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Szólád I

Das langobardenzeitliche Gräberfeld: Mensch und Umwelt

HERAUSGEGEBEN VON

TIVADAR VIDA UND DANIEL WINGER

MIT BEITRÄGEN VON

KURT W. ALT, LÁSZLÓ BARTOSIEWICZ, UTA VON FREEDEN, ERIKA GÁL,
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DANIEL WINGER

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A horse skeleton from the Langobard period cemetery of Szólád: An archaeozoological study

By Kyra Lyublyanovics

INTRODUCTION

The Langobard period cemetery of Szólád–Kertek mögött (Szólád–Back Garden Lane; Somogy County, Hungary) was excavated in the years 2003, 2005–2007, and 2010. Grave 13 (feature no. 106) yielded an almost complete horse skeleton, discovered *in situ*, in anatomical order. The horse was placed on planks on the east side of the grave. Associated with it was an adult man buried in a wooden coffin; this human burial was heavily disturbed and probably robbed[1]. The horse grave was also not completely intact: the skull of the animal is missing, but this is most likely due to burrowing animals rather than human activities. The excavations were conducted jointly by the Archaeological Institute of the Hungarian Academy of Sciences and the Romano-Germanic Commission of the German Archaeological Institute.

This paper discusses the horse skeleton brought to light from Grave 13, and also provides an overview of horse burials associated with the Langobard period in the Carpathian Basin. Even though Langobards have a long research history in Hungary, archaeozoological data associated with them is scarce. Reports are only available about a few of the excavated animal burials, moreover, horse bones from older excavations were sometimes discarded right away, lost, or not documented at all. For the present paper, three burials were studied in addition to the Szólád horse: one horse skeleton from Szentendre–Pannóniatelep, and two individuals from Kajdacs–Homokbánya (Sand Quarry). These have not yet been studied and published in detail[2].

The analysis discussed in this paper is limited to macroscopic and morphological observations and measurements. In the discussion following the list of archaeological sites associated with the Langobard period, site names are used in their short form for the sake of brevity: Szólád–Kertek mögött is referred to as Szólád, Szentendre–Pannóniatelep is referred to as Szentendre etc.

ZOOLOGICAL OBSERVATIONS AND PATHOLOGY

The grave yielded the bones of one 4.5–5-year-old horse. Apart from the missing skull, the skeleton is complete, and the bones were found in anatomical order. The bones are well-preserved, only the phalanges are fragmented. The missing skull, and, therefore, the lack of craniometric measurements cause a loss of valuable information. Since the skull and teeth are lost, the sex of the animal remains uncertain, although the narrow pelvis and the strong *eminentia iliopubica* suggest that it is a stallion. Age estimation was possible based on the stage of epiphyseal fusion of the vertebrae and the still unfused symphysis of the pelvis.

The estimated withers height, calculated from all well-preserved long bones by Kiesewalter's method[3], is 138 cm, while Vitt's method gives a somewhat different result of 135 cm[4]. A third method, created by Bartosiewicz[5] specifically for Avar and Migration Period horses, gives an even smaller estimated withers height of 131.8 cm. As the latter method was designed for horses of this specific archaeological period, this result should be accepted as most precise. The slenderness index of the metacarpals is 15.8, suggesting that the animal was small, with relatively short and massive legs.

Most of the bones were intact, without pathological lesions. The medial and lateral splints were fused with the metacarpals, which is a relatively common, albeit patho-

1 von Freeden / Vida 2007. – Belényesy et al. 2006.

2 Hereby I would like to thank my colleagues Annamária Bárány and István Vörös for their help with locating the remains in the Hungarian National Museum's collection and granting access to them.

3 Kiesewalter 1988.

4 Vitt 1952.

5 Bartosiewicz 1991.

Fig. 1. Bone growth on the proximal end of the metatarsals.

Fig. 2. The 8th thoracic vertebra of the Szólád individual, with a bent spinal process. A similar phenomenon was observed on the ninth thoracic vertebra.

Fig. 3. The fused last thoracic and first lumbar vertebra of the Szólád horse.

logical phenomenon[6]. Signs of inflammation were present on the caudal surface of the tibiae, as well as on the proximal end of both metatarsal bones *(fig. 1)*, signifying an inflammation in both hock joints. The tarsal bones showed no signs of pathologies.

Several pathological phenomena were observed on the spine. Most of the thoracic vertebrae are asymmetrical, and a build-up of extraneous bone tissue is evident on all muscle attachment surfaces. Asymmetry is especially conspicuous on the spinal processes: some of them bend to one side *(fig. 2)*. The last thoracic and the first lumbar vertebra were fused at the articular processes *(fig. 3)*. Approximately 0.5 cm long, irregular bone growths ("spikes") were observed between the spinal processes of the second and third, as well as between the third and fourth lumbar vertebrae, signifying the ossification of ligaments. The articular processes between the third and fourth lumbar vertebrae had started to fuse on the left side. Spinal processes of the second, third and fourth sacral vertebrae were fused almost completely.

The asymmetry of vertebrae signifies that the static equilibrium of the skeleton had changed. Although these spinal abnormalities are not extreme, they must have had a negative effect on the flexibility of the spine, and, thus, on the potential ways of use of the animal. Fusions between lumbar vertebrae were considered a severe problem for mi-

6 This form of pathology has been observed on wild individuals (in zoological gardens), where workload is out of question. Consequently, the association between this phenomenon and the use of horses by humans is not certifiable. See Bartosiewicz 2013. – Bendrey 2007.

Fig. 4. Horse burials associated with the Langobards. All found in Transdanubia, present-day Hungary: 1. Káloz – 2. Kajdacs-Homokbánya – 3. Vörs–Tótok dombja – 4. Veszkény–Nagyhalom – 5. Szentendre–Pannóniatelep – 6. Mosonszentjános–Kavicsbánya – 7. Szólád–Kertek mögött.

litary horses in the late 19th century, as it keeps the animal from turning quickly and in an agile manner[7].

