

Recent camel finds from Hungary

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ABSTRACT

This paper is a brief review of camel bones recently discovered in the territory of modern-day Hungary. The goal of this paper is to provide an inventory of

KEY WORDS

Dromedary,
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MOTS CLÉS

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all known camel finds representing both the Roman Period province of Pannonia (1st-4th c.) and the northernmost outpost of the Ottoman Empire in Europe (16th-17th c.), historical periods when this exotic animal was present in Hungary. In spite of the fact that both occupying forces used camels, the camel discoveries cannot be linked exclusively to military functions. Morphological and metric information identifies the majority of these bones as originating from dromedaries. However, the list of 18 sites offers putative evidence that both dromedary and Bactrian camel were used in the central part of the Carpathian Basin.

RÉSUMÉ*Les découvertes récentes de chameaux en Hongrie.*

Ce papier est une brève revue des os de chameaux récemment découverts dans les territoires actuels de la Hongrie. L'objectif de cette étude est de faire un inventaire de toutes les découvertes de chameaux qui se rattachent à la province de Pannonie à la période romaine (1^e-4^e s.) ainsi que les confins les plus septentrionaux des avant-postes de l'Empire ottoman en Europe (16^e-17^e s.), des périodes historiques où cet animal étaient présents en Hongrie. En dépit du fait que ces deux forces d'occupation utilisaient le chameau, ces derniers ne peuvent être reliés exclusivement à la fonction militaire. L'information morphologique et métrique sur ces os permet de rapporter la majorité de ces restes au dromadaire. Cependant un corpus de 18 sites apporte la preuve putative que les chameaux de Bactriane et les dromadaires étaient utilisés dans le centre du bassin des Carpates.

INTRODUCTION

The two-humped wild camel (*Camelus ferus* Przewalski, 1878), now restricted to the western Gobi desert, is considered the ancestor of both the two-humped Bactrian camel (*Camelus bactrianus* Linnaeus, 1758; Gentry *et al.* 2004: table 1) and the Arabian camel or dromedary (*Camelus dromedarius* Linnaeus, 1758). Unknown in the Holocene fauna of Europe, these animals are important historical indicators of both military invasions and long-distance trade. In written sources they are also mentioned as medieval royal gifts (Bökonyi 1969). In the territory of modern-day Hungary, sporadic remains are concentrated to the Roman (1st-4th c.) and the Ottoman Periods (16th-17th c.) that both represented centuries of direct Mediterranean and Inner Asian cultural influence. Considering both time intervals, the number of finds is small. This summary is intended to provide up-to-date archaeozoological information as of the first decade of research in the 21st century.

MATERIAL AND METHODS**SPATIAL DISTRIBUTION**

Camel remains, occurring rarely in Hungary, represent a typical class of finds that reflects the regional intensity of research as much as the original distribution of these animals related to the intensity of site occupation. Their occurrence is thus more likely in areas where quantities of animal bone are systematically evaluated. Correspondingly, several of the finds under discussion here came to light in the Budapest municipal area (six of 18 sites listed in Appendices A-B). This territory has usually been densely inhabited during the last two millennia, and intensive modern-day excavations preceding urban development schemes also increase the likelihood of recovery.

A special problem of locating the remains of working animals is that, unless used for meat, their carcasses tend to be disposed off at peripheral provenances. Since camels in Hungary were primarily used as beasts of burden and not kept for meat,

their bones rarely occur among archaeological settlement refuse. However, fortunate exceptions exist, giving researchers a chance to find and analyze a small, but increasing number of camel remains. Unfortunately, some originate from sites disturbed by multiple redeposition, especially in urban areas, making precise stratigraphic dating problematic. In dubious cases Roman or Ottoman Period chronological attributions have been considered most likely in Hungary (Bartosiewicz 1996).

SKELETAL REPRESENTATION, MORPHOMETRY

Due to their large size and robust structure camel bones are easily found by hand collection, they are not prone to recovery bias. It is, however, parts of the dentition and dense meta- and autopodium elements that seem overrepresented in assemblages because they are the least fragmented and the easiest to identify for the first sight. However, distinguishing between dromedaries and Bactrian camels would be of key importance from the viewpoint of historical interpretation. Ageing and taxonomic identification are both made difficult by the fact that the overwhelming majority of surviving bones originate from the distal extremities where epiphyseal fusion takes place early. Thus, while creating the impression of an adult individual with fully fused metapodial and phalangeal epiphyses, animals might still have been growing further increasing the transversal dimensions of these early maturing bones. The problem is compounded by the possibilities of hybridization and [early] castration, both impacting on skeletal growth and the resulting adult size of the animal. Phenotype, age and sexual di- (or even tri-) morphism thus form an inseparable and interdependent complex hindering precise taxonomic identification. In this paper rough morphometric attribution focused on species.

