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Anthropological analysis of the Avar Period cemetery of Kereki-Homokbánya (Kereki Sand-pit)

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Abstract – Anthropological remains of 155 individuals dug up from the 151 graves of the Avar Period cemetery of Kereki-Homokbánya were examined. A general anthropological characterization of the series, secondary taxonomical analysis are given. By its skulls this population was long headed, with medium high and high skulls (dolichocran, orthocran, akrocran). The forehead was medium wide (metriometop). Their cranial capacitiy was medium large-large (euencephal, aristencephal) because of their long, high skulls. Face, upper face and nose were medium wide (mesen, mesoprosop, mesorrhin). Orbital cavities were medium high, short (mesoconch, chamaeconch). Ovoid and pentagonoid were the most frequent cranial shapes, napes were mostly arched. The average stature of women was 156.6 cm, that of men was 164.9 cm. Taxonomically the skulls could be deduced from the mix up of three long braincased, Europid races. Elements of the Nordic, the Cromagnoid, and the Mediterranean races were mixed in them – presumably for several generations. The Nordic type did dominate, it could be found on more than half of all the skulls. "Clear" types occurred only in sporadic cases. The origins of those short and wide braincased features could not be identified, which presented themselves in this otherwise expressly unified taxonomical image. With 11 tables and 3 figures.

Key words – Physical anthropology, human skeletal remains, anthropological characterization, Avar Period.

INTRODUCTION

On the 21 of May, 1987, labourers uncovered human and horse bones, as well as a stirrup and some bronze belt fittings (Fig. 1) while digging up sand in the sand-pit of Új Kalász Cooperative Farm of the village Kereki (Somogy county). A rescue excavation was immediately started, and the leading archeologist concluded that the finds were brought up from a disturbed Avar Period cemetery (KÖLTŐ 1988). A total of 146 graves were dug up in four groups and the cemetery could be dated to the 8th Century. The southern section of the second group were left undisturbed, the larger part of the northern group was devastated by some earlier sand production activities.

"Beside the mounted burial uncovered in earth moving a self-contained horse grave was dug up (Grave No. 11), and a double burial was uncovered (Grave No. 13) with the skeletons of a griffin belted man and a richly bejewelled woman... The belts bore a lot of archaic features in some cases, and a markedly late type of earing was found in the same group of finds,, Women's jewellery could be characterized by the large sized ringed earing with filigree work and pulled up sheet-ball, five pairs of which were uncovered (with silver and gold plated bronze pairs among them),, these earings were connected by a bronze chain either in front, on the neck, or behind, on the nape. There were no weapons buried in these graves, and only two vessels were uncovered". The archeologist inferred a peaceful way of life of this community from this circumstance (KÖLTŐ 1988, 1991).

The anthropological material of the 155 individuals dug up was taken into the collection of the Hungarian Natural History Museum's Department of Anthropology under inventory numbers 94.1.1. to 94.1.155.. The argillacelous soil of the location did some wrong to the bones, therefore there was a large number of badly preserved, fragmented and incomplete skeletons.

Methods of examination

We worked with 23 sexual dimorphism bearing anatomical features for determining morphological sex (ÉRY *et al.* 1963, ÉRY 1992).

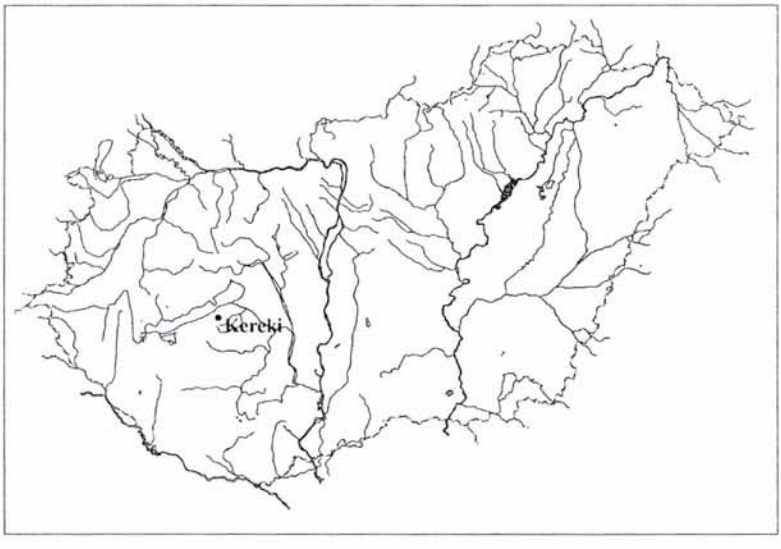

Fig. 1. Geographical location of Kereki village

Biological age was estimated by the following methods: For *Infans I* and *Infans II* age groups the number of teeth and their degree of development (SCHOUR & MASSLER 1944, UBELAKER 1989) and the length of limb bones (STLOUKAL & HANÁKOVÁ cit. ÉRY 1992) was examined. For the age group Juvenilis the degree of ossification (FEREMBACH *et al.* 1979) was considered. For adults we estimated biological age on the basis of the surface changes of os pubis facies symphyseosa (TODD 1920) and the grade of ossification of cranial sutures (NEMESKÉRI *et al.* 1960, MEINDL & LOVEJOY 1985). We have also taken into consideration the alterations of the sternal end of ribs (ISCAN *et al.* 1984), the progress of demineralization of inorganic matters in the roots of permanent teeth (LAMENDIN *et al.* 1992). The wear of permanent teeth was also utilized for the estimation of age according to age-groups (PERIZONIUS cit. ÉRY 1992, HUSZÁR & SCHRANZ 1952).

Measurements and indices were scored following the work of MARTIN and SALLER (1957). We registered 33 skull measurements and 42 long bone measurements by the technique proposed by them. We measured both left and right side extremities. We calculated 13 cranial indices and 15 long bone ones from the data obtained this way. We utilized SJØVOLD's (1990) method worked out for all racial circles and for both sexes, for the calculation of stature. Cranial capacity was calculated by the method of LEE & PEARSON (cit. ÉRY 1992). Cranial indices were classified according to the system proposed by ALEKSEEV and DEBETS (1964). The work of FARKAS (1972) was applied in taxonomical analysis. Pathological observations were taken macroscopically.