Spinal abnormalities involving the fusion of vertebrae are common in domestic mammals[8], and usually start with bone growth connecting the bodies of the vertebrae. In the Szólád individual, bone tissue build-up was only present on the vertebral processes and not on the body of the vertebra itself (*spondylosis ankylopoetica*). This form of lesion usually affects the last thoracic and the lumbar vertebrae, as this part of the spine is the least flexible region of the back and bears huge static and dynamic pressure[9]. László and Gábor Bartosiewicz investigated 83 pathological individuals and came to the conclusion that such lesions most often occur on the 12th–18th thoracic and the lumbar vertebrae[10]. As is the case with the Szólád horse, other pathologies often accompany vertebral fusion. Interestingly, the Szólád individual was relatively young, although such lesions are more characteristic for older horses.

LANGOBARD PERIOD HORSE GRAVES IN THE REGION: AN OVERVIEW

Langobard period horse graves in the Carpathian Basin

To date, horse burials associated with the Langobards – only nine animals altogether – were discovered at seven archaeological sites in the Carpathian Basin, all in Transdanubia *(fig. 4)*. These have yet to be discussed comprehensively. Most of these sites were discovered in the early or mid-20th century, and given the methodology of the time, the animal bones were often discarded or have since been lost. In most cases, the presence of a horse skeleton is mentioned in the excavation documents or publications, but nothing more is recorded about the animal(s), and the bones are no longer available for study.

The following Langobard period horse burials are known in Transdanubia:

1. Veszkény–Nagyhalom: A mound burial discovered in 1904 yielded two human skeletons along with horse bones. The harness indicated the presence of two animals. The finds were distributed among three museums and different personal collections and have never been published comprehensively. There is no information on the horse bones, as they were probably not collected at all[11]. W. Menghin concluded that the harness belonged to a carriage drawn by two horses; the Langobard grave in Hauskirchen may be cited here as an analogy[12]. Christie interpreted the silver harness parts as evidence for the value placed on horses by the Pannonian Langobard elite[13].
2. Káloz: The finds discovered here in 1927 included a horse buried underneath a double human burial and separated from the human skeletons only by a thin layer of soil. The exact provenance and position of the finds

7 Kovácsy / Monostori 1905.
8 Baker / Brothwell 1980.
9 Bartosiewicz 2013, 114.
10 Bartosiewicz / Bartosiewicz 2002, 824, fig. 5.
11 Bóna 1974, 67; 105; Bóna 1976, 67, 105. – Bóna / Horváth 2009, 206. – Gömöri 1987.
12 Menghin 1985, 64; 66.
13 Christie 1998, 47.

is unknown, but a harness is known to have been found. There is no information on the horse skeleton, as the bones were probably discarded[14].

3. Vörs–Tótok dombja: This Langobard cemetery was excavated in the early 1960s. Grave 5 yielded the complete, undisturbed skeleton of an approximately four-year-old stallion, lying on its left side, deposited with the bridle on its head[15]. It is uncertain, however, who examined the skeleton and from what perspective. The remains of a shield and lancet, a pot with food offerings, and a bone comb were brought to light in the opposite end of the pit. The disturbed skeletons of a man and a woman were found in a double grave under the horse skeleton, which suggests that grave robbers dug underneath the animal. The horse bit recovered from here has analogies from Nocera Umbra and Pilisvörösvár[16]. Káloz may be another analogy, although there, the human was found above the horse. Similar phenomena were observed in the 6th-century horse burial of Neuköln as well. According to Sági, such burial customs were brought here by the Langobards from the Elba region[17]. The current location of the horse bones from Vörs is unknown.
4. Mosonszentjános–Kavicsbánya (Gravel Pit): This horse skeleton is associated with burials of the Langobard nobility found in the Avar cemetery excavated in 1965–1967. In Grave 3 (also known as Grave 14, numbered according to the Avar cemetery's burials) a disturbed horse skeleton, as well as the remains of a harnessed red deer, were discovered. Pusztai interpreted these burials as sacrifices, however, the animals are only briefly mentioned in the publications, and the bones themselves have never been studied[18]. Grave 44 in Basel-Bernerring may be cited as an analogy for the deer burial[19]. The exact provenance and present location of the bones is unknown, and neither drawings nor photos of the animal burials have been published. This means that both the species identification and the interpretation of the deposit must be handled with caution.
5. Kajdacs–Homokbánya: Two separate horse skeletons were unearthed from Graves 8 and 14 of the Langobard period cemetery excavated in the second half of the 1960s. Both animals were found lying on their right side; the graves were robbed and thus both skeletons were disturbed[20]. István Vörös published the calculated withers height of the animals[21]. These two skeletons belong to the Archaeozoological Collection of the Hungarian National Museum.
6. Szentendre–Pannóniatelep: Graves 7 and 47 yielded horse bones. Grave 7, in which a man 25–35 years of age was interred along with the horse, was later robbed. This horse skeleton must have been very fragmented, partly because there was a stratigraphic overlap with Graves 10 and 27. No further information is available on this particular animal. Grave 47 was an individual horse burial which yielded an intact skeleton, now kept in the Archaeozoological Collection of the Hungarian National Museum. No human burial was unambiguously associated with this grave[22]. Although it is not clear which animal he studied, István Vörös published a withers height calculation of one of the two horses from Szentendre, in all probability the one from Grave 47[23].

Horses were often interred together with warriors or members of the nobility. However, animal burials usually involve a separate grave pit, and therefore, it may be difficult to identify the human they are associated with. Horse graves from the Merovingian period usually yield young adult stallions; the same is the case with the Langobard material found in present-day Hungary[24]. The horses are usually found lying on their side in anatomical position; this is characteristic for the era[25].