RECENT FINDS

All but one Holocene camel finds known from Hungary are tabulated in Appendices A (Roman Period) and B (Ottoman Period). The geographical distributions of the 18 sites are shown in Figure 1 A and B. Previously unpublished finds are briefly described in this chapter.

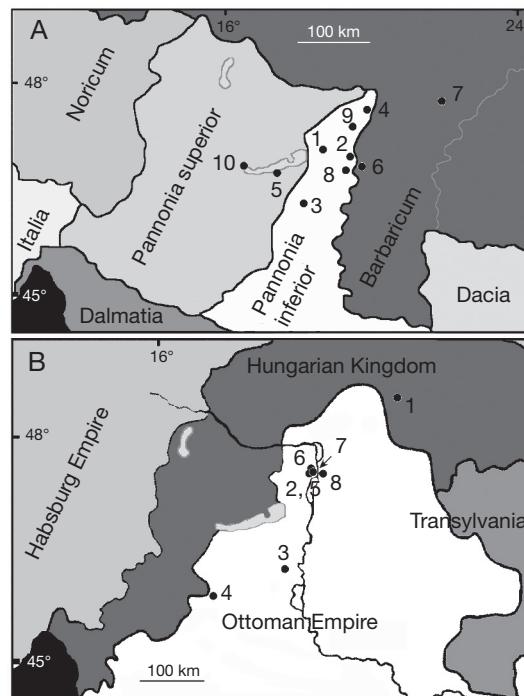


Fig. 1. — The geographical distribution of camel finds from Hungary in relation to ancient imperial borders. **A**, Roman Period; **B**, Ottoman Period. Site codes in the map are listed by period in Appendices A-B (Drawing by László Bartosiewicz).

ROMAN PERIOD

Although the first ever archaeological camel find from Tác-Fövenypuszta of dubious stratigraphic position probably originated from a Roman villa, it has often been postulated that camel finds in the territory of modern-day Hungary were associated with military occupation.

Budapest-Aquincum (Site 4, Appendix A, Figure 1 A)

One metacarpal distal fragment (Fig. 2) recovered from the site excavated at the crossing between Szentendrei and Záhony streets in the outskirts of Roman Aquincum, the capital of Pannonia inferior province after AD 106. The bone turned up on the southern periphery of the civil town, north of the military fort that had once been the core of the settlement. Use by the military, therefore could be the explanation for the presence of this bone fragment near the civil town. Until now, no camel remains



FIG. 2. — Dorsal (left) and palmar aspects of the metacarpus fragment from Aquincum (Site 4, Appendix A; Photo Pál Kenéz). Scale bar, 5 cm.

have been found in urban settlement deposits in Pannonia and they are likewise absent inside the civil town of Aquincum (Choyke 2003). Unfortunately species identification was not possible due to the bad preservation of the fragment. The lateral articular condyle is, the other is badly damaged.

Balatonlelle-Kenderföld (Site 5, Appendix A, Fig. 1A)
From the Balatonlelle section of the M7 highway the P₄-M₃ section of an almost complete mandible of an adult individual was found. It was recovered from a shallow trench filled with atypical Roman Period shards, representing 2nd-3rd c. Celtic ‘native’ population. However, the camel bone evidently shows Roman influence on rural life in the province.

Since camel remains from Hungary often originate from military contexts, this rural find from inside Pannonia superior is of special interest. As the bone was found in a rural settlement, it is possible that the camel was used for other than military purposes. Unfortunately, in the absence of morphological criteria for camel dentition it could not be determined whether this element originated from a Bactrian camel or a dromedary. Dimensions of the lower dentition after von den Driesch (1976): P4-M3 length=144.4mm; length of the molar row=125.7mm; length of the M3 tooth=61.0mm.

Dunavecse-Ugordáció, Site I. (Site 6, Appendix A, Fig. 1A)
The site is located on the left bank of the Danube, outside the Roman *limes* in the so-called Barbaricum.

