLEY A. R., DOČKALOVÁ M., FIBIGER L., GRIFFITHS S., HAMILTON J., HEDGES R., HOFMANN D., MATEICIUCOVÁ I., WHITTLE A., 2013: Early Neolithic lifeways in Moravia and Western Slovakia: Comparing archaeological, osteological and isotopic data from cemetery and settlement burials of the linearbandkeramik (LBK). *Anthropologie* 52, 1: 35–72.
- BRÄUER G., 1988: Osteometrie. In: R. Knussmann (Ed.): *Anthropologie. Handbuch der vergleichenden Biologie des Menschen. Band I: Wesen und Methoden der Anthropologie*. 1. Teil. Pp. 160–232. Gustav Fischer Verlag, Stuttgart – New York.
- BRUZEK J., 2002: A Method for Visual Determination of Sex, Using the Human Hip Bone. *American Journal of Physical Anthropology* 117: 157–168.
- CRUBÉZY E., GOULET J., BRUZEK J., JELINEK J., ROUGÉ D., LUDES B., 2002: Epidemiology of osteoarthritis and enthesopathies in a European population dating back 7700 years. *Joint Bone Spine* 69: 580–588.
- CRUBÉZY E., MURAIL P., BRUZEK J., JELINEK J., ONDRUS V., PAVUK J., TESCHLER-NICOLA M., 1995: Sample characterization of danubian cemeteries in central Europe: the examples of Vedrovice (Moravia) and Nitra-Horne Krškany (Slovakia). In: C. Jeunesse (Ed.): *Le Néolithique danubien et ses marges entre Rhin et Seine*. Pp. 9–15. Actes du 22ème colloque sur le Néolithique, Strasbourg 27–29 Octobre 1995. Supplément aux Cahiers de l'Association pour la Promotion de la Recherche Archéologique en Alsace.

