

## CUMANIAN DOGS FROM CSENGELE (SE HUNGARY)

### A CSENGELEI KUN KUTYÁK

ANNAMÁRIA BÁRÁNY

Hungarian National Museum, Department of Archaeology, Múzeum körút 14-16, 1088, Budapest, Hungary

E-mail: [baranya@hnm.hu](mailto:baranya@hnm.hu)

#### Abstract

During the excavation of Csengele-Bogárhát 12/14/A/2 site (Csongrád County, SE Hungary) Cumanian settlement (Árpád Period, 13th century), remains of nine dogs were found in feature no. 38 (oven), no. 98 (ditch), no. 99 (ditch), no. 113 (pit), and no. 136 (ditch). The withers heights of the Cumanian dogs from Csengele varied between 44.3 and 58.9 cm, indicative of medium-small and medium body-height.

Looking at the craniometrical parameters of three individuals (feature no. 99/I, feature no. 113 and feature no. 136) belonged to the morphological group of *Canis familiaris intermedius* (Woldřich 1878), which includes hound-type dogs. The fourth dog (feature no. 98) belonged to the morphological group *Canis familiaris matris optimae* (Jeitneles 1877), which also contains the shepherd dogs.

#### Kivonat

Csengele-Bogárhát 12/14/A/2. lelőhely (Csongrád megye) kun település (Árpád-kor, XIII. sz.) feltárása során összesen 9 kutya csontmaradványai kerültek elő a 38. objektumból (tűzhely), a 98., 99., 136. objektumokból (árok) és a 113. objektumból (gödör). A csengelei kun kutya 44,3 cm és 58,9 cm közötti marmagasságúak, kisközepes és közepes testméretűek voltak.

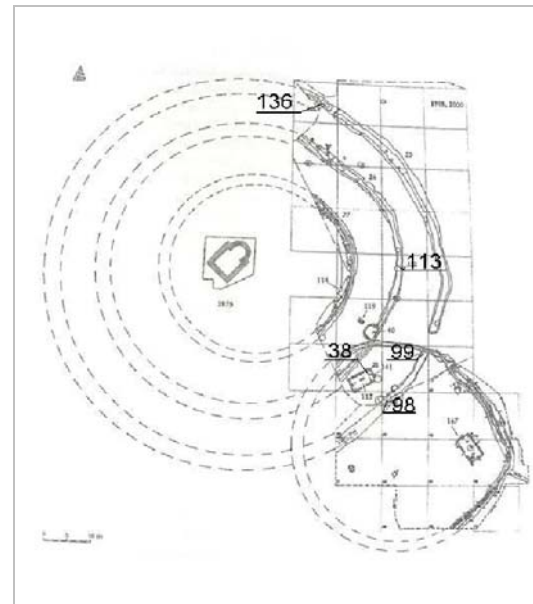
Craniológiai jellemzőik alapján 3 egyed (a 99. objektum/I. egyed, 113. objektum, 136. objektum/ I. egyed) a kopóféleket is magába foglaló *Canis familiaris intermedius* (Woldřich 1878) alakkörbe tartozott. A negyedik kutya (98. objektum/I. egyed) a juhászkutyákat is felölelő *Canis familiaris matris optimae* (Jeitneles 1877) alakkörbe tartozott.

KEYWORDS: DOG SKELETON, CUMANIAN, 13TH CENTURY ÁRPÁD PERIOD

KULCSSZAVAK: KUTYACSONTVÁZ, KUN, ÁRPÁD-KOR, XIII. SZÁZAD

#### Introduction

The excavation of Csengele-Bogárhát 12/14/A/2 site (Csongrád County) began in 1975 under the direction of Ferenc Horváth (Szeged, Móra Ferenc Museum). The work continued as part of preventive excavations along the track of the M5 motorway in 1998. That time a western slice of a concentric ditch-system (marked as roundels 25th, 26th, 27th) was discovered, that once had surrounded an Árpád Period church found during the course of the 1975 excavations (Fig. 1). 37 Cumanian graves and two houses were excavated at the site. A partial skeleton of a dog was lying on the baking surface of an oven in the “northern house” (feature no. 112) placed between the outer (25th) and the middle (26th) roundels (Horváth 2001, 79, Fig. 25). Three complete dog skeletons and a partial skeleton of a dog were found in three features (feature no. 98, 99, 136) in the outer roundel (25th). The head of a dog came to light from feature no. 113 in the middle roundel (26th).



**Fig. 1.:** The drawing of Csengele-Bogárhát site no. 12/14/A/2 (Horváth 2001 p. 79)

**1. ábra:** Csengele-Bogárhát 12/14/A/2. lelőhely rajza (Horváth 2001, 79. oldal)

**Table 1.:** Csengele 12/14A/2 Anatomical distribution of the bones of the Árpád-Period dog individuals**1. táblázat:** Csengele 12/14A/2. Árpád- kori kutyák csontjainak anatómiai megoszlása egyedenként (db)

Feature/ pieces	Feature no. 112 oven no. 38		Feature no. 98	Feature no. 99		Pit no. 113	Feature no. 136		
	I.	II.		I.	II.		I.	II.	III.
Individual									
neurocranium			1	1		1	1		
viscerocranium					1				
upper teeth					2				
mandible		1	2	2		2	2		
lower teeth	2				3				
	3		3	3	6	3	3	0	0
v. cervicalis			7	7			5		
v. thoracalis	2		13	13			9		
v. lumbalis	1		2	7			6		
sacrum				1			1		
v. caudalis				3			1		
vertebrae					1				
costa	5		25	21	4		18		
sternum			4	2	3		3		
	8		51	54	8		43	0	0
scapula	2		2	2			2		
humerus	2		2	2					
radius	2		2	2			1	1	
ulna	2		2		1		1		
os carpale	5		7		5		4		
metacarpus	4		8	7			8		
	17		23	13	6		16	1	0
pelvis				2			2	1	
femur			1	2	1		2		
patella					2				
tibia			2	2			2		1
astragalus			2	1			2		
calcaneus			2	1			2		
os tarsale			6	2	2		5		
metatarsus			8	4			7		
metapodium					1		3		
sesamoideum				4			1		
ph.I.	2		10	9	5		14		
ph.II.			2	4	3		15		
ph.III.			6	2	2		9		
	2		39	33	16		64	1	1
<b>Total:</b>	<b>29</b>	<b>1</b>	<b>116</b>	<b>103</b>	<b>36</b>	<b>3</b>	<b>126</b>	<b>2</b>	<b>1</b>