Features 16 and 17-21 of the settlement yielded three camel bones dated to the Roman Imperial Period. A distal right scapula fragment came to light from Feature 16 while another right scapula was found in Feature 17-21 accompanied by a fragmented 8th thoracic vertebra (Fig. 3). These finds represent at least two adult individuals. Along with the rest of the bones from Feature 17-21, camel bones were covered by a thin, dark brownish layer. The spotted, uneven distribution of this discoloration and intact bone structure suggest that these marks are caused by an organic or metal residue in the deposit rather than burning.

Camel remains from Dunavecse could be successfully identified by comparisons to known modern scapulae in the reference collection of the University of Veterinary Medicine Vienna. Morphologically both scapulae seem to originate from Bactrian camels and this observation is also supported by measurements (Tugya & Lichtenstein 2011, 149). Dimensions of the measurable scapula after von den Driesch (1976): SLC=82.6mm; BG= 69.6mm; GLP=118.9mm.

Daruszentmiklós-Alsó Pázmány (Site 8, Appendix A, Fig. 1 A)

Feature 70 at this site was a well containing a fill of 7-8th c. Avar Period finds. A single camel bone was inventoried as entry No. 1.38582.90.12. Only the proximal end of this posterior axial phalanx I is intact, the bone seems split lengthwise (Fig. 4). Comparisons with phalanx measurements of modern dromedaries and Bactrian camels in the dissertation of Corinna Steiger (1990: 103) showed that the Daruszentmiklós find was a lot smaller than modern-day dromedaries. On the basis of dimensions and identification keys (Steiger 1990, 74-75) this bone seems to originate from a small dromedary. Measurements after von den Driesch (1976): Bp=36.9mm; Dp=26.2mm.

No Avar Period camel bones have previously been identified in Hungary, although the dromedary tibia fragment from Kompolt-Kistér in the Barbaricum originated from a Sarmatian deposit contaminated by later, Avar Period finds (Bartosiewicz 1999: 327-328). The Daruszentmiklós settlement deposits also yielded fragments of Roman *tegulae*, which



FIG. 3. — Lateral aspects of scapulae from Features 16 and 17-21 and cranial aspect of the 8th thoracic vertebra from Feature 17-21 at Dunavecse-Ugordáció, Site I (Site 6, Appendix A; Photo László Lichtenstein). Scale bar, 5 cm.

may indicate a more realistic alternative date for this camel phalanx.

Budaörs-Kamaraerdei-dűlő, Site 2 (Site 9, Appendix A, Fig. 1A)

This find originates from a settlement found during rescue excavations north of Hosszúrét Creek in the south-western outskirts of Budapest. The Roman vicus that at one point covered an estimated 9 hectares grew out of an earlier Celtic settlement. It was a wealthy trading post with strong ties to the provincial capital Aquincum. The distal half of a right radius came to light from a 2nd-3rd c. pit dwelling (Feature L/37) whose walls were reinforced using stones built up in a half circle.

The distal epiphysis of the bone was unfused. The exact ages of epiphyseal fusion are unknown in camels. In horse and cattle, however, the distal end of the radius fuses at the ages of 3.5-4 years (Schmid 1972: 75, Table IX). Skeletal maturation in large-bodied camels may take



FIG. 4. — Dorsal aspect of a fragmented posterior axial phalanx I of a small dromedary from Daruszentmiklós (Site 8, Appendix A; Photo Pál Kenéz). Scale bar, 5 cm.

even longer therefore an age over 4 years is a reasonable proposition for this animal. According to Steiger (1990) in Bactrian camel the line of epiphyseal fusion is located more "highly" i. e.



FIG. 5. — Dorsal, plantar, lateral (left to right) and proximal (top) aspects of a posterior lateral phalanx I of a probably female Bactrian camel from Keszthely (Site 9, Appendix A; Photo Andrea Körösi). Scale bar, 5 cm.

TABLE 1. — Phalanx I from an adult female Bactrian camel Keszthely-Fenékpuszta. Measurements after von den Driesch (1976) in mm.