Horse burials are often discovered already having been robbed. The head region especially tends to be disturbed, because grave robbers target the valuable headgear. This may be the case with the Szólád individual as well, although disturbance other than human-induced is also possible since the presence of burrowing animals was evident at the site. Robbed burials are characteristic for other geographic regions as well. Usually only the animals buried without harness and headgear are left intact (e. g., Szentendre 47, Šakvice 42). Those interred with harnesses are often disturbed (e. g., Lužice 31, Šakvice 3 and 4, Maria Ponsee 72, Aspersdorf 8 and 29, Kajdacs 8 and 14, Záluží 18, Gneixendorf, Rohrendorf 15, Maria Ponsee 9 and 53, Vörs 5, Kranj 6)[26]. Harnesses were sometimes interred

14 Marosi 1931, 6–7. – Bóna 1956, 71–77.
15 Sági 1960, 52–60. – Bóna / Horváth 2009, 206.
16 Sági 1960, 58.
17 Sági 1960, 59.
18 Pusztai 1988, 290. – Pusztai / Tomka 1968, 134.
19 Bóna 1974, 67. – Bóna / Horváth 2009, 205.
20 Bóna 1966, 297. – Bóna / Horváth 2009, 64–65.
21 Vörös 1999, 128.
22 Dinnyés et al. 1986, 281–282. – Bóna / Horváth 2009, 95; 103; 116. – Bóna 1970/71, 45–75; 53–54.
23 Vörös 1999, 128.
24 Oexle 1984, 122–172; 146–147, figs 11–12. – The cemetery of Aspersdorf is an exception: young horses, 3.5 years (Grave 8), and 2 years of age (Grave 29) were brought to light here: Wolff 1977, 77–81. – The Merovingian graves in Frankfurt-Harheim are also exceptional from this point of view: this cemetery yielded old stallions, 20–25 years (Grave 42), 14–17 years (Grave 74), and 15 years of age (Grave 83); von Freeden 2017.
25 Bóna / Horváth 2009, 183.
26 Bóna 1993, 124. – Bóna 2009, 181–184. – Klanica / Klanicová 2011, 243. – Ambros / Müller 1980, 125. – Wolff 1977. – Takács / Bartosiewicz 1993, 597–604. – Müller-Wille 1972. – Adler 1970b. – Adler 1977.

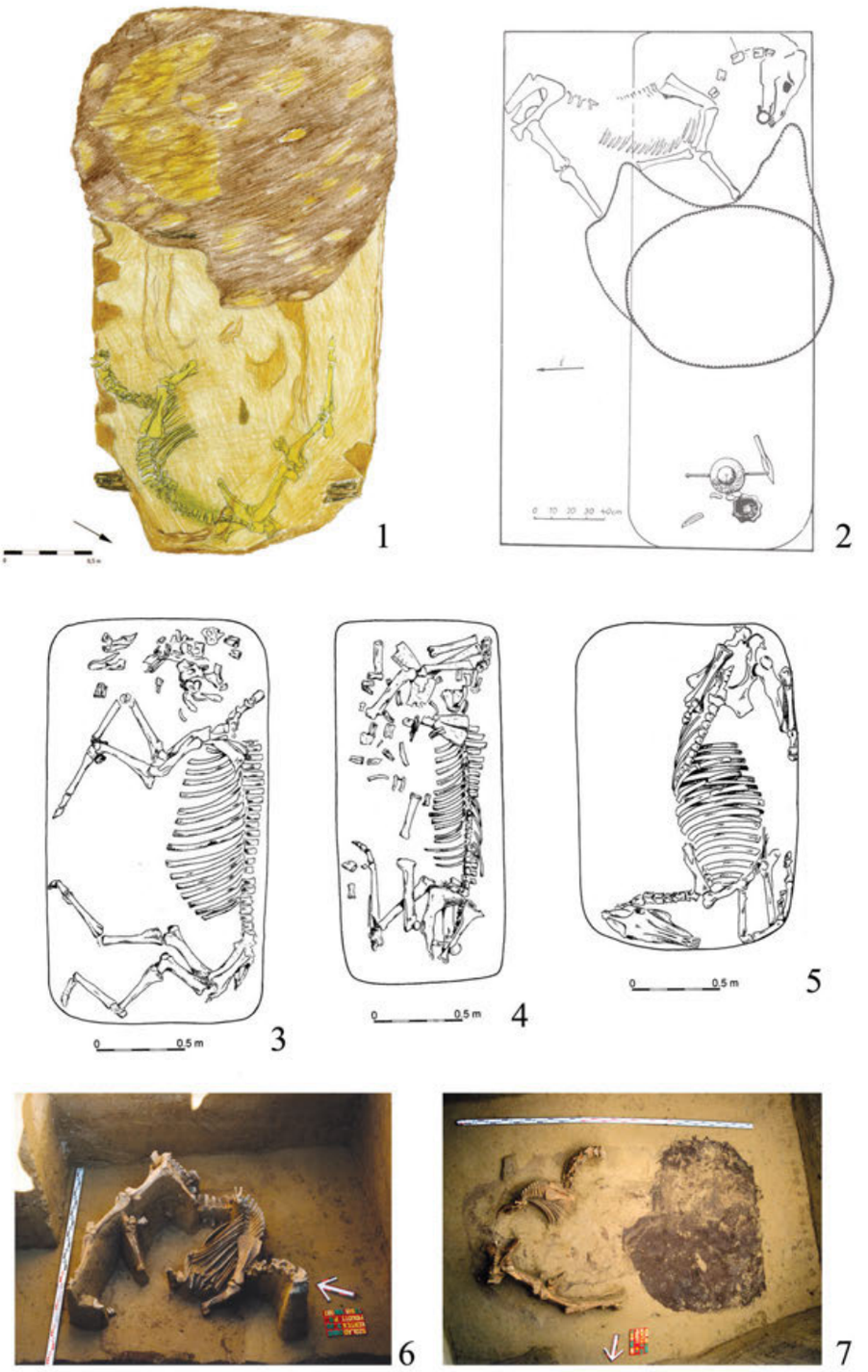

Fig. 5. Langobard horse graves in the Carpathian Basin: the position of the animals. 1, 6–7. Szólád-Kertek mögött Grave 13; 2. Vörs-Tótok dombja Grave 5; 3. Kajdacs Grave 8; 4. Kajdacs Grave 14; 5. Szentendre Grave 47.

without the actual animal, indicating symbolic burials (Maria Ponsee 46, Pilisvörösvár, Szentendre 34, Gyönk 6)[27].