- ČERNÝ M., KOMENDA S., 1980: Sexual diagnosis by the measurements of humerus and femur. *Sborník prací pedagogické fakulty Univerzity Palackého v Olomouci Biologie* 2: 147–167.
- DOČKALOVÁ M., 2008: Anthropology of the Neolithic population from Vedrovice (Czech republic). *Anthropologie* 46, 2–3: 239–315.
- DOČKALOVÁ M., ČIŽMÁŘ Z., 2007: Neolithic children burials at Moravian settlements in the Czech Republic. *Anthropologie* 45, 1: 31–59.
- DOČKALOVÁ M., ČIŽMÁŘ Z., 2008: Neolithic settlement burials of adult and juvenile individuals in Moravia, Czech Republic. *Anthropologie* 46, 1: 29–68.
- ESHED V., GOPHER A., GALILI E., HERSHKOVITZ I., 2004: Musculoskeletal Stress Markers in Natufian Hunter-Gatherers and Neolithic Farmers in the Levant: The Upper Limb. *American Journal of Physical Anthropology* 123: 303–315.
- FARKAŠ Z., 2002: Nálezy lidských pozůstatků v prostředí kultury řadu s lineární keramikou na Slovensku. *Archeologické rozhledy* 54,1: 23–43.
- FEREMBACH D., SCHWIDETZKY I., STLOUKAL M., 1980: Recommendations for age and sex diagnoses of skeletons. *Journal of Human Evolution* 9: 459–517.
- FRAYER D. W., 2004: The dental remains from Krškany (Slovakia) and Vedrovice (Czech Republic). *Anthropologie* 42,1: 71–103.
- GALETA P., SLÁDEK V., SOSNA D., BRUZEK J., 2011: Modeling neolithic dispersal in Central Europe: Demographic implications. *American Journal of Physical Anthropology* 146-1: 104–115.
- GRIFFITHS S., 2013: B1 Radiocarbon dates from Nitra, Schwetzingen and Vedrovice. In: P. Bickle, A. Whittle (Eds.): *The first farmers of central Europe: diversity in LBK lifeways*, Pp. 443–458. Oxbow, Oxford.
- HAWKEY D., MERBS C. F., 1995: Activity-induced Musculoskeletal Stress Markers (MSM) and Subsistence Strategy Changes among Ancient Hudson Bay Eskimos. *International Journal of Osteoarcheology* 5: 324–338.
- HORÁČKOVÁ L., STROUHAL E., VARGOVÁ L., 2003: Základy paleopatologie. In: J. Malina (Ed.): *Panoráma biologické a sociokulturní antropologie: Modulové učební texty pro studenty antropologie a "příbuzných" oborů*. Sv. 15. Masarykova univerzita, Brno.
- LARSEN C. S., 1997: *Bioarchaeology. Interpreting behavior from the human skeleton*. Cambridge University Press, Cambridge.
- LILLIE M., 2008: Vedrovice: Demography and palaeopathology in an early farming population. *Anthropologie* 46, 2–3: 135–152.
- LOVEJOY C. O., 1985: Dental Wear in the Libben Population: Its Pattern and Role in the Determination of Adult Skeletal Age at Death. *American Journal of Physical Anthropology* 68, 1: 47–56.
- MCKERN T. W., STEWART T. D., 1957: *Skeletal Age Changes in Young American Males*. Quartermaster Research and Development Center, US Army, Technical Report EP-45, Natick.
- MEINDL R. S., LOVEJOY C. O., MENSFORTH R. P., WALKER R. A., 1985: A Revised Method of Age Determination Using the Os Pubis, with a Review and Tests of Accuracy of Other Current Methods of Pubic Symphyseal Aging. *American Journal of Physical Anthropology* 68: 29–45.
- NOVOTNÝ V., 1985: Determination of sex from talus and calcaneus. *Scripta Medica Brno* 58: 437.
- NOVOTNÝ V., 1986: Sex Determination of the Pelvis Bone: A Systems Approach. *Anthropologie* 24, 2–3: 197–206.
- ORTNER D. J., 2003: *Identification of Pathological Conditions in Human Skeletal Remains*. Academic Press, San Diego.
- PAVÚK J., 1972: Neolithisches Gräberfeld in Nitra. *Slovenská archeológia* 20: 5–105.
- SCHAEFER M., BLACK S., SCHEUER L., 2009: *Juvenile Osteology: A Laboratory and Field Manual*. Elsevier, Oxford.
- SJØVOLD T., 1990: Estimation of stature from long bones utilizing the line of organic correlation. *Human Evolution* 5: 431–447.
- STLOUKAL M., HANÁKOVÁ H., 1978: Die Länge der Längsknochen altslawischer Bevölkerungen unter Berücksichtigung von Wachstumsfragen. *Homo* 29, 1: 53–69.
- UBELAKER D. H., 1978: *Human Skeletal Remains. Excavation, analysis, interpretation*. Aldine Publishing Company, Chicago.
- VLČEK E., 1994: Metodika určování zubního věku podle stupně mineralizace chrupu v historické antropologii a paleoantropologii. *Stomatologické zprávy* 35/3, 30–39.
- WHITTLE A., BENTLEY R. A., BICKLE P., DOČKALOVÁ M., FIBIGER L., HAMILTON J., HEDGES R. E. M., MATEICIUCOVÁ I., PAVÚK J., 2013: Moravia and Western Slovakia. In: P. Bickle, A. Whittle (Eds.): *The first farmers of central Europe: diversity in LBK lifeways*. Pp. 101–158. Oxbow, Oxford.

Zdeněk Tvrdý  
Moravian Museum  
Historical Museum  
Anthropos Institute  
Zelný trh 6  
659 37 Brno  
Czech Republic  
E-mail: ztvrdy@mzm.cz

Appendix. Nitra-Horné Krškany: List of individuals. B. No. for burial number; INV. for Inventory number; Age is in years; PR. for Preservation (S – skull, P – postcranial skeleton); ST, for Stature in centimeters. PAI for periapical inflammation, Teeth (U upper, L lower, R right, L left, I incisor, C canine, P premolar, M molar).