## Zoological characterization of the dogs

### “Northern House” (Feature no. 112), oven 38

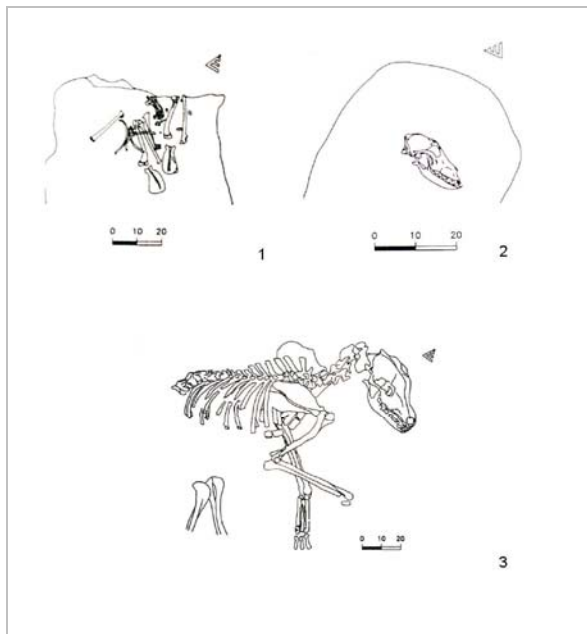
The remains of two individuals could be distinguished among the dog bones found on the baking surface of the oven in the “northern house”, located between roundels 25 and 26. Mandible of individual no. I and the frontal body section of individual no. II could be recovered (Horváth 2001, 127). The rear half of individual no. II was destroyed. The remaining bones were burned and calcined by the high temperature (Horváth 2001, 128, Fig. 46). A total of 30 bone fragments were found of the two individuals (the anatomical distribution of the skeletal remains is shown in **Table 1.**) In addition to the dog bones eight sheep bones and a fish bone were also identified from the oven.

#### Individual no. I

Head: mandibula sin. + P2-4

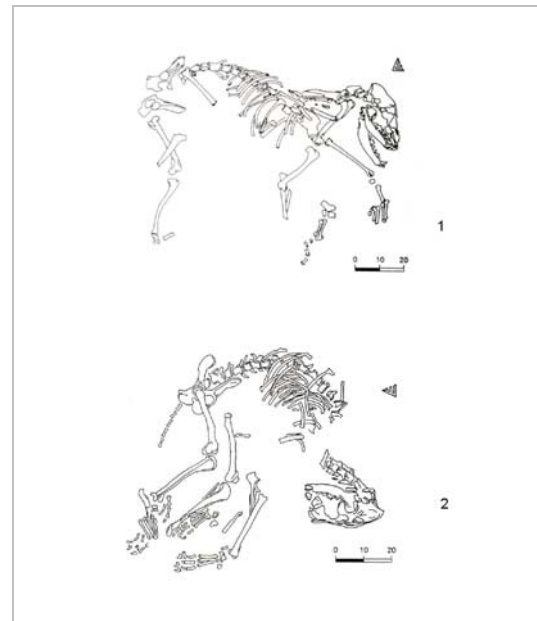
The mandible is short, the premolars are slightly crowded. The corpus of the mandible is medium high, the ventral edge is slightly wavy. The incisura vasorum sharply arches up, medium deep. The processus angularis is a strong hook, the condylus is broad (measurements of the mandible are shown in **Table 3.**)

The dog was an adult individual.



**Fig. 2.:** Csengele 12/14/A/2 Drawings of the dog finds/I (Horváth 2001 p. 142) 1: oven no. 38 (feature no. 112), 2: feature no. 113., 3: feature no. 98

**2. ábra:** Csengele 12/14/A/2. A kutyaleték rajzai/I (Horváth 2001, 142. oldal) 1: 38. tűzhely (112. objektum), 2: 113. objektum, 3: 98. objektum



**Fig. 3.:** Csengele 12/14/A/2 Drawings of the dog finds/II (Horváth 2001 p. 144) 1: feature no. 99/I dog, 2: feature no. 136/ I dog

**3. ábra:** Csengele 12/14/A/2. A kutyaleték rajzai/II. (Horváth 2001, 144. oldal) 1: 99. objektum / I. egyed, 2: 136. objektum / I. egyed

The alveolus of the M1 is loosened. Due to an inflammation, which caused intra vitam tooth loss, the margin of the alveolus extended to the buccal side of the mandible. The corpus in this section is thickened. The inflammation reached the M2-3. Exostosis is observable on the buccal side of the processus articularis (**Fig. 6/1.**)

#### Individual no. II (Fig. 2/1.):

Head: I3, P4 sin.

Trunk: 2 v. thoracalis, 1 v. lumbalis 5 costa

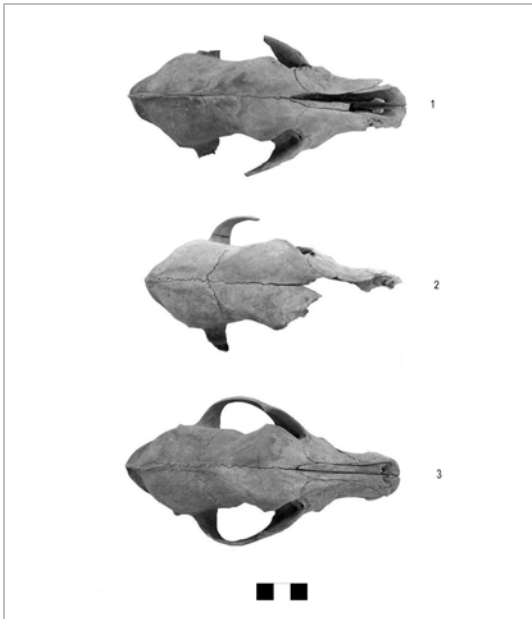
Limbs: scapula sin-dext., humerus sin-dext., radius sin-dext., ulna sin-dext., 5 os carpal, metacarpus II-V. sin., 2 phalanx I.

The age of the individual is between 8 months and 1 year, according to the ossification phases of epiphyses of the long bones (Schmid 1972). The average withers height is 58.9 cm calculated from the greatest lengths of 4 long bones (Koudelka 1886).

The long bones are large, slender, the individual could be similar to the present shepherd dogs (**Figs. 7/1, 8/1, 9/1.**) The measurements of the bones are shown in **Tables 5-15.**

#### Feature no. 98

A nearly complete skeleton of a dog lay in the SE part of the outer (25th) roundel. Beside the bones of the dog a cattle phalanx was in the feature.



**Fig. 4.:** Csengele 12/14/A/2 Skulls of the dogs from the 1: feature no. 98, 2: feature no. 99/I dog, 3: feature no. 113

**4. ábra:** Csengele 12/14/A/2. Árpád-kori kutyák koponyái. 1: 98. objektum, 2: 99. objektum / I. egyed, 3: 113. objektum

The dog skeleton was lying on its left side, the head directed to E-NE. The skeleton was lying in anatomical order from the head to the lumbalis region, the spine was unbroken, the limbs rested on each other, the pelvis missed. The shins, the tarsals and the metatarsals were lying further from the skeleton (Horváth 2001, pages 141-142, Figs 52-53/1) (**Fig. 2/3**). 116 pieces of bones belonged to that individual (the anatomical distribution of the bones is shown in **Table 1**).