The computer program created by BREINER was used in cluster analysis (BREINER 1988, FÓTHI 1989). Series were compared to each other on the basis of the average of male skulls' ten Martin-measurements (Martin 1, 8, 9, 17, 45, 48, 51, 52, 54, 55). The data of the following cemeteries were drawn into comparison: Adorján-Országút (BARTUCZ & FARKAS 1957), Adorján-Tanya (BARTUCZ & FARKAS 1957), Alattyán-Tulát (WENGER 1957), Bácskatopolya (FARKAS & MARCSIK 1984), Csákberény (TÓTH 1962), Előszállás-Bajcsihegy (WENGER 1966), Érsekújvár (VLADAROVA & HANULIK cit. RÖSING & SCHWIDETZKY 1977), Fészerlak (FÓTHI 1988), Holiare (MALA cit. RÖSING & SCHWIDETZKY 1977), Homokmégy-Halom (LIPTÁK 1957), Jánoshida-Tótkérpuszta (WENGER 1953), Kassa-Zsebes (THURZO 1984), Kecel (LIPTÁK 1954), Kékesd (WENGER 1968), Keszthely-Város (WENGER 1977), Kiskőrös-Pohibuj Mackó (LIPTÁK 1956), Kiskőrös-Város (LIPTÁK 1983), Környe (TÓTH 1971), Kunszállás-Fülöpjakab (LIPTÁK & VARGA 1974), Leobersdorf (GREFEN-PETERS 1987), Madaras-Téglavető (LIPTÁK & MARCSIK 1976), Moravica (CZÉKUS 1985), Mosonszentjános (BARTUCZ 1929), Pókaszepetk (BOTTYÁN 1975), Solymár (FERENCZ 1983), Sükösd-Ságod (KŐHEGYI & MARCSIK 1971), Szebény (TÓTH 1961), Szeged-Kundomb (LIPTÁK & MARCSIK 1966), Szeged-Fehértó A. (LIPTÁK & VÁMOS 1966), Szekszárd-Palánk (LIPTÁK 1974), Szentes-Kaján (WENGER 1955), Tiszavárkony (LIPTÁK 1955*b*), Toponár (WENGER 1974), Üllő (LIPTÁK 1955*a*), Veszprém-Jutas (BARTUCZ 1930), Virt (HANAKOVA *et al.* 1970), Zelovce (HANAKOVA & STLOUKAL 1974), Zwölfaxing (SZILVÁSSY 1980).

RESULTS

Characteristics of sexual expressedness

The average of anatomical features presenting sexual dimorphisms was +0.80 with men and –0.86 with women, so the palaeoanthropological material of the Kereki-Homokbánya population bore a significant sexual dimorphism.

The most marked masculinity was produced by glabella-arcus superciliaris (+1.15) and processus mastoideus (+1.15) from the characteristics observed on male skulls, while caput mandibulae (+0.37) and tuber frontale et parietale (+0.40) were turned out to be the least masculine. Caput femoris (+1.53) and sulcus praeauricularis (+1.23) proved to be most masculine from postcranial bones, and ischio-pubis indexr (–0.20) the least masculine one.

The most marked feminine character was found with protuberantia occipitalis externa (–1.80) and angulus mandibulae (–1.11) on female skulls, and the same could be stated for foramen obruratum (–1.50) and incisura ischiadica major (–1.31) on females' postcranial material. Caput mandibulae (–0.33) and corpus mandibulae (–0.43) presented the smallest degree of feminine character on women's skulls, and sacrum (–0.20) on their postcranial skeletons.

The largest differences, and therefore the most evident features when scoring sex, were presented by protuberantia occipitalis externa (2.23) and glabella-arcus superciliaris (2.12) on skulls. The most marked sexual differences were produced by caput femoris (2.68), sulcus praeauricularis (2.29), foramen obturatum (2.25), and incisura ischiadica major (2.17) on postcranial bones. (The data in brackets were the differences between men's and women's values).

When considering the availability of features for examination glabella-arcus superciliaris and trigonum mentale proved to be the most useful in the determination of sex on skulls, while caput femoris, linea aspera and incisura ischiadica major did the same on skeletons (Table 2).

Demographical analysis

We have already treated the palaeodemography of this population in an earlier article (BERNERT 1996). In this present treatise we mentioned only the most significant results of palaeodemographical analysis.

This population could be reconstructed as a community of 80–90 persons living in a small number of families according to the number of dead and the

Table 1. Distribution of sex in the groups

	Group 1	Group 2	Group 3	Group 4	Combined
Men	17	24	21	3	65
Women	8	24	19	3	54
Undefinable sex	1	1	1	1	4
Children	2	13	10	0	25
Total	28	62	51	7	148

time-span of the cemetery's usage. Serological examinations made it probable that the descendants of the population settling in the region, the "second generation" still stayed at this place, was born and buried at the site (LENGYEL 1989). However, the next generation has moved out of this location, of them only the young ones were buried in this cemetery. A plausible reason of this could be the population's inability to fit into the given habitat, and the recognition of this made them move to

Table 2. Degree of sexualization (20–x years of age)

	Sexing traits	Males			Females		
		M	N	Repr. (%)	M	N	Repr. (%)
1.	Tuber frontale et parietale	+0.40	42	68.85	–0.67	24	48.98
2.	Glabella, arcus superciliaris	+1.15	46	75.41	–0.97	32	65.31
3.	Processus mastoideus	+1.15	34	55.74	–0.69	26	53.06
4.	Protuberantia occipitalis externa	+0.43	14	22.95	–1.81	16	32.65
5.	Planum occipitale	+0.75	16	26.23	–0.92	13	26.53
6.	Margo supraorbitalis	+0.76	45	73.77	–0.78	27	55.10
7.	Arcus zygomaticus	+0.62	26	42.62	–0.75	12	24.49
8.	Facies zygomaticus	+1.03	33	54.10	–0.56	18	36.73
9.	Corpus mandibulae	+0.62	45	73.77	–0.43	30	61.22
10.	Trigonum mentale	+0.98	46	75.41	–0.65	26	53.06
11.	Angulus mandibulae	+0.74	34	55.74	–1.14	21	42.86
12.	Caput mandibulae	+0.37	30	49.18	–0.40	20	40.82
13.	Pelvis major	+0.12	17	27.87	–0.57	7	14.29
14.	Pelvis minor	+0.80	5	8.20	–0.67	3	6.12
15.	Angulus subpubicus	+0.33	6	9.84	–1.50	4	8.16
16.	Foramen obturatum	+0.75	8	13.11	–1.67	3	6.12
17.	Incisura ischiadica major	+0.86	29	47.54	–1.35	17	34.69
18.	Ischio-pubis index	–0.20	5	8.20	–1.33	3	6.12
19.	Cotilo-incisura index	+1.73	15	24.59	–0.20	15	30.61
20.	Sacrum	+1.00	12	19.67	–0.50	6	12.24
21.	Caput femoris	+1.53	30	49.18	–1.14	21	42.86
22.	Linea aspera	+1.17	46	75.41	–0.62	26	53.06
23.	Sulcus praeauricularis	+1.23	26	42.62	–1.06	17	34.69
	Mean	+0.80		43.48	–0.89		34.34