	GL	Bp	Dp	SD	Sd	Bd	Dd
Phalanx I, posterior, lateral	90.5	40.4	31.6	19.8	16.0	36.2	27.1

in a proximal direction compared to dromedaries. This morphological similarity to Bactrian camel is also supported by metric evidence. Both the smallest breadth and smallest depth of the diaphysis convincingly fall within the size range of larger, Bactrian camels (51.0-64.5mm and 28-34mm respectively). The breadth of the fusion surface of the missing epiphysis is 94.6mm. The epiphysis itself could only have been broader than this already respectable size.

Measurements after von den Driesch (1976): SD=54.4mm; Sd=33.3mm.

Keszthely-Fenékpuszta (Site 10, Appendix A, Fig. 1A) This 3th-5th c. specimen was discovered and identified during the revision of old collections in the Hungarian Agricultural Museum. Several excavations have been carried out at the road crossing (Aquileia-Aquincum, SW-NE and Sopianae-Savaria SE-NW) in Pannonia super-



FIG. 6. — Lateral aspect of the patella (left) dorsal aspects of a fragmented metacarpus (centre), and unarticulated I and II phalanges from Buda Castle, Teleki Palace (Site 5, Appendix B). A cutmark is shown on the palmar aspect of the phalanx I on the right hand side (Photo László Daróczi-Szabó). Scale bar, 5 cm.

rior, near the Roman settlement of Valcum at a late Roman fort erected in the 4th c. The right posterior lateral phalanx I (Fig. 5) was found in Work lot 2 within the 13 hectare site excavated under the direction of László Barkóczi and Károly Sági between 1959–1983. Given the strategic importance of the location both from a commercial and military point of view, the animal may have been associated with either of these two best known functions.

Based on its shape and size, the right posterior lateral phalanx I originates from an adult female Bactrian camel (Table 1).

OTTOMAN PERIOD

Following the retreat of the Roman Empire from Pannonia, the second wave of camels arrived into the Carpathian Basin some 1200 years later, with the advancing Ottoman Turkish army during the early 16th century. Documentary sources would suggest that camels were used mainly for mili-

tary purposes, especially as mounts and beasts of burden in the shipment of artillery supplies, but they may also have played a role in civilian long-distance trade.

Buda Castle-Teleki Palace (Site 5, Appendix B, Fig. 1B)
A total of four camel bones were found in mixed Ottoman-Modern Age (Christian) occupation layers, presumably of Ottoman origins. A patella, two phalanges (I and II) and the distal end of a metacarpus belonged to this group (Fig. 6). Based on their shape and size, the phalanges came rather from a dromedary. As they turned up in adjacent sections of the excavated area, it may be stated that they belonged to the same individual. It may be hypothesized that the robust patella belonged to a Bactrian camel, or a massive dromedary. Unfortunately the metacarpus fragment could not be identified to species. All bones originated from subadult or adult animals. The phalanx I. of the supposed dromedary shows a

TABLE 2. — Camel bone measurements from Buda Castle, Teleki Palace. Measurements after von den Driesch (1976) in mm.

	GL	Bp	Dp	SD	Sd	Bd	Dd
Metacarpus					24.2	100.5	45.7
Phalanx I, posterior	86	35.1	28.5	19.8	15.6	33.9	25.2
Phalanx II, posterior	56.5	28	23.2	26.7	14.7	34.2*	17.5
Patella	97.2						



FIG. 7. — Medial aspect of a poorly healed rib fracture from Budapest, Lovas str. 41 (Site 6, Appendix B; Photo László Daróczi-Szabó). Scale bar, 5 cm.



FIG. 8. — In situ photograph of the head and neck of the subadult camel recovered at Budapest, Kacsá str. 15-23 West (Site 7, Appendix B; Photo Katalin Éder)

clear cutmark (Figure 6, right), and mild exostoses could be observed on the phalanx II. attributed to dromedary which may equally result from overworking and old age. (Table 2)

Budapest-Lovas str. 41 (Site 6, Appendix B, Fig. 1B)
Right outside the walls of Buda Castle, a relatively large number of remains of a subadult camel were

found. The 26 bones (an estimated number of the complete bones, the exact number could not be decided due to high fragmentation) came from an Ottoman-Christian mixed layer, and they presumably belonged to the period of the Ottoman occupation. Unfortunately, as all the bones were ribs and vertebrae, species identification could not be attempted. One of the best preserved ribs shows a



FIG. 9. — Scapula, humerus and radiocubitus of the right front limb of the subadult camel found at Budapest, Kacsa str. 15-23 West (Site 7, Appendix B; Photo László Darócz-Szabó). Scale bar, 5 cm.

callus from a badly healed fracture (Fig. 7). This type of trauma is not uncommon in large-bodied working animals.