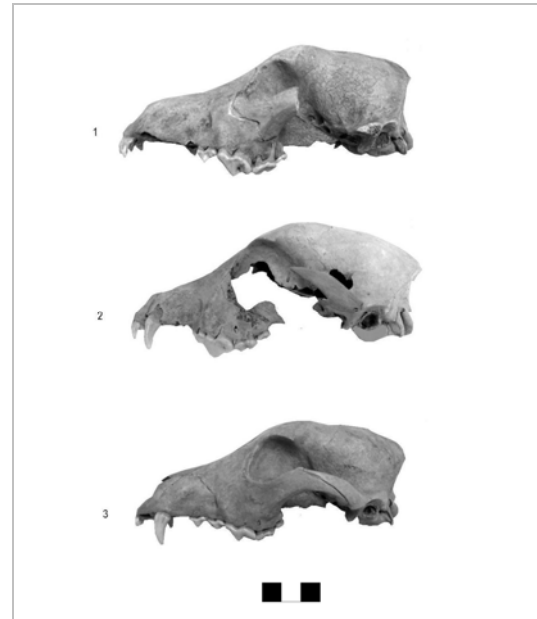
Head: skull (I1-3 + P 2-4 + M 1-2 sin., I 2-3 + P 2-4 + M1-2 dext.)

mandibula pair (I3 + C inf. + P2-4 + M1-2 sin., I3 + C inf. + P3-4 + M1-2 dext.)

Trunk: 7 v. cervicalis (phys. length: 172 mm), 13 v. thoracalis (phys. length: 242 mm), 2 v. lumbalis, 24 costa, 4 sternebra

Limbs: scapula sin-dext., humerus sin-dext., radius sin-dext., ulna sin-dext., 6 os carpale, metacarpus II-V. sin-dext., caput femoris, tibia sin-dext., astragalus sin-dext., calcaneus sin-dext., 6 os tarsale, metatarsus II-V. sin-dext., 10 phalanx I., 2 phalanx II., 6 phalanx III. (**Figs.7-8-9/2, 11/1**).

The skull is long, strong, and broad. The occipital is concave, triangle shape, the foramen magnum is wide, almost circle shape. The parietals are convex, the interparietal is short, the crista sagittalis externa is strong, slightly high, bends aborally, beyond the plane of the occipital.



**Fig. 5:** Csengele 12/14/A/2 Skulls of the dogs from the Árpád Period 1: feature no. 98, 2: feature no. 99/I dog, 3: feature no. 113

**5. ábra:** Csengele 12/14/A/2. Árpád-kori kutyák koponyái. 1: 98. objektum, 2: 99. objektum / I. egyed, 3: 113. objektum

The frontale is slightly broad, the front halves protrude, then meet in an aboral deepening sulcus along the suture. The processus zygomaticus is short, rounded, the orbita is angular. The linea temporalis is flat, short and closes shortly after the bregma. The profile sharply joins to the nose. The bridge (stop) is observable, not expressed, medium-low standing. The viscerocranium is wide (**Figs. 4-5/1**).

The mandible is long, thick, the corpus is low, its ventral edge is straight. The incisura vasorum arches highly, shallow, ends into a thin, strong processus articularis (**Fig. 6/2**). The dentition is regular, the teeth are large.

The age of the individual is between 1.5-2 years according to the ossification phases of epiphyses of the long bones (Schmid 1972). According to the morphological traits of the skull the gender of the dog is male. The average withers height is 54.9 cm calculated from the greatest lengths of 7 long bones (Koudelka 1886). The measurements of the bones are shown in **Tables 5-15**. The withers height is 58.2 cm calculated from the interior length of the cranial cavity (Wyrośt & Kucharczyk 1967).

According to the morphological traits and the craniometric data of the skull the animal belonged to the morphological group of *Canis familiaris matris optima* (Jeitneles 1877), which includes the shepherd dogs also. The skull measurements and indices are shown in the **Tables 2, 3 and 4**.

**Table 2.:** Csengele 12/14A/2 Skull measurements of the Árpád-Period dogs (mm) (measurements after Driesch 1976)**2.táblázat:** Csengele 12/14/A/2. Árpád-kori kutyák koponyaméretei (mm) (mérétek Driesch 1976 nyomán)

	Feature no. 98	Feature no. 99/I	Feature no. 113	Feature no. 136/I
Calvaria length (Op-P)	187	179	173	-
Parietal length (Op-Br)	53	52	50	54.5
Interparietal length (Op-L)	35	21.5	35	31
Parietal med.-sag. length (L-Br)	22	33	19.5	24.5
Frontal med.-sag. length (Br-N)	52	56	50.5	-
Neurocranial length (Op-N)	99.5	101	96	-
Viscerocranial length (N-P)	94	88	85	-
Viscerocranial oral length (P-Ect)	108	105	101	-
Neurocranial aboral length (Ect-Op)	88	90	82.5	92.5
Proc. nasalis length (N-Fo)	13	16.5	16.5	-
Op-Fo length	111	117.5	110.5	-
P-If length	59	53	54.5	-
Maxilla dors. length (Fo-Ni)	26	40	18	-
Lateralis length (Fo-Mo)	55.5	53	53	-
Intermaxilla dors. length (P-Ni)	49.5	71	54	-
Lateral length (P-Mo)	33	24	25.5	-
Palate length (P-St)	96.5	-	83.5	-
Os palatinum length (Po-St)	35	-	26.5	-
Base length (B-P)	170	158	151	-
Length of cheektooth row (P-Pd)	93	90	87	103
Dental row length (Pm-Pd)	69	66	61	69
Incisive length (P-Ic)	12.5	10	12	14
Diastema length (Ic-Pm)	16.5	15.5	14	19
C alveolus length	14	11.5	11	15.5
P1-4 length (Pm-Mol)	53	45	46	52
M1-2 length (Mol-Pd)	19	21.5	17	19
P-Mol length	85.5	73	75	82
B-Mol length	96.5	87	86	-
Neurocranium aboral height (B-Op)	51	43	39.5	46
Os occipitale height (O-Op)	30.5	23	26	31
Foramen magnum height (B-O)	18	16.5	17	15
Interior neurocranium length (B-fs ethm.)	87.5	-	85	-
Exterior neurocranium length (B-N)	100	97	90	-
Skull largest width (Zy-Zy)	-	-	87.5	-
Neurocranium largest width (Ot-Ot)	65.5	60.5	57.5	63
Neurocranium width (eu-eu)	59	57	52	50
Frontal smallest width (fs-fs)	43	43	35	-
Frontal largest width (Ect-Ect)	50	54	46	-
Distance between the medial canthi (Ent-Ent)	36	36.5	30	-

**Table 2., cont.****2.táblázat, folyt.**

	Feature no. 98	Feature no. 99/I	Feature no. 113	Feature no. 136/I
Os nasale width I. (Fo-Fo)	8.5	10	9	-
Os nasale width II. (Ni-Ni)	12	-	9	-
If-If distance	40	-	33	-
M-M distance	51.5	-	47.5	-
Zmi-Zmi distance	72	-	57.5	-
Face shortest width at Pm	35	-	29	-
face largest width at Mol	66	-	55	-
Incisive width	27	-	24	28
C width	37	-	30	-
Distance between proc. jugulare (Ju-Ju)	53	42	43.5	48
Distance between the external auditory meati (po-po)	49	54	56	48
Petrous bone width (Pha-Pha)	17	10	17	18
Fossa mandibularis width	38	40	36	33
Condylus occipitalis width (c-c)	40	35	34	40
Foramen magnum width	20	19	19	19
P4 length (alv.)	14	16.5	18	20
Orbits height	30	-	27	-
Os zygomaticum thickness	-	-	3	-
Skull height (B-L)	59.5	50	50.5	55

**Feature no. 99**

The feature no. 99 was placed in the SE part of the outer roundel (25th), NE from the feature no. 98. There was an almost complete skeleton of a dog and other dog bones from another individual in it.