Table 3. Distribution of indices according to ALEKSEEV & DEBETS

Martin No.	Classification	Males			Females			Together	
			N	%		N	%	N	%
8:1	Hyperdolichocran	67.7–73.2	5	25	68.5–74.1	1	9	6	19
	Dolichocran	73.3–76.4	8	40	74.2–77.3	4	36	12	39
	Mesocran	76.5–79.9	4	20	77.4–80.8	2	18	6	19
	Brachykran	80.0–83.1	2	10	80.9–84.0	4	36	6	19
	Hyperbrachykran	83.2–88.7	1	5	84.1–89.7	0	0	1	3
	Total		20			11		31	
17 : 1	Hyperchamaekran	67.8–69.2	1	5	63.9–69.4	0	0	1	4
	Chamaekran	69.3–72.3	7	33	69.5–72.5	2	33	9	33
	Orthocran	72.4–75.6	5	24	72.6–75.8	4	67	9	33
	Hypsikran	75.7–78.7	7	33	75.9–78.9	0	0	7	26
	Hyperhypsikran	78.8–84.2	1	5	79.0–84.5	0	0	1	4
	Total		21			6		27	
20 : 1	Hyperchamaekran	55.0–59.4	3	16	55.2–59.6	1	11	4	14
	Chamaekran	59.5–61.8	4	21	59.7–62.0	3	33	7	25
	Orthocran	61.9–64.7	9	47	62.1–64.9	3	33	12	14
	Hypsikran	64.8–67.1	2	11	65.0–67.3	2	22	4	14
	Hyperhypsikran	67.2–71.6	1	5	67.4–71.8	0	0	1	4
	Total		19			9		28	
17 : 8	Tapeinocran	88.0–92.3	3	16	87.2–91.4	0	0	3	11
	Metriocran	92.4–97.0	5	26	91.5–96.1	2	25	7	26
	Akrocran	97.1–101.4	8	42	96.2–100.4	5	63	13	48
	Hyperakrocran	101.5–109.2	3	16	100.5–108.2	1	12	4	15
	Total		19			8		27	
20 : 8	Tapeinocran	75.9–78.9	5	28	75.2–78.2	2	17	7	23
	Metriocran	79.0–82.8	6	33	78.3–82.1	4	33	10	33
	Akrocran	82.9–85.9	4	22	82.2–85.2	4	33	8	27
	Hyperakrocran	86.0–91.8	3	17	85.3–91.0	2	17	5	17
	Total		18			12		30	
9 : 8	Hyperstenometop	57.0–62.7	1	4	57.3–63.0	1	8	2	6
	Stenometop	62.8–66.0	8	35	63.1–66.3	2	15	10	27
	Metriometop	66.1–69.6	7	31	66.4–69.9	5	38	12	33
	Eurymetop	69.7–72.9	6	26	70.0–73.2	4	31	10	27
	Hypereurymetop	73.0–78.7	1	4	73.3–79.0	1	8	2	6
	Total		23			13		36	

Table 3 (continued)

Martin No.	Classification	Males			Females			Together	
			N	%		N	%	N	%
47 : 45	Euryprosop	80.6–85.8	2	22	80.2–85.4	2	67	4	33
	Mesoprosop	85.9–91.6	5	56	85.5–91.1	1	33	6	50
	Leptoprosop	91.7–96.9	2	22	91.2–96.4	0	0	2	17
	Total		9			3		12	
48 : 45	Euryen	48.4–51.4	2	20	48.2–51.2	0	0	2	17
	Mesen	51.5–54.9	5	50	51.3–54.7	2	100	7	58
	Lepten	55.0–58.0	3	30	54.8–57.8	0	0	3	25
	Total		10			2		12	
52 : 51 Right	Hyperchamaeconch	65.1–73.8	4	16	67.4–76.4	3	30	7	21
	Chamaeconch	73.9–78.7	9	38	76.5–81.5	4	40	13	38
	Mesoconch	78.8–84.3	9	38	81.6–87.3	2	20	11	32
	Hypsiconch	84.4–89.2	2	8	87.4–92.4	1	10	3	9
	Total		24			10		34	
52 : 51 Left	Hyperchamaeconch	65.1–73.8	1	4	67.4–76.4	1	8	2	5
	Chamaeconch	73.9–78.7	7	28	76.5–81.5	4	33	11	30
	Mesoconch	78.8–84.3	13	52	81.6–87.3	6	50	19	51
	Hypsiconch	84.4–89.2	3	12	87.4–92.4	1	8	4	11
	Hyperhypsiconch	89.3–98.0	1	4	92.5–101.5	0	0	1	3
	Total		25			12		37	
54 : 55	Hyperleptorrhin	35.4–42.5	1	4	36.–43.3	0	0	1	3
	Leptorrhin	42.6–46.6	7	30	43.4–47.5	2	22	9	28
	Mesorrhin	46.7–51.1	10	44	47.6–52.1	3	33	13	41
	Chamaerrhin	51.2–55.2	5	22	52.2–56.3	3	33	8	25
	Hyperchamaerrhin	55.3–62.4	0	0	56.4–63.6	1	11	1	3
	Total		23			9		32	
61:60	Hyperdolichuran	93.2–105.4	0	0	92.6–104.7	1	14	1	5
	Dolichuran	105.5–112.7	6	46	104.8–112.0	1	14	7	35
	Mesuran	112.8–120.5	5	38	112.1–119.7	3	43	8	40
	Brachyuran	120.6–127.8	1	8	119.8–127.0	2	29	3	15
	Hyperbrachyuran	127.9–140.1	0	8	127.1–139.2	0	0	1	5
	Total		13			7		20	
63 : 62	Leptostaphylin	75.8–82.6	2	14	75.9–82.7	2	25	4	18
	Mesostaphylin	82.7–90.3	4	29	82.8–90.5	3	37	7	32
	Brachystaphylin	90.4–97.2	2	14	90.6–97.4	0	0	2	9