*Budapest-Kacsa str. 15-23 West (Site 7,
Appendix B, Fig. 1B)*

Twenty-seven bones of a subadult, presumably dromedary were found north of the nearby Buda Castle (Fig. 8). Identification is based on the morphological characteristics of the remains. The animal lay on the top of a large Ottoman Period pit (Feature 44-1), suggesting that it had died around the siege of the

castle (1686), after which it was retaken by Christian forces. The assemblage contains fragments of the skull, the almost complete mandible, the intact right shoulder blade, humerus and radius (together with the ulna), and a number of vertebrae and ribs (Fig. 9). The proximal epiphysis of the humerus and the distal end of the radius were only partially fused with the fusion line clearly visible. In light of the aforementioned known ages of cattle (Schmid 1972: 75, Table IX), however, these two bones are among the last to fuse, probably at the age of sexual maturation (4-5 years in dromedaries; Studer and

TABLE 3. — Camel bone measurements from Budapest, Kacsa str. 15-23, West. Limb measurements after von den Driesch (1976) in mm:

Skeletal element					SLC	BG	GLP
Scapula					78.3	66.9	115.7
Humerus	GL	Bp	Dp	SD	Sd	Bd	Dd
	426.4		143.2	56.7	58.8	86.3	96.7
Radius	556.2	100.2	59.8	57.8	38.7	101.3	52.8
Ulna included	623.1						



Fig. 10. — Cutmarks on the condylus occipitalis of the individual from Budapest, Kacsa str. 15-23 West (Site 7, Appendix B; Photo László Daróczi-Szabó. Scale bar, 5 cm.

Schneider 2008: 588). Butchering marks on the occipital condyle of the cranium (Fig. 10), a thoracic vertebra and fine cut marks on some ribs suggest that the camel's meat was consumed. Gnawing by dogs was also observed on some ribs (Fig. 11).

Measurements of the lower dentition after von den Driesch (1976): P4-M3 length=154.8mm; length of the molar row=128.3mm; length of the M3 tooth= 57.6mm (Table 3).

Budapest-Pesti Barnabás str. 1. (Site 8, Appendix B, Figure 1 B)

The excavation took place in the centre of the historical Pest, on the left side of the Danube. Two

almost intact camel bones, a right mandible and a cervical vertebra (Figs 12; 13) came to the surface from the Ottoman Period layers of the excavation. The two bones were found in the same feature (No. 6), so, even if there is no direct anatomical connection between them, it can not be ruled out that they represent the same adult individual. A cut mark was observed on the cranial end of the vertebra (Figure 12), suggesting that parts of the animal were used. Measurements of the lower dentition after von den Driesch (1976): P4-M3 length=144.3mm; length of the molar row=119.7mm; length of the M3 tooth= 53.2mm.

DISCUSSION AND CONCLUSIONS

When seen within the context of already known camel find spots in Holocene Hungary, the ten new sites presented in this paper doubled the material available for study. The total of 18 sites are divided almost equally between the Roman and Ottoman Periods (Appendices A–B). While several specimens originate from stratigraphically disturbed contexts, even those deposits invariably contained either Roman or Ottoman Period artefacts.

Indeed, both time periods when camels were relevant in the present-day territory of Hungary are marked by well over a century of imperial occupation representing massive Mediterranean/oriental military presence. However, Roman Period camels may have been used as pack animals not only by the army but in long-distance civilian trading as well within and outside the extensive Roman Empire (Bartosiewicz and Dirjec 2001). This possibility may be a reasonable explanation for the presence of camel bones in the proximity



FIG. 11. — Modifications on some bones identified at Budapest, Kacsa str. 15-23 West (Site 7, Appendix B). Top row: cut marks on a thoracic vertebra (left) and rib. Bottom row: gnaw marks on ribs (Photo László Daróczi-Szabó). Scale bar, 5 cm.

of main roads and outside the territory of the Empire in adjacent areas of the Barbaricum. Roman military (e.g. army units from Syria) seems to have used dromedaries but Bactrian camels also reached this region through civilian trade from Central Asia (Bartosiewicz and Dirjec 2001) illustrating the immense mobility of people aided by animals during Antiquity. Following the Marcomannic Wars of the 170s, Romans organized the province of Sarmatia beyond the *limes* on the left bank of the Danube in what had been the core Sarmatian area within the Barbaricum (Barkóczi 1980: 98).