Similar horse burials are associated with the Gepids. In present-day Hungary, such graves were found, for example, in Szolnok–Szanda (symbolic horse burial), Hódmezővásárhely–Kishomok, and Szőreg – although in the latter two cases it is unclear if the whole animal or only certain body parts were interred along with the human[28]. The Germanic horse-and-dog double graves from Keszthely–Általános Iskola (Elementary School), published by István Vörös, are not clearly associated with the Langobards, although similar, double animal burials are known from Langobard sites as well (e. g., Maria Ponsee[29] or Nocera Umbra[30]).

The scarce and rather scattered data on Langobard animal populations is partially due to the difficulties of associating sites to cultural or ethnic groups and distinguishing their archaeological heritage[31]. However, as noted above, the irregular collection, recording, and storage of animal remains discovered in the past pose further limitations to their study. Out of the seven sites with known Langobard horse burials, only four horse skeletons are available for study: the individual from Szólád, the two horses from Kajdacs, and one animal from Grave 47 of Szentendre. These are the only skeletons properly collected and stored in museum collections.

Langobard horses from Kajdacs and Szentendre

In addition to the Szólád horse, two animals from Kajdacs (Graves 8 and 14), and the one from Grave 47 of Szentendre can be examined in more detail.

Unfortunately, in comparison with the well-preserved Szólád individual, these skeletons suffered serious damage. Fragmentation made only a few measurements possible. While the horse skeletons Kajdacs 8 and Szentendre 47 are almost complete (some carpal and tarsal bones, the skulls, and both left metacarpals are missing), the skeleton of Kajdacs 14 is partial: only the right scapula, humerus, femur, tibia, metatarsal, and one left mandible fragment are stored in the museum's collection. It is not possible to say if these elements are missing due to taphonomic factors or inappropriate collection and storage.

The age and sex of these individuals, based on the poorly preserved teeth and the epiphyseal fusion of the long bones, are as follows:

– Kajdacs 8: an approximately 7-year-old stallion;
– Kajdacs 14: the skull is missing, and therefore it can only be stated with certainty that the animal was fully adult (older than 5 years of age); its sex remains uncertain;
– Szentendre 47: an approximately 5-year-old stallion.

Although preservation influences the available methods and calculations – for example, the fact that the Bartosiewicz method only works for more-or-less complete skeletons – it is clear that these animals belonged in the 130–140 cm range. Their body size is very similar to the Szólád individual: the few well-preserved long bones suggest a withers height of 134 cm for Kajdacs 14 (calculated from one metatarsal), 133 cm for Kajdacs 8 (calculated from one metacarpal), and 134 or 138 cm for Szentendre 47 (calculated with the Kiesewalter method or the Vitt method), respectively.

No pathological phenomena were present in the Kajdacs individuals. Similar to the Szólád individual, however, Szentendre 47 showed signs of arthritis. The medial and lateral splints fused with the right metacarpal. There were signs of inflammation on the right foot, with sponge-like bone tissue formation on the distal condyles of the metatarsals and the proximal phalanges, while the latter also widened both laterally and medially. Although such inflammations are most common on the feet, where they may manifest in severe forms, the case of the Szentendre individual is not extreme[32].

Comparative analysis

Even though the number of horse burials associated with the Langobards is limited, these finds may be analysed in juxtaposition with the rich Avar and Germanic material. *Diagram 1* shows the calculated withers height and metacarpal slenderness index of the early medieval horse population, juxtaposed with measurements of horses mainly found in present-day middle and eastern Germany[33]

27 Bóna / Horváth 2009, 183. – Bóna 1993, 124. – Adler 1977, 9; 13. – Wolff 1977.

28 Bóna 1979, 42. – Bóna / Nagy 2002, 219, fig. 89 (Szolnok–Szanda, Grave 135). – Csallány 1961, 133 (Kishomok, Grave 2); 166 (Szőreg, Grave 116); 290. According to Csallány, only parts of the horse body were interred in these graves.

29 Maria Ponsee, Graves 52 and 72; Müller-Wille 1972, 214. – Adler 1969. – Adler 1970a. – Dogs were interred as double burials, together with horses, but also alone. Grave 70 of the Langobard cemetery of Hegykő yielded two dog skeletons; Bökönyi 1974, 367. – At Ménfőcsanak, two dogs were buried together with an adult woman: Bartosiewicz 2009, 136–146. – Similar phenomena are known from Grave 85 of the Langobard cemetery of Maria Ponsee as well: Adler 1970b, 211.

30 Nocera Umbra, Grave 38. Müller-Wille 1972, 215. – Paribeni 1918, 238.

31 Keeping the methodological problems in mind, in this paper, therefore, ethnic labels are used as they are in the relevant literature for each case. More often the neutral term of "Langobard period" is used.