**Individual no. I:**

The skeleton of the dog lay in anatomical order, its head directed E. The front limbs were extended towards the head, the right front limbs were perpendicular to them. The hind limbs lay on each other. The spine bended in an arc, was not broken. From the carpals and the tarsals the bones moved down, scattered (Horváth 2001, page 144, Fig 54/1) (**Fig. 3/1.**). 103 pieces of bones belonged to that individual (the anatomical distribution of the bones is shown in **Table 1.**).

Head: skull (I3 + C sup. + P3-4 + M1-2 sin., C sup. + P3-4 dext.)

Mandibula pair (I2-3 + P1-4 + M1-2 sin., I1-3 + P1 + P3-4 dext.)

Trunk: 7 v. cervicalis, (phys. length: 158 mm), 13 v. thoracis (phys. length: 200 mm), 7 v. lumbalis

(phys. length: 177 mm), sacrum (3 ), 3 v. caudalis, 21 costa, 2 sternebra

Limbs: scapula dext., humerus sin-dext., radius sin-dext., 8 os carpale, metacarpus II-V. sin, III-V. dext., pelvis sin-dext. (on os ilii sin. pea size dent), femur sin-dext., tibia sin-dext., astragalus sin., calcaneus sin., 5 os tarsale, metatarsus II-V. dext., 4 os sesamoideum, 9 phalanx I., 4 phalanx II., 2 phalanx III. (Figs 7/2, 8/4, 10/1, 11/2)

The left side maxilla is broken, the zygomatic bones are damaged.

The skull is oblong, medium-broad, slender-walled. The parietal is convex, the interparietal short, low, a less-expressed crista sagittalis externa rises on it, slightly bending behind the plane of the occipital. The occipital is triangle shape, the foramen magnum is wide, diamond shape. The frontals are oblong, slightly narrow at the frontostenion. The cristae frontales are plane, the front halves meet in a shallow deepening sulcus and end into rounded, angular processus zygomaticus. A non-expressed stop is observable on the neurocranium (Figs 4-5/12). The dentition is complete, regular. Both sides P3 have a 3rd root on the lingual side.



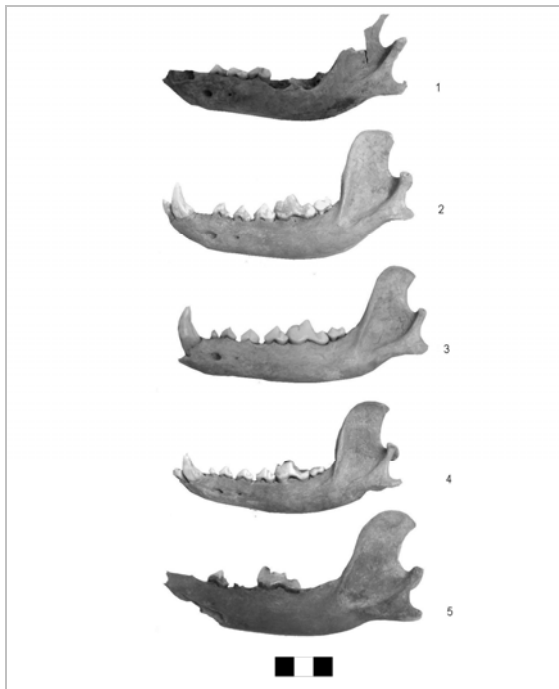
**Table 3.:** Csengele 12/14/A/2 Mandible measurements of the Árpád-Period dogs (mm) (measurements after Driesch 1976)**3. táblázat:** Csengele 12/14/A/2. Árpád-kori kutyák mandibula méretei (mm) (mérétek Driesch 1976 nyomán)

Mandible measurements	Feature no. 98	Feature no. 99/ Ind. no. I	Feature no. 113	Feature no. 136/ Ind. no. I
Total length (cm-Id)	142.5	125*	124	-
goc-Id length	141.5	124*	125	-
X –Id length	137	121*	118	-
C aboralis alv.-cm length	122	113	107	125
C aboralis alv.-goc length	121	113	109	128
C aboralis alv. –X length	115.5	110	102	120.5
C aboralis alv.-M3 aboralis alv. length	82	78	73	83
M3-P1	78.5	73	69	77.5
M3-P2	73.5	69	64	72.5
Molar length	37	47	32	38
Premolar dental row length (P1-4)	43	38	38	42
Premolar dental row length (P2-4)	39	32.5	31.5	36
M1 width and depth (on tooth)	22.5:9	21:9	20:7.5	22:9
M1 width and depth (on alveolus)	21.5:8	19:8	19:7	20.5:8
M2 width and depth	10:8	9:6	9:6	-
Greatest thickness of the mandible at M1	12.5	10	10	10
Cm-gov. height	26	23	23	27
Cr-gov height	53	46.5	48	56
Corpus height behind M3	27	25	24.5	26
Corpus height before M1	22	20.5	18	22
Corpus height before P1	20.5	17	15.5	-
Ramus thickness	24.5	23	22	26
Condylus width	25	18	20	24

\*: fragmentary bone

**Table 4.:** Csengele 12/14/A/2 Indices of the Árpád-Period dog skull measurements**4. táblázat:** Csengele 12/14/A/2. Árpád-kori kutyák koponyaméret indexei

	Feature no. 98	Feature no. 99/I	Feature no. 113	Feature no. 136/I
Zy-Zy/ P-Op	-	-	50.57	-
Ect-Ect/ P-Op	28.08	30.16	26.89	-
fs-fs/ P-Op	24.157	24.02	20.23	-
eu-eu/P-Op	31.55	31.84	30.05	-
L-Br/ Op-N	22.1	32.7	20.3	-
P-N/ Zmi-Zmi	1.3	-	1.47	-
Pm/M	2.78	2.09	2.7	2.73



**Fig. 6.:** Csengele 12/14/A/2 Mandibles of the dogs from the Árpád Period 1: oven no. 38 (feature no. 112) 2: feature no. 98, 3: feature no. 99/I dog, 4: feature no. 113, 5: feature no. 136/I dog

**6. ábra:** Csengele 12/14/A/2. Árpád-kori kutyák mandibulái. 1: 112. objektum/38. tűzhely/ I. egyed, 2: 98. objektum, 3: 99. obj./I. egyed, 4: 113. obj., 5: 136. obj. /I. egyed

The mandible is long, thin has a low corpus, the lower line of the corpus is straight. The incisura vasorum arches up, short, deep, ends into a medium strong processus articularis. The condylus is not too broad, the ramus is short (**Fig. 6/2.**). The dentition is regular.