B.No	INV.	SEX	AGE	PR	ST	PATHOLOGY	FINDING
1/64	1463	F	20-24	S+, P+	154.4	caries (2), trauma (perimortem, parietal)	
2/64	1465	M	40-50	S++, P++	168.0	Harris lines	asymetric abrasion, calculus, lipping
3/64	1464	M?	16-17	S+, P+		porotic hyperostosis	
4/64	1466	M	30-40	S+, P++	168.6	osteophytes, possible cyst (os sacrum), Harris lines	
4/64a	1467	F	20-30	S++, P++		caries (4), intravital loss (2), retention (C), Schmorl's node	asymetric abrasion, calculus, lipping
5/64	1468	J	16-17	S++, P++		retention (C), additional molars, cribra orbitalia	toothmarks (humerus dx.)
6/64	1469	F	50-60	S+, P++	152.4	caries (3), intravital loss (3), porotic hyperostosis, arthritis	
7/64	1470	M?	40-45?	S+, P+		caries (1)	
8/64	1471	M	40-55	S++, P++	161.3	caries (1), PAI, Schmorl's node and osteophytes	asymetric abrasion and calculus, muscle topography, enthesopathy (calcanei), lipping
9/64	1472	F	35-40	S++, P++		caries (1), cribra orbitalia, porotic hyperostosis	calculus
13/64a	1473	J	6	S++, P++		porotic hyperostosis	
13/64b	1473	J	8	S++, L0		porotic hyperostosis	
13/67c	1473	J	0-0.5	S+, P+			
14/64	1474	F	24-30	S+, P+	154.5		
15a/65	1475	J	1	S+, P+			
15b/65	1475	F?	adult	L0, P++	150.3	trauma (femur sin.)	
16/65	1476	?	30?	S+, P0			
17/65	1478	M	50+	S++, P++	157.5	caries (2), intravital loss (4), porotic hyperostosis, arthritis	lipping, toothmarks (femur sin.)
18/65	1477	F?	25-35	S++, P++		caries (1), cribra orbitalia, microdont (1)	
19/65	1479	M	35-45	S++, P++	166.7	caries (1), osteophytes	asymetric abrasion, enthesopathies (patellae, calcanei)
20/65	1480	F	24-30	S++, P++	157.0	cribra orbitalia	lipping
21/65	1482	M?	50-60	S++, P++	166.6	caries (2), intravital loss (6), inflammation (fibulae), osteophytes, Harris lines	lipping
22/65	1483	F	45-55	S++, P++	157.5	caries (1), intravital loss (5), inflammation (tibiae and fibulae), Harris lines	lipping
23/65	1481	J	11-12	S++, P++			
24/65	1484	F	35-40	S+++, P++	152.6	intravital loss (1), inflammation (femur dx.), Harris lines	grooves, calculus, lipping
25/65	1485	M	50+	S++, P++	172.3	caries (1), intravital loss (16), osteophytes, Harris lines	
26/65	1486	M	35-45	S++(+), P++(+)	154.4	porotic hyperostosis, spondylolysis (L5), Harris lines	lipping, enthesopathy (humerus dx.), toothmarks (foramen magnum)
27/65	1487	F	50+	S++, P++	168.4	caries (2), intravital loss (5), cyst (maxilla), osteophytes, cribra orbitalia, inflammation (tibiae and fibulae)	lipping
28/65	1488	J	0.5	S++, P++(+)			

Appendix. Continued.