32 Bartosiewicz 2013, 117–119.

33 With Drantum as a north German exception.

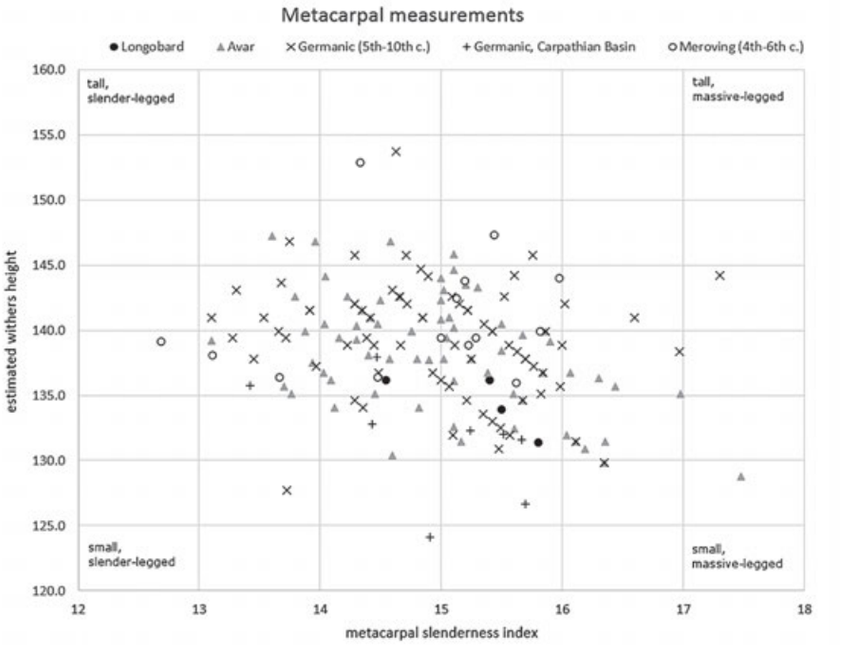

Diagram 1. Metacarpal slenderness and withers height estimations for Langobard, Avar, Germanic, and Merovingian horses, based on 171 individuals. Sites included: Langobard: Szentendre–Pannóniatelep, Szólád–Kertek mögött, Zaluži (Ambros / Müller 1980, 125), and Aspersdorf (Wolff 1977). The Kajdacs individuals were not considered due to poor preservation. Avar: Vörs–Papkert (Takács / Bartosiewicz 1993, 597–604), Bágyog–Gyűrhegy, Deszk–Baráth A. földje, Deszk–Ördögh földje, Hortobágy–Árkus, Környe, Óbuda–Szőlő utca, Pelypuszta, Pókaszepetk, Szeged–Makkoserdő, Szekszárd–palánk, Szentes–Kaján, Szentes–Nagyhegy, Szőreg–Téglagyár, Vác–Kavicsbánya (Bökönyi 1974). Germanic (5th–10th c.): Drantum (von Babo 2004); Dedeleben, Deersheim; Geusa; Grossörner; Köthen; Mühlhausen, Feldstrasse; Oberwerschen; Quedlinburg, Bockshornschanze; Rathewitz; Schönebeck; Seeburg; Stössen; Weimar; Weissenfels; Zorbau; Zwebendorf; Erfurt-Gispersleben; Liebersee; Merxleben; Mönchenholzhausen; Mühlhausen, Wagenstedter Str.; Alach; Ammern; Bilzingsleben; Griefstedt; Kaltensundheim; Kaltenwestheim, Rinderstall; Kapellendorf; Kleinurleben; Löbnitz; Mellingen; Mittelsömmern; Orlishausen; Quedlinburg, Badeborner Weg; Schlossvippach; Stotternheim; Grossschwabhausen; Hornhausen; Obermöllern; Rohnstedt; Straussrurt (Müller 1985). Germanic – Carpathian Basin: Garadna–Elkerülő út, Ordascsehi–Kistöltés, Keszthely–Általános Iskola (Vörös 1999). Merovingian: Tournai (Gabriel et al. 1995, 103–131).

The Germanic animal remains from Garadna–Elkerülő út and Ordacsehi–Kistöltés were analysed by my colleague Márta Daróczi-Szabó, to whom I am grateful for allowing me to use her yet unpublished data.

("Germanic", associated with the Thuringians) and horses found in western regions in present-day France ("Merovingian"). The Langobard and Avar individuals depicted in the diagram come from the Carpathian Basin. This makes a rough estimation about the animals' stature and phenotype possible.

The diagram shows a significant overlap between horses identified by archaeologists as Langobard, Germanic, and Avar. Bökönyi drew similar conclusions in his study on Germanic, Avar, and Hungarian Conquest period horses in the Carpathian Basin[34]. In this diagram, one horse from 4th–6th-century Tournai (France) and another individual from Schlossvippach (Germany) stand out of the cluster: these unusually tall animals may have been castrates[35]. This amount of data is obviously not sufficient to form general conclusions on the horse population of the Langobards, however, the available Langobard pool corresponds to the small-sized individuals among the Germanic horses. The two individuals from present-day Hungary (Szentendre 47 and Szólád), as well as the ones from Aspersdorf and Záluží, are in the middle of the Germanic horse cluster, and are relatively small with massive legs[36]. The horses found in Avar period Germanic contexts at Keszthely, classified by István Vörös as riding horses from a population possibly improved by horses of Eastern origin[37], are somewhat taller than the "Langobard" individuals, while those "Germanic" animals discovered at Garadna and Ordacsehi are smaller.

Studying the horse burials along the Elbe, Müller observed a great variability in the slenderness of long bones, although approximately 70 % of the horses had a slender-