The age of the individual is ca. 2 years old according to the ossification phases of articular surface of the vertebrae (Schmid 1972). The average withers height is 49.4 cm calculated from the greatest lengths of 7 long bones (Koudelka 1886). The measurements of the bones are shown in **Tables 5-15**. The long bones are straight and slender.

According to the morphological traits and the craniometric data of the skull the animal belonged to the morphological group of *Canis familiaris intermedius* (Woldrich 1878). The skull measurements and indices are shown in the **Tables 2, 3 and 4**.

#### Individual no. II:

28 pieces of mostly fragmented bones yielded from the skeleton (the anatomical distribution of the bones is shown in **Table 1.**).

Head: C sup. dext + I1 + 3db I inf.

maxilla fragment

Trunk: 1 vertebra fragment, 4 costa, 3 sternebra

Limbs: ulna dext. fragment, 5 os carpal, femur dist. epiphysis fragment, patella sin-dext., 1 metapodial fragment, 2 os tarsale, 5 phalanx I., 2 phalanx II.

The age of the individual is ca. 1.5 years according to the ossification phases of epiphyses of the long bones (Schmid 1972). The measurements of the distal epiphysis of the femur are shown in **Table 11**.

#### Pit no. 113

The feature was in the E part of an oval pit which was placed perpendicular to the middle roundel (26th). The head was directed to S-SW (Horváth 2001, page 142, Fig 53/2) (**Fig. 2/2.**).

The skull is long, narrow, thick-walled. The parietals oblong, concave, the interparietale is very short, sharp crista sagittalis extrema rises on it, bending behind the plane of the occipital.

The occipital is straight walled, short, triangle shape, the foramen magnum is broad, lump is observable above it. The frontals are broad, the front halves protrude, then meet in an aboral sulcus along the suture. The processus zygomaticus is pointed, the canthi are expressed. The linea temporales rise and close in arc at the bregma. The nose slightly convex, the bridge (stop) is observable, not expressed, middle-standing. The viscerocranium is narrow (**Figs. 4-5/3**).

The mandible is long, thick, the corpus is very short, the ventral edge of the corpus is straight. The incisura vasorum arches deeply, ends into a hooked, strong processus angularis (**Fig. 6/4.**).

Dentition: I1-3 + C sup. + P2-4 + M1-2 sin-dext.

I1-3 + C inf. + P1-4 + M1-2 sin-dext.

The surfaces of the teeth are worn, there is no enamel on the upper quarter of their crown. The aboral cusp of the M1 is worn deeply, forming an integrated surface with the M2. On the basis of toothwear, the age of the individual is determined adultus/maturus.

The withers height is 56.9 cm calculated from the interior length of the cranial cavity (Wyrost & Kucharczyk 1967).

According to the morphological traits of the skull and craniometric data, the animal belonged to the morphological group of *Canis familiaris intermedius* (Woldrich 1878). The skull measurements and indices are shown in the **Tables 2, 3 and 4**.





**Fig. 7.:** Csengele 12/14/A/2 Humerus 1: oven no. 38, 2: feature no. 98, 3: feature no. 99/I dog

**7. ábra:** Csengele 12/14/A/2. Humerusok 1: 38. tűzhely 2: 98. objektum 3: 99. objektum / I. egyed

#### Feature no. 136

This feature was located in the N-NE section of the outer roundel (25th). It contained the remains of three individuals: a nearly complete skeleton of individual no. I and bones from two additional dogs.

#### Individual no. I:

The skeleton of this dog lay on its left side, the head directed to S. The spine was broken after the cervical vertebrae. The skull and cervical vertebrae were placed further away from the rest of the trunk. The hind limbs slipped next to each other, only the left side front leg remained in place (Horváth 2001, 144, Fig 54/2) (**Fig. 3/2.**). The skull was burnt. The pit contained 126 bone fragments of the dog (the anatomical distribution of these bones is shown in **Table 1.**).

Head: skull (P4 + M1-2 sin., P4 + M1-2 dext.)

mandibula pair (P3-4 + M1 + M3 sin., P 3-4 + M1 + M3 dext.)

Trunk: 5 v. cervicalis, 9 v. thoracalis, 6 v. lumbalis, sacrum (3), 1 v. caudalis, 18 costa, 3 sternebra

Limbs: scapula sin-dext., radius sin., ulna sin., 4 os carpale, metacarpus II-V. sin-dext., pelvis sin-dext., femur sin-dext., tibia sin-dext., astragalus sin-dext., calcaneus sin-dext., metatarsus II-V. sin., II; III; V. dext., 13 phalanx I., 15 phalanx II., 9 phalanx III., 1 os sesamoideum (Figs 8/3, 10/2, 11/3).



**Fig. 8.:** Csengele 12/14/A/2 Radius 1: oven no. 38, 2: feature no. 98, 3: feature no. 136/I dog, 4: feature no. 99/I dog, 5: feature no. 136/II dog

**8. ábra:** Csengele 12/14/A/2. Radiusok 1:38. tűzhely (112. objektum), 2: 98. objektum, 3: 136. objektum /I. egyed, 4: 99. objektum /I. egyed, 5: 136. objektum / II. egyed



**Fig. 9.:** Csengele 12/14/A/2 Ulna 1: oven no. 38, 2: feature no. 98

**9. ábra:** Csengele 12/14/A/2. Ulnák 1: 38. tűzhely, 2: 98. objektum



**Fig. 10.:** Csengele 12/14/A/2 Femur 1: feature no. 99/I dog, 2: feature no.136/I dog

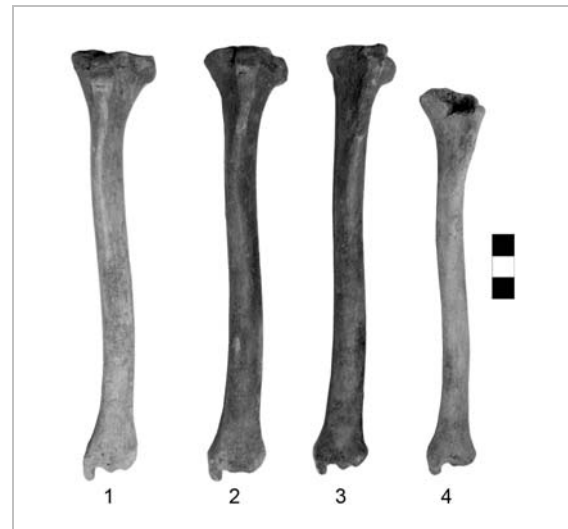
**10. ábra:** Csengele 12/14/A/2. Femurok 1: 99. objektum /I. egyed, 2: 136. objektum /I. egyed

The skull is long, thick-walled. The neurocranium is broad the parietals are concave, the interparietal medium long, an expressed crista sagittalis externa rises on it, slightly bending behind the plane of the occipital. The occipital is pointed, triangle shape, the foramen magnum is depressed lengthwise. The frontals are fragmented, slightly narrow, the front halves are flat and end in a short, rounded processus zygomaticus. The smooth crista frontalis closed at the bregma.