Although the presence of camels in parts of Hungary under Ottoman rule is iconographi-



FIG. 12. — Buccal aspect of the right mandible from Budapest, Pesti Barnabás str. 1. (Site 8, Appendix B; Photo László Daróczi-Szabó). Scale bar, 5 cm.

TABLE 4. — Sources of previously unpublished camel bones

No.	Site	Excavator	Institution
Roman Period			
4	Budapest-Aquincum	Zoltán Havas	Aquincum Museum of the Budapest History Museum
5	Balatonlelle-Kenderföld	Gábor Serlegi, Tibor Marton	Archaeological Institute of the Hungarian Academy of Sciences
6	Dunavecse-Ugordáció, Site I,	Ágnes Somogyvári	Katona József Museum, Kecskemét
8	Daruszentmiklós-Alsó Pázmánd	Andrea Cséki	Field Service for Cultural Heritage, Budapest
9	Budaörs-Kamaraerdei-dűlő, Site 2	Katalin Ottományi	Directorate of Pest County Museums
10	Keszthely-Fenékpuszta	László Barkóczi, Károly Sági	Hungarian Agricultural Museum
Ottoman Period			
5	Buda Castle–Teleki Palace	Dorottya B. Nyékelyi	Medieval Department, Budapest History Museum
6	Budapest-Lovas str. 41.	Zoltán Bencze	Medieval Department, Budapest History Museum
7	Budapest-Kacsa str. 15-23 West	Katalin Éder	Medieval Department, Budapest History Museum
8	Budapest-Pesti Barnabás str. 1.	Judit Zádor	Medieval Department, Budapest History Museum



Fig. 13. — Cranial aspect of the cervical vertebra with cutmark from Budapest, Pesti Barnabás str. 1. (Site 8, Appendix B; Photo László Daróczi-Szabó). Scale bar, 5 cm.

cally documented (e. g. Fig. 14) and written sources also confirm their solid existence in the area, to date only a relatively small number of zooarchaeological finds offer tangible material evidence. In contrast to the Roman Period, documentary sources from this time invariably refer to the military use of camels. For example they were indispensable in the mass transportation of artillery supplies of the Ottoman army

(Faroqhi 1982). While (partly due to multiple re-deposition) most camel finds are sporadic, isolated specimens, several Ottoman Period articulated skeletal elements came to light at Budapest, Kacsa street and previously at Szekszárd-Palánk. They also offer better opportunities to observe skeletal modifications.

With the retreat of the Ottomans from Hungary, camels disappeared from the area and, until today, no such remains were found from subsequent periods of the Modern Age. In addition to climatic conditions inadequate for permanent camel breeding in the area, the resistance of the local population against one of the symbols of the Ottoman oppression may have played a role in the disappearance of these animals from the local repertoire of domesticates.

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FIG. 14. — Siege of Buda in 1541 by Erhardt Schön (Published by Stefan Hammer in Nürnberg, 1542) showing loose dromedaries in the frontline on the banks of Ördög-creek.

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APPENDIX

APPENDIX A. — Roman Period. The geographical distribution of sites is shown in Figure 1/A (top)