B.No	INV.	SEX	AGE	PR	ST	PATHOLOGY	FINDING
29/65	1489	J	10	S++, P+(+)		cribra orbitalia	
30/65	1490	J	6-7	S++, P+(+)		porotic hyperostosis	
31/65	1491	J	3	S+(+), P+		cribra orbitalia	
32/65	1492	F	18-20	S++, P++	160.8	porotic hyperostosis, Harris lines	
33/65	1493	F?	24-35	S++(+), P++(+)	161.7	cribra orbitalia	grooves
34/65	1494	M	35-40	S+++, P++	165.4	porotic hyperostosis, inflammation – possible TBC (Th vertebrae, ribs), Harris lines	enthesopathy (humerus dx.)
35/65	1495	F	45-55	S++, P++	151.1	caries (1), PAI, Harris lines	grooves, calculus, lipping
36/65	1498	F	50+	S++, P++	161.3	caries (2), osteophyte, possible osteom (rib), Harris lines	lipping
37/65	1499	F	24-30	S++(+), P+(+)		caries (4), PAI, cribra orbitalia	
38/65	1501	F	6-7	S++, P++		Harris lines	
39/65	1503	F?	40-50	S++, P+(+)		osteophytes	lipping
40/65	1504	J	4	S+, P+			
41/65	1506	J	13-14?	S+, P++			
42/65	1507	J	6-7	S+, P(+)			
43/65	22865	?	adult	L0, P+(+)			
44/65	1508	F?	40-55	S++(+), P++		caries (3), intravital loss (3), arthritis, fracture (perimortem, radius sin.)	grooves
45/65	1509	M?	40-49	S+, P+		caries (5)	
46/65	1510	?	adult	L0, P+(+)			
47/65	1511	J	1.5	S+, P+(+)			
48/65	1512	F	20-24	S+++, P++	144.0	caries (1), microdont (URI2), Harris lines	asymetric abrasion, lipping
49/65	1513	J	4-5	S++, P++		trauma (perimortem, occipital)	
50/65	1514	J	4-5	S++, P+(+)		trauma (perimortem, parietal), cribra orbitalia	
52/65	1515	F	45-55	S+(+), P+		caries (2) PAI, inflammation (possible osteomyelitis – tibia and fibula dx.)	calculus, lipping
53/65	1516	F	24-30	S++, P++	156.8	inflammation (left elbow), Harris lines	asymetric clavicles
54/65	1517	J	7	S++(+), P++		inflammation (tibiae and fibulae)	
55/65	1518	J	0-0.5	S+, P++		possible rickets (skull, ulna sin.)	
56/65	1519	M	50	S++, P++	168.1	caries (4), PAI, porotic hyperostosis, inflammation (fibulae), Harris lines	lipping

## Appendix. Continued.

B.No	INV.	SEX	AGE	PR	ST	PATHOLOGY	FINDING
57/65	1520	F	20-30	S++, P++	147.4 cm	caries (1), rotation (ULP1), possible retention (LLP), cribra orbitalia	
58/65	1521	M	40-50	S++, P++	175.2	osteophytes	lipping
59/65	1522	J	14-15	S++, P++		cribra orbitalia, rotation (LC)	
60/65	1523	J	1	S+, P+			
61/65	1524	F	45-55	S++, P++	157.6	caries (1) intravital loss (10), os acromiale	lipping
62/65	1525	M?	30-35	S++, P+(+)	164.3	Harris lines	
63/65	1526	M?	35-40	S+, P+			
64/65	1527	F	40-45	S+, P++	158.9	caries (2), PAI	lipping
65/65	1528	F	35-40	S++, P++			lipping
66/65	1529	F	50+	S++, P++	150.2	intravital loss (1), Harris lines	
67/65	1530	J	2	S+(+), P+			
68/65	1531	J	8-9	S+, P0		possible trauma (parietal)	
69/65	1532	M?	18-20	S++, P++(+)	168.4	porotic hyperostosis, retention (LRC), Harris lines	lipping, enthesopathy (humerus dx.)
70/65	1533	F	35-39	S++(+), P++	151.6	caries (4), Harris lines	lipping
71/65	1534	J	5-6	S+(+), P++		inflammation (long bones)	
72/65	1535	M	20-30	S++(+), P++(+)	165.6	trauma (perimortem, temporal), Harris lines	
73/65	1536	J	0,5-1	S+, P+			
74/65	1537	J	3	S++, P++		cribra orbitalia	
75/65	1538	J	16-20	S+, P+			
76/65	1539	M?	40-50	S++, P++	157.9		
77/65	1540	M?	35-45	S+(+), P+(+)	159.0		