The mandible is elongated, medium low, thin, the ventral edge of the corpus is slightly curved. The incisura vasorum is shallow, ends into a strong processus articularis (**Fig. 6/5.**). The dentition is regular.

Estimated from the epiphyseal fusion of long bones, the age of the individual was between 1.5-2 years (Schmid 1972). The average withers height is 53.7 cm calculated from the greatest lengths of seven long bones (Koudelka 1886). The original bone measurements are shown in **Tables 5-15.**

According to the craniomorphological traits and its measurements, the skull of the animal belonged to the group of *Canis familiaris intermedius* (Woldřich 1878). The skull measurements and indices are listed in **Tables 2, 3 and 4.**



**Fig. 11.:** Csengele 12/14/A/2 Tibia 1: feature no. 98, 2: feature no. 99 II dog, 3: feature no. 136/I dog, 4: feature no. 136/III dog

**11. ábra:** Csengele 12/14/A/2. Tibiák. 1: 98. objektum, 2: 136. objektum /I. egyed, 3: 136. objektum /III. egyed, 4: 99. objektum/I. egyed

#### **Individual no. II:**

1 radius sin. of an adult individual, 1 pelvis fragment (**Fig. 8/5.**)

The withers height is 44.2 cm estimated from the greatest length of the radius (Koudelka 1886). Bone measurements are shown in **Table 9.** This was a small individual with slender bones.

#### **Individual no. III:**

tibia sin. of an adult individual (**Fig. 11/4.**)

The withers height is 54.2 cm estimated from the greatest length of the tibia (Koudelka 1886). The measurements of the bone are shown in Table 12.

This was a medium-size individual with slender bones.

Three of the dogs from Csengele (feature no. 99/I, feature no. 113, feature no. 136/ I) of belonged to the morphological group of *Canis familiaris intermedius* (Woldřich 1878) according to the morphometric traits of the skull. The fourth dog (feature 98/I) belonged to the craniomorphological group of *Canis familiaris matris opitimae* (Jeitneles 1877) which also includes shepherd dogs.

**Tables 5-15.:** Csengele 12/14/A/2 Bone measurements and withers heights of the Árpád-Period dogs (mm) (measurements Driesch 1976)

**5-15. táblázatok:** Csengele 12/14/A/2. Árpád-kori kutyák csontméretei és azokból számolt marmagasság értékek (mm) (mérétek Driesch 1976)

**Table 5. / 5. táblázat:** Atlas

	length	width	arcus length	cranial art. surf. width	caudal art. surf. width
Feature no. 98	36	74	14.5	42	32
Feature no. 99/ I	31	-	14	32*	37
Feature no. 136/I	36	77	15	41.5	31

**Table 6. / 6. táblázat:** Axis

	length	width	arcus length	cranial art. surf. width	caudal art. surf. width	proc. dens width/length
Feature no. 98	63	38	51	29	31	10:14
Feature no. 99/ I	44	-	48.5	28	24	5.5:12.5
Feature no. 136/I	60	37	50	29	29	8.5:13.5

**Table 7. / 7. táblázat:** Scapula

	length	collum width	angulus art. width	fac. art. width/depth	withers height
Oven no. 38/II	128*	24	30	27:18	519.68
Feature no. 98	133	25.5	31	27.5:17	539
Feature no. 99/ I	117.5	-	-	:-16	477.05
Feature no. 136/I	138	24.5	28.5	24:18.5	560.28

**Table 8. / 8. táblázat:** Humerus

	1.	2.	3.	4.	5.	6.	7.	8.
Oven no. 38/II	176.5	31	11	33	42	12	27	594.80
Feature no. 98	169.5	30.5	13	34.5	43	15	27	571.21
Feature no. 99/ I	150	28.5	11	28.5	38	11	23	505.5

1. greatest length, 2. greatest width of the proximal epiphysis, 3. smallest width of the diaphysis, 4. greatest width of distal epiphysis, 5. greatest depth of the proximal epiphysis, 6. smallest depth of the diaphysis, 7. greatest depth of the distal epiphysis, 8. withers height

**Table 9. / 9. táblázat:** Radius

	1.	2.	3.	4.	5.	6.	7.	8.
Oven no. 38/II	183	18	12	25	13.5	6	19	589.26
Feature no. 98	169	20	13	25.5	13	7	14	544.18
Feature no. 99/ I	152	16	11	22	10	5	12	489.44
Feature no. 136/I	164	20	14	26	13	7	14.5	528.08
Feature no. 136/II	137.5	15.5	10.5	21.5	10	5	12	442.75

1-8. see Table 8.

**Table 10. / 10. táblázat: Ulna**

	length	proc.cor. width	proc. depth	anc.	smallest depth	withers height
Oven no. 38/II	211	18.5	25		20	563.37
Feature no. 98	-	18	27		23	-
Feature no. 136/I	192.5	17	25.5		22	512.64

**Table 11. / 11. táblázat: Femur**

	1.	2.	3.	4.	5.	6.	7.	8.
Feature no. 99/ I	165	35	11	29	19	11	31	496.65
Feature no. 99/ II	-	-	-	28	-	-	31	-
Feature no. 136/I	181	40.5	13.5	33	24	14	40	544.81

1. greatest length, 2. greatest width of the proximal epiphysis, 3. smallest width of the diaphysis, 4. greatest width of distal epiphysis, 5. greatest depth of the proximal epiphysis, 6. smallest depth of the diaphysis, 7. greatest depth of the distal epiphysis, 8. withers height

**Table 12. / 12. táblázat: Tibia**

	1.	2.	3.	4.	5.	6.	7.	8.
Feature no. 98	185	36	14	22.5	38	11	17	540.2
Feature no. 99/ I	169	29	11	21	31	10	14.5	493.48
Feature no. 136/I	185	38	13.5	26	37	12	18	540.2
Feature no. 136/III	185.5	32	12	22	36	12.5	16	541.66

1-8. see Table 11.