Table 3 (continued)

Martin No.	Classification	Males			Females			Together	
			N	%		N	%	N	%
	Hyperbrachystaphylin	97.3–109.6	6	43	97.5–109.8	3	37	9	41
	Total		14			8		22	
38	Oligencephal	1228–1337	4	24	1097–1195	1	13	5	20
	Euencephal	1338–1462	6	35	1196–1307	4	50	10	40
	Aristencephal	1463–1572	6	35	1308–1406	2	25	8	32
	Hyperaristencephal	1573–1770	1	6	1407–1582	1	13	2	8
	Total		17			8		25	

some more suitable territory. We arrived at this conclusion on the basis of the unusually low average age – mortality reached its peak in years 35–39, while it arrived in the age group 50–54 in a considerable number of Avar Period cemeteries – and stimulated by the extremely high child bearing related mortality rate of young women (almost 18 % in the age group 20–24 years). The unbalanced sexual distribution of this population (66 men opposed to 55 women) also indicated the working of some selection or migration effect. The analysis of blood-group data indicated a less than ideal genetical status for this population with the ratio of blood-group fenotypes calculated by the data of LENGYEL (1989). This later phenomenon was also an indicator of selection and/or migration in biology.

We found the average age estimated by us so extremely low, that we found it necessary to have a control examination carried out by a chemical method earlier not utilized in palaeoanthropology (CSAPÓ *et al.* 2000, 2001, CSAPÓ-KISS *et al.* 2001). This amino acid racemization based age evaluation method decidedly supported the age data produced by classic anthropological methods. We accepted this as a potent proof for the presence of biological reasons behind the low age at the time of death.

General description of the men and women series

Long and very long headed (dolichocran and hyperdolichocran) men made up almost two thirds of the population. The mean value was situated close to the upper limit of dolichocrany. Skulls were of medium height (orthocran) according to the percentage distribution of length-height index, with mean value around the middle region of ortocrany. High (akrocran) skulls were the most frequent on the basis of width-height index, but skulls of medium height (metriocran) were also present in a significant proportion, this mean value was situated on the border of metriocrany

and akrocrany. According to the transversal-frontoparietal index narrow (stenometop), medium width (metriometop) and wide (eurymetop) foreheads had almost the same incidence, with a mean value in the middle region of metriometopy. Medium large (euencephal) and large (aristencephal) cranial capacities were frequent, with the mean value in the upper third of euenkaphaly. Medium high (mesoprosop) faces and medium high (mesen) upper faces were the most frequent. Facial index and upper facial index produced a mesoprosop, or mesen mean value. Orbital cavities were of medium height (mesoconch). Nasal widths were varied, medium wide (mesorrhin) the most often. The nose turned out to be medium wide (mesorrhin) according to the mean value too (Tables 3–4).

When analysing morphological data we could state that almost half the skulls looked oval in top view. The profile of napes was arched in most cases. The upper row of teeth ususally had a paraboloid arch. Spina nasalis anterior was most often large. Nasal bones were sand-glass shaped (Martin 1) in the majority of cases. Glabella were well developed with more than half of the cases (Broca 4) (Table 5). The average stature of men turned out to be 165.7 cm (Table 6).

Utilizing the ALEKSEEV and DEBETS classification categories both long headed (dolichocran) and short headed (brachycran) individuals were frequent according to the cranial index among the women. Their mean value could be positioned on the lower limit of mesocrany. According to the distribution of length-height index skulls were most often medium high (orthocran) with the mean value in the lower third of orthocrany. High (akrocran) skulls turned out to be the most frequent on the basis of width-height index, the mean value was established on the lower limit of akrocrany. Medium (metriometop) foreheads turned out to be the most frequent according to transversal-frontoparietal index, the mean value fell in the middle of the metriometop region. Medium size cranial capacities (euencephal) were the most frequent, with the mean value at the upper limit of euencephaly. Face proved to be wide, medium wide (euryprosop, mesoprosop), upper face of medium height (mesen). Orbital cavities were low-medium (chamae-, mesoconch), low by the mean value as well. Nasal width was varied, medium (mesorrhin) on the basis of its mean value (Tables 3–4).

On the basis of the analysis of morphological data craniae's shape proved to be oval in top-view in half of the cases. The profile of napes was arched. The upper row of teeth generally had a paraboloid shape. Spina nasalis anterior was most often medium developed. Apertura pyriformis turned out to be anthropin in 71 % of cases. Nasal bones were hourglass-shaped in most of the cases (Martin 1). Glabella was minimally formed (Broca 1, Broca 2) (Table 5). The average stature of women was 155.1 cm (Table 6).

Table 4. Measurements and indices of skulls

	Males					Females				
Martin No.	N	M	Vmax	Vmin	S	N	M	Vmax	Vmin	S
1	24	182.6	193	171	6.3	13	174.5	187	164	6.2
5	20	101.5	110	94	5.1	8	94.4	102	88	5.2
8	24	138.8	149	130	5.4	15	134.3	148	124	6.6
9	30	93.6	102	86	5.1	17	92.0	98	85	3.7
10	29	115.4	123	109	4.0	12	113.8	122	107	4.4
11	21	122.8	138	114	5.5	11	116.5	126	110	5.2
12	22	110.5	123	97	6.2	11	107.4	119	101	6.0
17	22	135.5	144	120	6.3	9	128.4	133	125	2.7
20	21	113.7	122	104	5.1	13	109.7	113	103	2.7
23	19	518.2	547	495	14.9	10	499.2	530	479	17.1
38	17	1417	1595	1228	103.9	8	1290	1431	1163	87.6
40	19	93.9	101	82	5.6	6	85.5	89	81	3.6
43	25	102.8	112	94	4.7	10	98.9	106	92	4.3
45	14	132.6	140	127	3.9	3	124.3	130	119	5.5
46	20	94.1	104	76	6.0	11	89.7	93	82	3.3
47	17	115.8	125	104	7.0	6	103.8	111	99	5.0
48	21	69.8	76	64	3.8	9	64.8	71	60	3.1
51 right	24	40.3	45	37	1.8	10	39.1	42	35	2.0
51 left	25	39.3	43	36	1.9	12	38.6	41	35	1.8
52 right	26	31.5	35	28	1.6	11	31.4	34	30	16
52 left	26	31.7	35	29	1.6	13	31.9	34	30	1.5
54	24	24.5	28	21	1.9	9	24.2	28	21	2.2
55	28	50.9	55	44	2.7	12	46.4	51	42	2.8
60	19	53.9	60	49	3.9	7	50.4	55	46	3.2
61	17	60.9	70	44	6.3	8	58.5	63	54	3.0
62	20	44.4	49	39	3.2	8	42.5	46	38	2.9
63	16	41.2	46	33	3.8	10	38.3	42	35	2.8
65(1)	22	101.5	114	86	7.4	4	95.0	99	91	3.4
66	12	100.3	111	87	7.0	3	92.0	92	86	3.1
69	30	32.8	37	25	2.9	11	29.5	34	26	2.1