34 Bökönyi 1974, 271–273, figs 109–110.

35 For the connection between the castration of Migration Period horses and their body size, see: Müller 1980, 148.

36 A withers height of 135 cm classifies as small/medium according to Vitt's system; Vitt 1952, 163–205.

37 Vörös 1999, 126; 128.

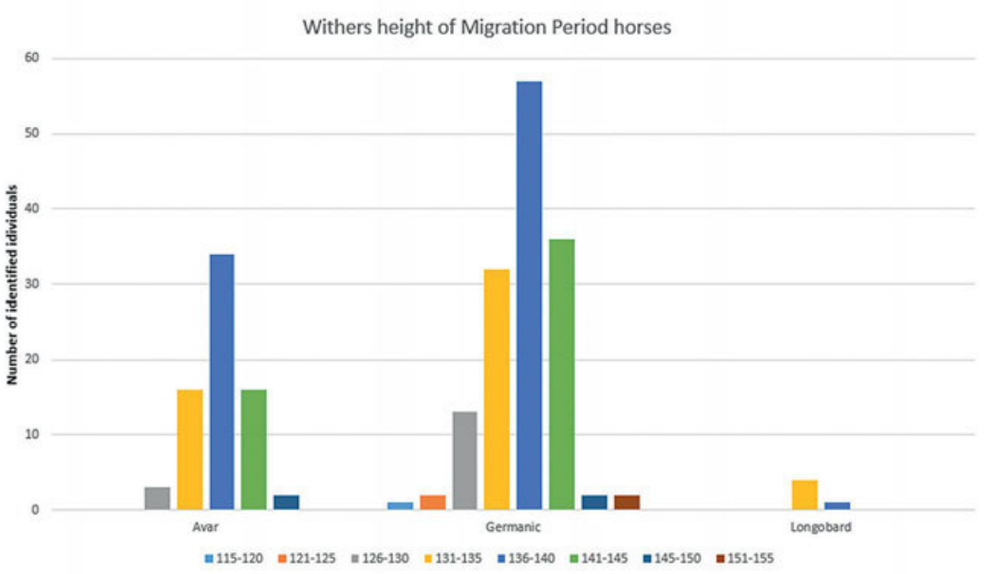

Diagram 2. Estimated withers heights of Migration Period horses, calculated from the metacarpals, based on published data (225 individuals). For the site list and references see *Diagram 1*.

ness index of 14.6–16.5,[38] that is, in the "Germanic" cluster in the middle of the above diagram. The animals Müller investigated had their average withers height around 137 cm[39]. This means that the available data shows great similarities between horses labelled as Germanic found in present-day Germany and those in present-day Hungary. Similar results are provided by a comparison of horse withers heights in the Germanic and Avar material: most animals belong to the 136–140 cm range *(Diagram 2)*. The scarce data on Langobard horses suggest somewhat smaller animals, but still in this size range.

These results reflect the variability of the genetic pool and the animals' use: horses of different statures were preferred for traction and riding. In the case of Langobard burials, it is often unclear whether the animal was interred as a riding horse, a horse for traction that belonged to the deceased, or as a sacrifice without any particular connection to the animal's use in its lifetime.

Ambros and Müller observed an interesting variability in the length of the spine of Migration Period (Germanic and Slavic / Avar) horses[40]. While the other Langobard horse skeletons known from the Carpathian Basin are too fragmented to make such observations, the back of the Szólád individual is somewhat shorter than usual, as 17 thoracic and six lumbar vertebrae are present as opposed to the more regular 18+6. This is not pathological, but a rare phenomenon among Migration Period horses unearthed in the region. The length and flexibility of the back influences the possible ways of use, for example, the shorter back of Arabian horses is associated with a better ability to carry weight. However, as opposed to the Szólád horse's shortened thoracic region, Arabian horses have shortened backs in the lumbar and sacral region.

According to Bökönyi, Germanic horses may be distinguished from the Avar and early Hungarian horses in the Migration Period material based on their special cranial morphology and their narrow frontal bone[41]. Such measurements are impossible on the Langobard individuals due to the fragmentation of the remains. The Langobard horse skull discovered in the cemetery of Záluží is not informative either, as only the length of the teeth row and the diastema could be measured[42].

Pathological lesions like those observed on the Szólád individual occur frequently in Migration Period horses, and even extreme examples have been documented. An Avar period horse associated with a Germanic site at Keszthely, first published by Bökönyi, shows extraordinary lesions: eleven thoracic and six lumbar vertebrae were fused[43]. László and Gábor Bartosiewicz[44], and later István

38 Müller 1980, 157, tab. 6.
39 Müller 1980, 151–152, tab. 2. – Müller 1985, 17–18, tab. 4.
40 Müller 1980,156. – Ambros / Müller 1980, 52–53. – Müller 1985, 24–25.
41 Bökönyi 1974, 273–274, figs 111–112.
42 Ambros / Müller 1980, 115.
43 Bökönyi 1974, 291, fig. 125.
44 Bartosiewicz / Bartosiewicz 2002, 819–830.

Vörös[45], studied this individual. Another horse discovered at the same Keszthely site also displayed serious spine pathologies[46]. Other cases are known from the cemetery of Tiszafüred–Majoros, Kölked–Feketekapu and Pókaszepetk, all from the Avar period[47]. Studying 5th–10th-century horses from present-day Eastern Germany, Müller observed pathological lesions on the spine of 33 animals, and these mostly involved the 13th–18th thoracic vertebrae and the lumbar vertebrae[48]. He also investigated 57 Germanic horses, dated to the 5th and 6th century and brought to light in the Elbe region, and found that spine lesions and inflammations of the hock joint were the leading identifiable pathologies in the population. He concluded that the use and workload of these beasts must have been the cause for their health problems and identified these animals as riding horses. However, it must be kept in mind that only a minority of the animals Müller studied were pathological, and even those exhibited only moderate lesions[49]. Pathological alterations are not always present in the Germanic horse material: none of the above-mentioned health problems were present among the 25 horses excavated from the 8th- and 9th-century Germanic cemetery of Drantum[50].

The aetiology of these lesions is dubious. Physical exercise and workload are among the probable causes. Ambros and Müller[51] as well as László and Gábor Bartosiewicz[52] raise the possibility that certain saddle types as well as improper saddling may cause spine problems. In his monograph on pathologies, László Bartosiewicz adds that inherited factors are also among the causes of spine pathologies of Avar period horses[53]. With domestication, as natural selection was no longer present, pathological conditions that are virtually absent in wild populations began to occur: workload itself is only one of the contributing factors, the frequency of lesions also depends on inherited predispositions in the domestic pool[54]. Another frequent cause is the age-related distortion and reduced flexibility of the intervertebral disks, because of which, they fail to properly alleviate any mechanical shock on the spine[55]. This, however, is not likely in the Szólád case because the animal was young. Alterations and pathological curves of the spine may also be rooted in injuries of other body parts. Although there is no sign of traumatic injuries on the Szólád skeleton, the inflammation of the hock joint is possibly connected to the spine lesion or is rooted in the same condition. Other Avar period individuals with severe spine lesions had similar alterations of their hock joints[56]. Siegel also lists infections among the causes of spinal lesions[57].