**Table 13. / 13. táblázat: Astragalus**

	length	width	depth
Feature no. 98	29	21	16.5
Feature no. 99/ I	25	17	12
Feature no. 136/I	30	23	15.5

**Table 14. / 14. táblázat: Calcaneus**

	length	width	depth
Feature no. 98	45	18.5	21
Feature no. 99/ I	39	15.5	20
Feature no. 136/I	44	18	21

**Table 15. / 15. táblázat: Metacarpus, Metatarsus, Phalanx I. length/pieces / hosszúságméreték**

Metacarpus	II.	III.	IV.	V.
Oven no. 38/II	61.5	69	70	59
Feature no. 98		70	69	61
Feature no. 99/ I	54	66	66	55
Feature no. 136/I	60	67	67	58

**Table 15. / 15. táblázat:** Metacarpus, Metatarsus, Phalanx I. length/hosszúságméreték (cont./ folyt.)

Metatarsus	II.	III.	IV.	V.		
Feature no. 98	67.5	75	77	67		
Feature no. 99/ I		73	71	63		
Feature no. 136/I	66	74	74.5	65		
Phalanx I.	length/	length/	length/	length/	length/	length/
Oven no. 38/II	23/1	18.5/1				
Feature no. 98	25/1	24/3	22/1	20/2	19/2	18.5/1
Feature no. 99/ I	26/1	25/1	24.5/1	20/3	18/3	
Feature no. 99/ II	23/1	22/1	17.5/1	17/1		
Feature no. 136/I	24.5/4	24/2	23/2	21.5/1	20/2	19.5/3

The withers heights of Cumanian dogs from Csengele varied between 44.3 and 58.9 cm, which is indicative of medium-small and medium height animals (**Table 16.**). These values belong to the lower and the middle values of the withers heights of the dogs found at 10th-13th centuries. The extremes of withers heights of such Árpád-Period dogs range between 45 and 80 cm, averaging 59.37 cm (Tassi 2002, page 19). According to their withers heights these dogs can be well classified into two groups: smaller dogs whose withers heights fall between 45 and 59.9 cm, and larger dogs with withers heights falling between 60 and 79.9 cm. The previous group of medium-small and medium body size dogs includes the hound-type breeds, the latter group of medium and large body size dogs incorporates different types of shepherd dogs and greyhounds (categories of body sizes in Bárány & Vörös 2008, Table 9). Large amount of dog-skull and skeleton finds are known from the 10th-13th centuries from Hungary. **Table 17.** contains the dog remains found in houses, ovens, pits or ditches.

Large-, medium-, small-body size and in one case, remains of a burrow hunting dog were found at the late medieval Cumanian settlement Szentkirály (Takács 1990, page 108, Nyerges 2004, page 268, Kőrösi 2006, page 374). Based on the identification

by István Takács, András Pálóczi Horváth published a skull of a dog whose withers height was estimated 61 cm (Pálóczi 1989, Fig. 69)

Dogs played a remarkable role in the religious life of the Cumanians. Buried dog individuals or only particular dog body-parts could have been sacrificial animals. Known custom of the Cumanians is to swear on dog, whereby the contracting parties strengthened their oath with a dog halved by a sword. The covenant, between 1228 and 1251 of emperor Baduin the 2<sup>nd</sup> and the Cumanians (the text of Jean de Joinville is published by Ipolyi 1854, Kállay 1864, Eckhardt 1938) and the 1254 marriage of István the 5th (son of King Béla the 4th) and Erzsébet “the Cumanian” (Pauler 1899) are examples for this.

In his book Ferenc Horváth raises the possibility of a connection between the dog remains from Csengele and the aforementioned cult events (Horváth 2001, page 143). The osteological examination of the Csengele dogs, however, does not support this presumption as complete skeletons were found in most of cases. There were no cut marks on any of the bones, and the location of the body parts did not show that they would have been deposited separately. All features containing skeletons (nr 98, no. 99, no. 136) were located on the line of the outer roundel (25th).

**Table 16.:** Csengele 12/14/A/2 Age and withers heights of the Árpád-Period dogs (cm)**16. táblázat:** Csengele 12/14/A/2. Árpád-kori kutyák életkora és marmagasság-értékei (cm)

Individual	Oven no. 38/II	Feature no. 98	Feature no. 99/ I	Feature no. 113	Feature no. 136/I	Feature no. 136/II	Feature no. 136/III
Age	8 months - 1 year	1.5 - 2 years	2 years	adultus	1.5-2 years	adultus	adultus
Withers height	58.9	54.9	49.4	56.9	53.7	44.3	54.2

**Table 17.:** Dog remains from the 10-13th centuries Hungary found in houses, ovens, pits or ditches (from Vörös 1990)

**17. táblázat:** A X-XIII. századi magyarországi házba, kemencébe, gödörbe illetve árokba helyezett kutyaaletek. (Vörös 1990 alapján)

	house, oven	pit	ditch
Bóly (Baranya c.) (Mohácsi street S side) 12th c.	complete skeleton (oven no. 4th)		
Csátalja- Vágothegy (Bács- Kiskun c.) 10-12th c.	maxilla frag. (E outer oven) mandible frag. (house no. 1)		
Csengele (Csongrád c.) 12-13th c.	partial skeleton (feature no. 112, N house, oven no. 38)	head (pi no. 113)	partial skeleton, skeleton (feature no. 98, 99, 136)
Doboz- Hajdúirtás (Békés c.) 10-11th c.			head (7/a ditch) skull (VIIth segm.)
Esztergom- Szentgyörgymező (Komárom-Esztergom c.) 10-11th c.	head (house no. XIII/1)	head (pit no. XIV/c and pit no. XIX/E)	
Fenekpuszta (Zala c.) 10(?) -12th c.	skeleton (house, SE corner)		
Jánosszállás- Katonapart (Csongrád c.) 11-12th c.		complete skeleton (pit no. 23)	
Kardoskút- Hatablak (Békés c.) 12th c.		partial skeleton (house EW corner, pit "b")	partial skeleton
Sály- Lator (Borsod-Abaúj-Zemplén c.) 10-11th c.	skull (house no. 1)	complete skeleton (segm. no. II, pit no. 20)	
Tiszaeszlár- Bashalom (Szabolcs-Szatmár-Bereg c.) 11-13th c.		skeleton (in the line of pit no. 48)	
Tiszalök-Rázom (Szabolcs-Szatmár-Bereg c.) 11-13th c.	head (house no. 10/8, house no. 11/B, next to house no. 4) mandible (house no. M/I, house no. 12, next to house no. 3) limb-bones (oven no. 2)		

The heads of the dogs were not found in abnormal positions, their bones were complete without any cut marks, the orientations of bodies were not

systematic. Pit no. 113, which contained only a dog head (skull + mandibles) located in the eastern part of an oval pit was perpendicular to the middle



roundel (26th). This roundel was the only one renovated after the Mongol Invasion, and it is possible that it marked border around the cemetery that belonged to the church (Horváth 2001, page 87). The separate dog's head did not belong to any of the skeletons, because those represented individuals of at most two years of age while the skull originated from an old individual.