Table 4 (continued)

	Males					Females				
Martin No.	N	M	Vmax	Vmin	S	N	M	Vmax	Vmin	S
70 right	19	58.4	69	51	5.0	4	51.8	55	47	3.4
70 left	14	61.2	69	50	5.6	9	54.2	62	47	4.7
71 right	24	30.2	36	26	2.7	6	28.0	33	23	3.9
71 left	19	31.2	36	28	2.0	10	28.3	33	25	2.8
8:1	20	76.0	85.4	71.4	3.5	11	77.9	82.1	72.8	3.6
17:1	21	74.2	78.9	68.2	3.0	6	73.2	75.7	71.1	1.7
17:8	19	97.6	105.9	89.9	4.7	8	97.7	105.6	94.3	3.7
20:1	19	62.4	68.9	59.1	2.5	9	62.7	65.7	58.8	2.2
20:8	18	81.5	87.6	76.7	3.6	12	81.9	90.3	76.4	3.8
9:8	23	67.5	75.0	60.3	3.5	13	68.3	75.4	60.1	4.2
47:45	9	88.4	92.5	81.3	3.8	3	85.2	87.1	83.2	2.0
48:45	10	53.3	57.1	50.0	2.2	2	52.7	53.2	52.1	0.8
52:51 right	24	78.4	87.5	66.7	4.4	10	79.7	88.6	73.7	4.6
52:51 left	25	80.7	94.4	72.1	4.5	12	82.4	88.6	75.0	4.1
54:55	23	48.2	55.1	41.8	3.6	9	51.6	59.6	45.7	4.1
61:60	13	114.6	128.0	106.1	6.1	7	115.1	124.0	103.7	7.6
63:62	14	93.6	110.0	77.1	9.9	8	90.3	100.0	78.3	8.3

Table 5. Distribution of morphological characters

Characteristics		Males		Females		Together	
		N	%	N	%	N	%
Cranium, norma verticalis	Ellipsoid	2	8	0	0	2	5
	Ovoid	12	48	10	10	22	49
	Pentagonoid	6	24	8	40	14	31
	Sphenoid	4	16	0	0	4	9
	Birsoid	0	0	1	5	1	2
	Rhomboid	1	4	0	0	1	2
	Spheroid	0	0	1	5	1	2
Total		25		20		45	

Table 5 (continued)

Characteristics		Males		Females		Together	
		N	%	N	%	N	%
Occiput	Curvoccipital	18	78	13	76	31	77
	Bathrocran	4	18	3	18	7	18
	Planoccipital	1	4	1	6	2	5
Total		23		17		40	
Palatal curve	Parabolic	21	81	9	69	30	77
	Hyperbolic	5	19	3	23	8	20
	Elliptic	0	0	1	8	1	3
Total		26		13		39	
Spina nasalis anterior	Broca 1	0	0	3	22	3	9
	Broca 2	7	33	9	64	16	46
	Broca 3	9	43	2	14	11	31
	Broca 4	5	24	0	0	5	14
Total		21		14		35	
Apertura piriformis	Anthropin	16	59	15	71	31	65
	Fossa praenasalis	9	33	5	24	14	29
	Sulcus praenasalis	2	8	0	0	2	4
	Infantil	0	0	1	5	1	2
Total		27		21		48	
Shape of nasal bone	Martin 1	9	45	8	67	17	53
	Martin 1b	3	15	0	0	3	9
	Martin 2	1	5	2	17	3	9
	Martin 2b	0	0	0	0	0	0
	Martin 3	5	25	0	0	5	16
	Martin 3b	0	0	0	0	0	0
	Martin 4	2	10	1	8	3	9
	Martin 4b	0	0	1	8	1	3
Total		20		12		32	
Glabella	Broca 1	1	2	14	37	15	17
	Broca 2	1	2	15	39	16	18
	Broca 3	5	10	3	8	8	9
	Broca 4	26	52	5	13	31	35
	Broca 5	17	34	1	3	18	21
Total		50		38		88	

Descriptions of individual osteological materials are given in Table 8. Measurements could be taken only on 59 skulls out of those of 113 adults (Table 9). Long bones of the upper limbs were measurable with 58 individuals, those of the lower limbs were suitable for measuring with 56 ones (Table 10). Non-metric characteristics could be observed on 82 skulls (Table 11).

Results of pathological examinations

We observed the incidence of fractures on long bones. We found three healed fractures of the calvicula (adult man, Grave No. 25, mature man, Grave Nos 72 and 105), and one healed fracture of the radius (mature man, Grave No. 19A). All four fractures were located on the right side skeletal material. The right side collarbones of 34 men were examinable, the frequency of fractures on this bone was 8.8 % with men. The right side radius of 30 individuals was suitable for traumatological observations, and so the fracture of the nasal bone turned out to be 3.3 % among men.

Lesions of the medial end of clavicle due to physical efforts were frequent among alterations that could be considered pathological. Alterations of the bone structure brought about by loading of the sternoclavicular joint could be observed on one juvenile man (Grave No. 94), on four adult man (Grave Nos 3, 54, 93, and 129), and on one mature woman (Grave No. 44). In other words one third of the observable man bore this type of lesion, while the ratio of it was significantly lower, under 7%, with women. Physiological exostosis of ligamental and muscular insertion surfaces caused by physical exertion occured mostly on men's skeletons, both on upper and lower limbs. A portion of the cases bore this lesion only on the rightside. The forming of blocks and beaks on dorsal vertebrae was almost universal in the mature age group.