Extreme pathological phenomena manifest in the bones if the animal that is no longer able to work is kept alive and cared for. In such cases, sacral contexts are often hypothesised but rarely proven. Vörös writes that the Germanic horse population was prone to joint inflammations, and while the animals were heavily used for work, they were also spared and cared for. This attitude presupposes the necessary veterinary knowledge and also that the horse population that was big enough to substitute the limping animals with healthy ones[58]. Although severe pathologies are absent in the Langobard horse material, it may be hypothesised that the attitude towards horses was shared with other Germanic groups.

45 Vörös 1999, 122.

46 Vörös 1999, 125.

47 Bartosiewicz 2013, 197–198, figs. 173–174. For Kölked–Feketekapu, Grave 474, see: Takács 1996, 397–412.

48 Müller 1985, 31, tab. 14.

49 Of the 57 horses investigated by Müller, 12 displayed pathological lesions. Some of these were rather old individuals; Müller 1980, 146–150.

50 von Babo 2004, 154–155.

51 Ambros and Müller suggest this in the discussion of the horses from 6th–8th century Holiare; Ambros / Müller 1980, 80.

52 Bartosiewicz / Bartosiewicz 2002, 828.

53 Bartosiewicz raises this possibility in the discussion of animals from Keszthely, Tiszafüred, Pókaszepetk and Kölked–Feketekapu: Bartosiewicz 2013, 197–200.

54 Bartosiewicz / Bartosiewicz 2002, 828–829.

55 Sályi 1965, 479.

56 In the Keszthely horse with 17 fused vertebrae, severe inflammation was present in the right hock joint and the hoof joint of the left foreleg, probably as a consequence of the distortion of the spine. Bartosiewicz / Bartosiewicz 2002, 826, fig. 6. – Vörös 1999, 122.

57 Siegel 1976, 368.

58 Vörös 1999, 127.

SUMMARY

Most of the nine horses known from the Carpathian Basin associated with the Langobards have been lost. This severely limits the possibilities of a comparative analysis. Presently, four skeletons are available for study: Kajdacs 8 and 14, Szentendre 47, and the Szólád horse. These remains suggest a homogeneous population of small, massive-legged horses that measured 130–140 cm at the withers. A comparison with other, contemporary Germanic and Avar horse populations from Central Europe suggests that the Langobard animals were somewhat smaller than the Migration Period average.

The young stallion from Szólád Grave 13 corresponds in all aspects to the few other Langobard horse burials known in the region. The back region of this individual was shortened. Spinal lesions and the inflammation of the hock joint suggest a limited use for the animal, which may have played a part in why it was chosen to be interred. Similar lesions typically caused by workload and inherited predispositions are well-known in the Migration Period, Avar, and Germanic horse populations, although the Szólád horse is the first such finding associated with a Langobard context.

TABLES

The measurements follow the standards described in: VON DEN DRIESCH 1976.

* = estimation (fragmented bone)
(pat) = pathological bone

Bone	Side	GL	BP	DP	SD	BD	DD	Other measurements
mc	dex	210	49.3	31	33.3	47.6	34.5	
mc	sin	210	47.9	30.8	33.3	46.7		
mt	sin	255	50.9	42.6*(pat)	30.9	47.4	24.9	
mt	dex	255	52.9	45* (pat)	30.8	47.2	24.7	
tibia	sin	340	93.8	79.6	39.4	67.4	42.2	
tibia	dex	340			40.9	67.5	43.1	
humerus	dex	280	88.9		35.3	76.8	72.5	
humerus	sin		89.4	93.8	37.1	78.5		
radius	sin	320	78.8	47	38.7	74.3	42.7	
radius	dex	320	79.5	46.7	40.1	76.2	42.7	
femur	sin	385	111.1	81.1	38.7	88.5	107.7	DC 54.2
femur	dex	385	109.3		41	89	106.5	
ulna	sin							SDO 45.3; DPA 60.4
ulna	dex							SDO 45.3; DPA 60.4

Bone	Side	Measurements
astragalus	sin	GH 54; GB 57.7; LMT 55.2; BFD 47.4
astragalus	dex	GH 53.3; GB 57.4; LMT 54.7; BFCD 47.5
calcaneus	sin	GL 105
calcaneus	dex	GL 104.9
scapula	sin	SLC 63.2; GLP 90.1; BG 49.3; LG 54.7
scapula	dex	DHA 300; SLC 62.6; GLP 90.4; BG 48.3
sacrum		Bfcr 42.5; GB 200*, GL 215, Hfcr 21.3
pelvis	dex	LAr 59.7; LA 63.4; SH 37.9; SB 25.1; LFO 65.7
pelvis	sin	LAr 58.5; LA 63.4; SH 38.6; SB 25.4; LFO 63.4; LS 159; GL 400*

Tab. 1. Horse skeleton, Szólád–Kertek mögött, Grave 13. Stallion, 4.5–5 years old.

Bone	Side	GL	BP	DP	SD	BD	DD	Other measurements
humerus	sin				36.1			
humerus	dex				34.3			
radius	sin		76*	46*	37*			
mc	sin	213.6*						
tibia	sin				39.3			
tibia	dex				39			
mt	dex	256*			32.6*	44*		
astragalus	sin							GH 55.2

Tab. 2. Horse skeleton, Kajdacs–Homokbánya, Grave 8. Stallion, 7 years old.

Bone	Side	GL	BP	DP	SD	BD	DD	Other measurements
humerus	dex				36			
mt	dex	256.8	47	38.4	29.7	43*	26.7	
tibia	dex	351	84*		38	69.2	42	
femur	dex				39.8			
scapula	dex							SLC 68*; GLP 96; BG 48.8

Tab. 3. Horse skeleton, Kajdacs–Homokbánya, Grave 14. Fully adult individual, sex unknown.