No.	Site	Date	Skeletal element	Age, sex	Note, interpretation	Identified by
1	Tác-Fövenyvpuszta	2nd–3rd c. disturbed	mandible fragment	NA	Dating based on the presence of a Roman villa	Bökönyi 1974: 227.
2	Dunaújváros-Intercisa	2nd–3rd c.	2 large calvaria (mostly facial part surviving) and “other bones”	mature	Sacrificial pit by Syrian military units? Dromedaries based on geographical origins.	Bökönyi 1989: 402.
3	Iovia-Kapospula-Alsóhetény		Maxilla, both sides	adult	Military fort	Vörös in Kirchhoff 1999: 89, Figure 2.
4	Budapest-Aquincum, Szentendrei str.-Záhony str. crossing	2nd–4th c.? mixed	metacarpus distal fragment	adult	Found in the southern periphery of the civil town in mixed Roman Period layers. Identification precluded by fragmented state.	Zs. E. Kovács, original, 2006
5	Balatonlelle-Kenderföld (Feature B-470)	2nd–3rd c. or 4th c.	left mandible	adult	Recovered from a ditch in a Celtic “indigenous” rural settlement.	M. Daróczi-Szabó, original, 2004
6	Dunavecse-Ugordáció, Site I, Barbaricum	2nd–3rd c.	2 right scapula distal fragments, 8th thoracic vertebra	MNI=2 adult	One scapula was recovered from Feature 16, the other and the vertebra fragment from Feature 17–21. The scapulae are large enough to represent Bactrians	B. Tugya & L. Lichtenstein, 2011: 149.
7	Kompolt-Kistér, Barbaricum	2nd–3rd c.	right tibia distal fragment	adult	Found at a Sarmatian rural settlement by a major road. Strata contaminated by Avar Period finds. Bd=77.9 Pl. XIII/2a–b. mm, Dd=52.2 mm.	Bartosiewicz 1999: 327–328, Figure 62,
8	Daruszentmiklós-Alsó Pázmánd	Roman/Avar Period?	proximal fragment of a posterior axial phalanx I	adult?	Recovered from a rural well (Feature 70) at a rural settlement characterized by 7–8th c. Avar Period ceramics. Smaller than known modern dromedaries	B. Tugya, original, 2009
9	Budaörs-Kamarerdei-dűlő, Site 2	2nd–3rd c.	distal half of right radius	4 years	Found in pit dwelling L/37 at trading post. Within size range of large Bactrian camels.	A. Kőrösi, original, 2003
10	Keszthely-Fenékpuszta, Work lot 2	3rd–5th c.	right posterior lateral phalanx I.	adult female	Exact provenance unknown within the Roman Period settlement. Most probably Bactrian camel.	A. Kőrösi 2013

APPENDIX B. — Ottoman Turkish Period. The geographical distribution of sites is shown in Figure 1/B (bottom).

No.	Site	Date	Skeletal element	Age, sex	Note, interpretation	Identified by
1	Diósgyőr-Castle	15th-17th c.	maxilla fragment	NA	Dromedary?	Bökönyi 1974: 228.
2	Buda-Castle	Ottoman Period	humerus fragment	NA	Dromedary?	Bökönyi 1969: 251.
3	Szekszárd-Palánk	late 16th-early 17th c.	2 thoracic vertebrae, rib, scapula, pelvis, humerus, 3 femur, radiocubitus, calcaneus, 2 astragalus.	Adults, distal tibia, ia with calcaneus several measurable slender bones.	Dromedaries based on Dromedaries based on	Bartosiewicz 1995: 121, Fig. 2, Table 2.
4	Bajcsa-vár	17th c.	right maxilla fragment, thoracic vertebra spinal process	adult	Christian border fort, not occupied by Ottoman Turkish forces permanently. Maxilla found near headquarters in Feature 114. Dromedary identified by relatively small size	Bartosiewicz 2002: 93, Fig. 6.
5	Buda Castle-Tel-Otto-eki Palace (mixed) (Squares A/4, A/5, A/8, LA/8)	Ottoman-Christians	patella, metacarpus distal fragment, anterior phalanx I, phalanx II	adult or subadult	In close vicinity to the Royal Palace; the two phalanges belong to dromedary, the patella possibly to a Bactrian or a massive dromedary; the metacarpus fragment is unidentifiable.	L. Daróczi-Szabó, original, 2010, 2011
6	Budapest-Lovas str. 41. (Square 3)	Ottoman-Christian (mixed)	fragmented vertebrae and ribs	subadult	Right outside Buda Castle; one rib showing the signs of a poorly healed fracture	L. Daróczi-Szabó, original, 2009
7	Budapest-Kacska str. of the Ottoman Period (Feature 44/1)	17th c. end	fragments of the cranium; mandible; cervical vertebrae, ribs; right, scapula, humerus, radius and ulna	subadult MNI=1	Close to Buda Castle, lying on the top of an Ottoman Period pit; presumably died during the Christian siege of the Castle (1686), some bones showing cut marks, proving that the meat was consumed; the remains belong to a dromedary.	L. Daróczi-Szabó, original, 2011
8	Budapest-Pesti Barnabás str. 1. (Feature 6)	Ottoman Period	right mandible; vertebra cervicalis	adult	The centre of historical Pest; cutmark on the vertebra	L. Daróczi-Szabó, original, 2010