A peaceful way of life of the population could be read out of the comparatively low number of traumatic lesions. The high percentage of joint lesions indicated quite unhealthy living conditions. Men did heavy manual labour as indicated by the large number of accumulations of bony tissue on muscular insertion surfaces. The presumption of a hard, yet peaceful way of life tally with the almost complete lack of weapons from the gravegoods, and with the wide chronological spread of gravegoods (KÖLTŐ 1988, 1991).

The results of dental pathological examinations have already been presented (SZIKOSSY & BERNERT 1996). We managed to conclude that the dental status of the Kereki-Homokbánya population could be declared average when compared to other migration period and medieval series from the Carpathian Basin. Two well-known observations were significantly justifiable. The set of teeth deteriorate with the advance of age. The teeth of women were worse than those of men in the

Table 6. Measurements and indices of long bones

Martin		Males					Females				
No.	Side	N	Vmax	Vmin	M	S	N	Vmax	Vmin	M	S
Clavicula											
1	R	14	159	124	143.1	10.9	8	141	121	134.4	7.6
	L	11	167	126	147.6	12.1	7	141	120	131.3	7.5
6	R	31	44	28	37.6	3.5	15	40	26	32.5	4.2
	L	29	44	26	37.1	4.0	14	38	25	31.5	4.0
Humerus											
1	R	14	350	309	324.48	10.9	6	322	266	302.2	19.3
	L	12	345	301	320.0	11.6	4	305	297	301.8	3.4
2	R	13	344	302	318.8	10.5	7	318	264	298.4	17.0
	L	11	340	296	315.5	11.5	4	300	229	279.5	33.8
3	R	8	55	49	51.1	2.0	6	45	40	43.2	2.1
	L	7	53	45	49.7	2.8	4	45	41	43.5	1.7
4	R	12	70	60	64.0	3.3	6	57	50	54.0	2.8
	L	14	73	55	63.1	5.2	8	63	49	54.5	4.3
5	R	38	26	18	22.1	1.9	18	23	16	19.1	1.8
	L	37	26	17	21.4	1.9	17	21	16	18.7	1.6
6	R	38	20	14	17.3	1.3	18	17	13	14.8	1.3
	L	37	19	14	16.8	1.4	17	17	13	14.6	1.4
7	R	38	70	52	61.2	4.1	18	58	45	52.9	3.7
	L	37	69	50	60.1	4.1	17	59	43	51.6	4.5
7a	R	38	76	56	67.1	5.4	18	65	49	57.8	4.3
	L	36	76	54	64.9	5.2	17	66	48	56.6	5.0
9	R	12	47	38	44.4	2.6	10	43	34	38.6	2.5
	L	15	49	40	44.9	2.8	6	43	37	39.3	2.1
Radius											
1	R	17	270	222	244.7	11.9	4	232	202	215.3	12.9
	L	15	271	227	244.5	11.8	8	248	198	218.3	15.7
2	R	19	256	209	230.8	11.4	5	225	190	207.8	14.7
	L	15	256	214	230.7	11.1	10	234	186	205.8	13.4
3	R	28	49	34	41.5	3.9	10	38	27	32.7	3.9
	L	28	48	34	40.4	3.4	14	40	29	33.7	3.7
4	R	30	20	12	16.3	2.1	11	16	11	13.2	1.7
	L	30	19	13	15.8	1.7	14	16	11	14.1	1.8

Table 6 (continued)

Martin		Males					Females				
No.	Side	N	Vmax	Vmin	M	S	N	Vmax	Vmin	M	S
5	R	30	13	10	11.5	0.9	11	11	7	9.5	1.0
	L	30	14	10	11.6	1.0	14	11	9	10.0	0.9
Ulna											
1	R	7	294	248	266.3	15.6	3	249	233	241.3	8.0
	L	7	292	260	271.3	12.5	3	247	231	239.3	8.0
2	R	11	254	212	230.3	12.5	4	221	202	213.0	8.0
	L	11	252	216	232.3	11.0	5	236	198	214.8	13.9
3	R	20	44	30	37.0	3.1	6	35	26	29.7	3.4
	L	20	44	31	36.8	3.6	8	37	28	31.4	3.4
11	R	27	16	11	13.1	1.3	10	14	9	11.3	1.5
	L	30	16	11	13.3	1.4	11	14	9	10.9	1.7
12	R	27	20	13	16.8	1.4	10	17	11	14.0	2.2
	L	30	19	13	16.7	1.7	11	19	12	14.3	2.3
13	R	19	26	16	20.7	2.3	11	24	13	17.6	3.1
	L	25	24	17	20.8	1.9	9	23	13	17.9	2.6
14	R	19	27	20	23.6	2.2	11	24	18	20.5	1.9
	L	25	26	18	22.9	2.1	9	23	18	20.8	1.8
Femur											
1	R	24	477	396	442.3	18.6	9	438	374	405.8	20.9
	L	22	479	397	439.9	18.2	10	438	376	402.0	21.6
2	R	23	473	392	437.8	19.1	9	434	371	402.7	20.4
	L	21	473	395	436.9	18.2	10	432	374	398.7	21.1
6	R	35	34	24	28.4	2.5	18	30	20	24.2	2.6
	L	36	33	24	28.4	2.5	19	29	21	24.3	2.3
7	R	35	30	23	26.9	1.8	18	26	20	24.4	1.5
	L	36	31	24	27.8	1.7	19	28	21	24.8	1.5
8	R	35	100	78	87.7	6.0	18	90	66	77.4	5.8
	L	35	99	78	88.7	5.3	20	89	64	77.7	5.7
9	R	35	37	27	32.5	2.5	17	33	27	29.2	2.0
	L	36	40	26	32.5	2.8	19	33	25	28.8	2.2
10	R	35	30	22	25.2	2.1	17	29	19	22.1	2.5
	L	36	30	22	25.8	2.2	19	25	19	22.6	1.7
21	R	11	86	77	81.9	2.8	3	75	71	73.0	2.0
	L	11	86	76	81.6	3.2	3	73	70	71.0	1.7

Table 6 (continued)