Bone	Side	GL	BP	DP	SD	BD	DD	Other measurements
humerus	sin	280	91.4*	99.8	36.5	77.3	77.8	GLC 260
humerus	dex	280			37.1	75.5	77.5	GLC 259
radius	sin	327	77	47.7	40	75.8	43.2	
radius	dex	326	81.5	49.2	41.6	75.8	43	
mc	sin	214	45.5	32.7	33.3	47.5	21.5	
femur	sin	378			41		111	
femur	dex				43	89.5	114	
tibia	sin	341			48.3	69	43.8	
tibia	dex	342			44		44	
mt	sin	253	47	40.3	32.5	46.8	26.5	
mt (pat)	dex	253	47.3	40	32.5	49.8*	25*	
phal. prox. posterior	sin	81.7	53.9	37.8	34			
phal. prox. posterior	dex	82.9	54	39.3*	34.2	44.4	24.2	

Bone	Side	Other measurements
cranium fr.		foramen magnum: 34: 90.1; 36: 33.4; 37:40
atlas		Bfcd 88.4
scapula	sin	BG 48
scapula	dex	GLP 87
ulna	dex	SDO 47.2; DPA 67.8
astragalus	dex	GH 53.4; GB 61; LmT 57

Tab. 4. Horse skeleton, Szentendre–Pannóniatelep, Grave 47. Stallion, 5 years old.

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ABSTRACT

Most horse skeletons known from the Carpathian Basin, as associated with the Langobards, have been lost, which severely limits our knowledge on these animals. In this paper, the four Langobard horse skeletons presently available for study: Grave 13 from Szólád (Back Garden Lane), Graves 8 and 14 from Kajdacs, and Grave 47 from Szentendre, are analysed through macroscopic methods in the context of the Migration Period (Avar, Merovingian, and Germanic) horse population. Grave 13 in Szólád yielded the almost complete skeleton of a 4.5 to 5-year-old stallion, associated with an adult man buried in a coffin. The animal was small, with short and massive legs, and its stature corresponds in all aspects to the few other Longobard horse burials known in the region. There was an inflammation in both hock joints, and several pathological phenomena were observed on its spine which, although not severe, must have had a negative impact on the usability of the animal and may have played a part in why it was chosen to be interred. Similar lesions typically caused by workload and inherited predispositions are well-known in the Migration Period Avar and Germanic horse populations, although the Szólád horse is the first such finding from a Longobard context.

ZUSAMMENFASSUNG

Die meisten im Karpatenbecken freigelegten langobardenzeitlichen Pferdeskelette sind für die Forschung verloren, und das ist ein schweres Hindernis für das Studium an ihnen. In diesem Artikel untersuche ich die derzeitig für eine Untersuchung zugänglichen vier langobardenzeitlichen Pferdeskelette (Szólád-Kertek mögött, Grab 13; Kajdacs, Grab 8 und 14; Szentendre, Grab 47) mit makroskopischen Methoden, im Kontext der völkerwanderungszeitlichen (awarischen, germanischen bzw. merowingerzeitlichen) Pferdepopulation. In Szólád Grab 13 lag das fast vollständige Skelett eines 4,5–5jährigen Hengstes, das oben auf die hölzerne Grabkammer eines im Baumstammsarg bestatteten erwachsenen Mannes gelegt war. Das Tier war kleinwüchsig, mit kurzen stämmigen Beinen, und sein Körperbau entspricht in jeder Hinsicht unserem bisherigen, stark mangelhaften Bild von den langobardenzeitlichen Pferden der Region. Beide Sprunggelenke des Tieres wiesen Anzeichen von Gelenkenzündung auf, und auch an der Wirbelsäule konnten mehrere krankhafte Veränderungen beobachtet werden. Selbst wenn diese Veränderungen nicht schwerwiegend waren, haben sie gewiss die Verwendbarkeit des Tieres negativ beeinflusst und können eine Rolle dabei gespielt haben, warum dieses Tier mit dem Mann begraben wurde. Ähnliche Veränderungen, die allgemein mit Arbeitsverrichtung, physischer Belastung oder ererbten Abnormitäten in Zusammenhang zu bringen sind, kennen wir auch von awaren- und germanenzeitlichen Pferden, doch im langobardenzeitlichen Kontext ist dies der erste derartige Fall.

ÖSSZEFOGLALÁS

A Kárpát-medencében feltárt legtöbb longobárd kori lóváz elveszett a kutatás számára, ami komoly akadályt gördít a tanulmányozásuk elé. Ebben a cikkben a jelenleg vizsgálatra elérhető négy longobárd kori lócsontvázat (Szólád-Kertek mögött, 13. sír; Kajdacs, 8. és 14. sír; és Szentendre, 47. sír) elemzem makroszkopikus módszerekkel, a népvándorlás kori (avar, germán, ill. meroving kori) lópopuláció kontextusában. A Szóládon feltárt 13-as sír egy 4,5–5 éves csődör csaknem teljes vázát rejtette, amit egy farönkkoporsóban elhantolt felnőtt férfi fa sírkamrája tetejére fektettek. Az állat kis testű volt, rövid, vaskos lábakkal, testfelépítése minden szempontból megfelel az eddig a régió longobárd kori lovairól kialakított erősen hiányos képünknek. Az állat mindkét csánkján ízületi gyulladás jelei mutatkoztak, és a gerincén is több kóros elváltozást sikerült megfigyelni. Ezek az elváltozások, bár nem voltak súlyosak, minden bizonnyal negatívan befolyásolták az állat hasznosíthatóságát, és szerepet játszhattak abban, hogy miért ezt az állatot temették a férfi mellé. Hasonló, általában munkavégzéssel, fizikai terheléssel vagy öröklött rendellenességekkel összefüggésbe hozható elváltozásokat a népvándorlás korából avar és germán kori lovakon is ismerünk, ám longobárd kori kontextusban ez az első ilyen lelet.