As said above the ritual role of the dogs from Csengele is not proven. According to **Table 17.**, partial or complete dog skeletons, head or skull of a dog originating from settlements, are not unique phenomena in this period and could not be connected solely to the Cumanian tradition. The absence of cut-marks on the bones shows that the meat of the animals was not eaten. Although their remains were placed mostly in the ditches surrounding the church and the two houses, their settlement-near "burial" could mean some kind of a (rational/emotional) bonding attached to the animals. This could be strengthened by the fact, that all dogs from Csengele, with only one exception (38/II), were 1.5 years old or older, one of them (in feature no. 113) was an old individual. According to the body size and physical features of the dogs, they could be guard and herding dogs. Their function is justified by the large animal keeping, mobile lifestyle of the Cumans..

### Acknowledgements

I would like to thank for István Vörös for allowing me to process the dog-material from Csengele, and for his precious help in the writing of the paper.

### References

BÁRÁNY A., VÖRÖS I. (2008): A balácai római kori villagazdaság főépületének (I.) állatsontleletei. Die Knochenfunde im Hauptgebäude (I.) des römischen Gusthofes Baláca. Veszprém, *Balácai közlemények* **X**. 200–234.

DRIESCH, A. von den (1976): A guide to the measurement of animal bones from archeological sites. *Peabody Museum Bulletin* Harvard, Massachusetts, **1** 1–148

ECKHARDT, S. (1938): Kun analógiák a magyar ősvallásban. *Magyar Nyelv* **34/7-8** 242–244.

EPSTEIN, H. (1971): *The Origin of the Domestic Mammals of Africa*. Leipzig. **Vol I**. 1–573.

HORVÁTH, F. (2001): *Csengelei kunok ura és népe*. Archeolingua, Budapest. 1–356.

IPOLYI, A. (1854): *Magyar mythologia*. Pest, 1854. 1–600.

KÁLLAY, F. (1861) *A pogány magyarok vallása*. Pest, 1–331.

KOUDELKA, F. (1886): Das Verhältniss der Ossa longa zur Skeletthöhe bei den Säugerthieren. Verhandlungen des naturforschenden Vereines in Brünn **24/1** (1885) 127–153.

KŐRÖSI, A. (2006): Szentkirály (Bács- Kiskun megye) késő középkori falu 2. gödörőljának állatsontleletei. Animal Bone Finds from the Pit-Stall Nr. 2 in the Late Medieval Village of Szentkirály (Bács-Kiskun county). *Studia Caroliensia*. **3-4** 353–381.

NYERGES, É. Á. (2004): A középkori Szentkirály állattartása az állatsontleletek és történelmi-környezeti adottságok függvényében. In: Az Alföld gazdálkodása, Állattenyésztés. Szerk.: Novák László Ferenc DSc., Nagykörs., *Arany János Múzeum közleményei* **X** 249–272.

PAULER, Gy. (1899): *A magyar nemzet története az Árpádházi királyok alatt*. Budapest, **II**. 1–695.

PÁLÓCZI HORVÁTH, A. (1989): *Besenyők, kunok, jászok*. Budapest, Corvina Kiadó 1–124.

SCHMID, E. (1972): Atlas of Animal Bones. For Prehistorians, Archaeologists and Quaternary Geologists. Elsevier Publishing Company, Amsterdam-London-New York. 1–75.

TAKÁCS I. (1990): Szentkirály középkori falu zoológiai leletei (4-4/a ház- gödöről). Zoological Finds From the Medieval Village of Szentkirály (Animal keeping pit by House 4-4/a). *Magyar Mezőgazdasági Múzeum Közleményei* (1988-1989.) 95–110.

TASSI, M. (2002): Kutya a középkori Magyarországon. ELTE Magyar Középkori és Újkori Régészeti Tanszék. Szakdolgozat, Budapest, 1–47.

VÖRÖS, I. (1990): Kutyaáldozatok és temetések a középkori Magyarországon I. Dog Sacrifices and Burials in Medieval Hungary I. *Folia Archaeologica* **XLI** 117–145.

WYROST, P., KUCHARCZYK, J. (1967): Versuch der Bestimmung der Widerristhöhe des Hundes mittels der inneren Hirnhöhlenlänge. *Acta Theriologica Białowieża* **12/9** 105–110.

## Csengelei kun kutyák

Bárány Annamária

### Összefoglalás

Csengele-Bogárhát 12/14/A/2. lelőhely (Csongrád megye) kun település (XIII. sz.) feltárása során előkerült csontmaradványok összesen 9 egyedről származnak. A 112. objektum 38. tűzhelyén egy kifejlett egyed mandibulája és egy 8 hónap- 1 év közötti, 58,9 cm marmagasságú kutya részleges csontváza feküdt **(2/1. ábra)**. 6 kutya maradványait egy templom körüli hármaskörös árokrendszer **(1. ábra)** külső (25. árok) árka tartalmazta (98., 99., 136. objektumok). A 98. objektumban egy 1,5- 2 éves, 54,9 cm marmagasságú egyed részleges csontváza volt **(2/3. ábra)**. A 99. objektumból egy 2 éves, 49,4 cm-es marmagasságú egyed csontváza **(3/1. ábra)** és egy 1,5 éves egyed töredékes csontjai kerültek elő. A 136. objektum egy 1,5-2 éves, 53,7 cm marmagasságú kutya csontvázát **(3/2. ábra)**, egy 1,5 évnél idősebb, 44,3 cm marmagasságú egyed csontjait és egy szintén 1,5 évnél idősebb, 54,2 cm marmagasságú egyed tibiáját tartalmazta.

Az árokrendszer középső (26.) árkára ásott gödörben (113. objektum) egy idős, 56,9 cm

marmagasságú kutya feje (koponya + mandibula) volt **(2/2. ábra)**.

Az Árpád kori kutyák marmagasságainak szélső értékei 45 cm és 80 cm között, átlag 59,37 cm volt (Tassi 2002 19. oldal). Marmagasságuk alapján a kutyák jól körülhatárolhatóan két csoportra különültek el: a kisebb méretű ebek marmagassága 45 cm és 59,9 cm között, a második csoportot képviselő nagyobb kutyák marmagassága 60 cm és 79,9 cm közötti volt. Az előbbieket csoportjába tartoztak a kopófélek, az utóbbiak a különböző típusú juhászkutyák és agarak voltak.

A csengelei kutyák marmagasságuk alapján az első csoportba tartoztak. Craniológiai jellemzőik alapján 3 egyed (a 99. objektum/I. egyed, 113. objektum, 136. objektum / I. egyed) a kopóféleket is magába foglaló *Canis familiaris intermedius* (Woldrich 1878) alakkörbe tartozott. A negyedik kutya (98. objektum / I. egyed), mely a többiekénél némileg vastagabb hosszúcsontokkal rendelkezett, a juhászkutyákat is felölelő *Canis familiaris matris optimae* (Jeitneles 1877) alakkörbe tartozott. Az egyedek koponyái a **4-5. ábrán**, mandibuláik a **6. ábrán** láthatóak.