Martin		Males					Females				
No.	Side	N	Vmax	Vmin	M	S	N	Vmax	Vmin	M	S
Tibia											
1	R	7	372	338	355.4	11.7	6	358	313	337.3	17.9
	L	11	406	335	362.7	21.6	2	342	340	341.0	1.4
1a	R	16	406	345	365.2	16.3	10	367	316	343.0	17.0
	L	18	410	340	366.2	18.3	5	363	317	338.0	20.3
1b	R	12	399	335	358.3	18.9	8	349	311	329.1	12.3
	L	14	402	330	357.6	19.8	4	339	310	324.5	15.6
2	R	18	383	321	342.3	16.3	12	348	293	318.0	18.3
	L	19	384	319	342.1	17.1	8	346	295	319.1	22.6
8	R	32	33	23	28.1	2.2	16	29	22	24.5	2.0
	L	35	36	25	28.5	2.5	16	29	21	24.3	2.4
8a	R	32	39	25	33.1	3.3	14	37	24	28.9	3.2
	L	35	41	27	33.1	3.1	15	33	21	27.9	2.9
9	R	32	27	17	20.7	2.3	16	22	16	18.3	1.5
	L	35	26	17	20.7	1.9	16	21	15	17.6	1.7
9a	R	32	29	18	23.4	2.5	15	26	16	20.4	2.4
	L	35	27	19	22.8	2.3	15	24	16	19.9	1.8
10	R	32	93	68	80.2	5.9	16	82	63	70.1	4.6
	L	34	97	70	80.3	6.0	16	81	58	68.9	5.3
10b	R	31	83	63	72.2	5.4	15	72	53	64.5	4.9
	L	32	84	62	72.1	5.3	15	72	53	63.6	4.5
Calcaneum											
1	R	14	85	71	80.0	4.1	7	78	67	72.0	3.7
	L	19	86	67	79.5	4.7	10	78	67	71.4	3.2
Clavicula											
6:1	R	13	31.9	21.3	26.2	3.1	7	29.2	23.2	26.1	2.4
	L	11	28.5	19.7	24.7	2.4	6	27.7	20.3	24.8	2.7
Humerus											
7:1	R	13	21.9	17.5	19.5	1.2	7	19.0	16.3	17.6	1.0
	L	11	20.4	16.5	19.0	1.1	5	18.9	14.9	17.0	1.7
6:5	R	37	87.0	66.7	78.5	4.5	19	88.9	66.7	78.2	5.8
	L	36	86.4	63.6	78.5	5.5	18	94.1	68.4	79.0	6.4

Table 6 (continued)

Martin		Males					Females				
No.	Side	N	Vmax	Vmin	M	S	N	Vmax	Vmin	M	S
Radius											
3:2	R	18	21.9	15.5	18.1	1.6	6	18.0	13.3	15.8	1.5
	L	14	19.0	15.3	17.5	1.3	11	18.3	15.6	16.7	0.9
5:4	R	29	84.6	55.6	71.1	6.4	12	83.3	56.3	72.9	8.1
	L	29	85.7	64.7	73.5	5.2	15	81.8	60.0	72.1	6.4
Brachialis											
r1:h2	R	11	79.7	75.2	77.7	1.4	3	78.9	76.5	77.3	1.4
	L	8	80.8	76.1	78.5	1.8	4	77.7	74.1	75.3	1.6
Ulna											
3:2	R	10	20.1	15.4	16.8	1.4	5	16.4	12.7	14.7	1.3
	L	10	17.4	14.3	15.9	0.9	6	16.1	12.8	14.7	1.3
11:12	R	26	93.8	68.4	79.1	6.2	11	91.7	64.7	79.7	7.9
	L	29	100.0	66.7	79.9	7.7	12	92.9	64.7	76.7	7.7
13:14	R	18	110.0	80.0	87.3	7.9	12	109.1	72.2	87.1	11.0
	L	24	105.3	72.0	91.1	7.8	10	104.5	72.2	87.4	10.0
Femur											
8:2	R	22	22.5	18.3	20.4	1.1	10	21.1	16.3	18.7	1.7
	L	20	22.4	18.7	20.6	1.0	11	22.4	16.9	19.2	1.6
6:7	R	34	124.0	88.9	105.6	7.9	19	115.4	87.5	99.3	8.3
	L	35	117.9	88.9	102.1	9.2	20	116.0	81.5	98.3	8.1
10:9	R	34	93.3	67.6	78.0	7.3	18	100.0	68.8	75.8	7.3
	L	35	96.8	65.0	80.1	9.2	20	96.0	64.5	78.5	7.6
Tibia											
10b:1	R	7	21.6	18.9	20.6	1.0	6	21.4	16.5	19.1	1.7
	L	10	22.0	19.7	20.6	0.6	3	21.1	17.3	18.8	2.0
9:8	R	31	87.5	62.1	73.8	6.4	17	82.6	66.7	74.3	5.5
	L	34	89.7	63.3	72.9	6.3	17	86.4	62.5	72.7	6.6
9a:8a	R	31	96.0	60.6	71.3	7.4	15	79.3	60.0	70.1	5.8
	L	34	83.9	59.4	69.3	5.9	16	100.0	61.5	71.2	8.6
Stature		28	177.1	155.9	165.7	5.0	16	163.6	146.5	155.1	5.5

R = right, L = left

same age group, in spite of all age groups containing a few men with extremely decayed teeth.

Taxonomical analysis

Twenty of the men's skulls were suitable for detailed taxonomical analysis. With one exception (Grave No. 143) the skulls could be put in the Europid major race.

There were 12 robust skulls, with markedly protruding nasal bones, large glabellae and powerful jaws as their common caharacteristics. The Nordic type was the most common among them, and it had a dominant appearance in three cases (Grave Nos 72, 110 and 130). The narrow kind of face was uncovered with moderately long and wide braincases in three cases, and therefore their cranial indices were mesocran (Grave Nos 104/B and 129), or brachycran (Grave No. 136). Two mesoprosop, mesen faces (Grave Nos 138, 145), and one mesoprosop, euryen face (Grave No. 39) were present with large absolute measurements and long braincases, these individuals could be deduced from the mixing of Nordic and Cromagnoid types. Three skulls had euryprosop, euryen facial indices. One of them was hyperdolichocran (Grave No. 41), another one had a short, yet very wide braincase, which made it brachycran (Grave No. 124). The third one was a mesocran skull, that could clearly be classified as coming under the Cromagnoid-A race (Grave No. 107).

Seven skulls were expressly gracile. Two of them were typical gracile Mediterraneans (Grave Nos 25 and 51), one skull was mesoprosop, mesen (Grave No. 19/A), four skulls possessed euryprosop, mesen facial indices (Graves Nos 93, 109, 113 and 132), and therefore these later ones presented a an intermediate form between races Mediterranean and Cromagnoid.

Six of the female skulls could be evaluated, and these bore a markedly mixed combination of elements from races Nordic, Mediterranean and Cromagnoid. The woman of Grave No. 112 was Nordic, but mesocran because of her moderately long, wide braincase. The woman of Grave No. 45 was of the Nordic-Cromagnoid-A type, the skull uncovered from Grave No. 59 could be put in the Cromagnoid-A race, both were dolichocran. The following three gracile skulls bore Mediterranean and Cromagnoid-A elements: that of Grave No. 111 was mesocran euryprosop, with a mesen facial index. The cranium from Grave No. 127 was hyperdolichocran, mesoprosop, euryen, the dolichocran one from Grave No. 133 was mesoprosop, with a mesen face.

The above mentioned men's and women's skulls presented a morphologically unified image. Nordic, Cromagnoid and Mediterranean racial elements were mixed in them to the degree when a "clear" type seldom occured. Many generations earlier an unidentifiable type with short and wide braincases was presumably melted into this population.

The male skull from Grave No. 143 must be separately treated, as it morphology was completely different from that of all the others. Determination of its sex was made a bit uncertain by some feminine features of the skull and by the bad preservation of the skeleton. The distance of the orbital cavities was very large, the nasal cavity was "blown up". Large absolute measurements were also characteristic for this cranium, with a long braincase, a face of medium width and with a wide upper face. Its orbital and nasal cavities were all very wide. Its probable taxonomical classification could be Ural-Cromagnoid-A. Because of the evident difference to all the other individuals we have not utilized the data of this skull among the summarized data of men.

Analysis of groups within the cemetery

Observing the order of burials it became evident, that the people of the former settlement of Kereki buried their dead in four separate groups. The first group was made up of Grave Nos 1–24, the second group of Grave Nos 25–35 and 88–139, the third one of 36–87, and the fourth group at last of Grave Nos 140–146. Grave Nos 148–151 did not belong to the cemetery. Groups one and four were incomplete, as a number of graves were destroyed by sand mining. The second group was only partially uncovered, the third group could be considered complete. Only a restricted comparison of groups was possible, as the representativity of the samples was insufficient with groups one and four, as there were almost no taxonomically and metrically evaluable skulls in them (Table 7). Sexual distribution of individuals belonging to these groups was presented in Table 1.

Group 3 was the only one that could be considered complete. The braincases of its members were long, medium high, high (dolichocran, orthocran, akrocran, and eurymetop). On this basis they could be seen as similar to the Avar Period population of Western Transdanubia (ÉRY 1983). The skulls of the numerous, yet incomplete Group 2 were a little bit different to them. These skulls were medium high and medium long (mesocran, orthocran, metriocran, and metriometop). Group 2 was similar to the Avars of Eastern Transdanubia (ÉRY 1983), but beyond them to the Avars inhabiting the Duna and Tisza riparine regions that was called Duna-Tisza area group by FÓTHI (1991). Both groups had mesoprosop and mesen facial indices. We found differences of distribution of the robust and gracile races

within the two groups. Race features of the Nordic and Cromagnoid races dominated on nine skulls, those of the Mediterranean race on eight ones. This distribution was one to five in Group 3.

Table 7. Parameters of groups, combined data of male and female series by ALEKSEEV & DEBETS method

Martin No.	Group 1			Group 2			Group 3			Group 4		
	N	M	S	N	M	S	N	M	S	N	M	S
1	4	183.1	3.7	22	181.1	6.0	9	185.9	6.6	2	194.6	2.2
5	1	92.8	–	18	99.5	4.8	8	104.4	3.8	2	106.2	0.3
8	5	139.2	7.9	21	139.3	6.7	10	138.8	4.0	3	140.7	4.6
9	8	94.7	3.8	25	92.9	5.0	11	95.9	3.1	3	99.8	12.9
10	7	116.3	5.6	21	115.0	3.8	11	118.9	3.5	3	120.0	8.5
11	3	119.1	3.5	18	122.1	6.0	10	123.9	4.6	2	128.5	2.1
12	4	114.6	6.6	17	111.7	5.9	9	108.3	5.9	3	111.7	6.8
17	1	137.2	–	19	133.3	5.5	10	138.1	3.9	2	142.7	1.0
20	2	114.6	3.6	21	113.1	4.4	10	115.4	3.7	2	121.2	0.2
23	1	510.0	–	19	517.1	16.2	9	524.1	14.9	1	557.0	–
40	1	84.4	–	16	92.9	4.8	7	92.3	6.5	2	100.5	0.7
43	5	103.8	4.9	20	102.2	4.2	8	103.6	3.9	3	107.2	11.7
45	1	130.0	–	12	131.5	3.5	3	135.8	3.3	2	140.2	0.3
46	4	94.9	3.0	18	93.5	5.9	8	94.3	3.3	2	105.8	2.5
47	0	–	–	14	114.0	6.5	8	115.0	6.8	1	125.0	–
48	5	68.0	2.9	15	69.8	3.8	8	69.9	3.5	1	75.0	–
51 right	4	39.9	1.8	20	40.0	1.8	9	41.0	1.7	2	44.9	0.2
51 left	4	38.5	1.6	20	39.0	1.4	10	41.0	1.7	3	40.6	4.0
52 right	6	32.2	1.6	21	31.2	1.4	9	32.0	1.7	2	30.1	0.1
52 left	6	32.1	2.0	20	31.4	1.3	10	32.2	1.7	3	32.4	1.5
54	4	23.5	1.3	17	24.8	1.8	10	24.4	2.4	2	29.1	3.0
55	7	50.8	3.0	19	50.8	2.7	11	49.1	3.1	3	52.4	0.6
60	3	53.3	3.1	15	53.7	4.4	7	52.8	1.7	2	59.3	0.5
61	4	56.5	8.5	13	61.3	4.3	7	62.1	3.8	1	70.0	–
62	4	43.0	4.2	15	44.6	3.5	7	44.2	1.7	2	48.7	2.4
63	3	40.2	2.6	15	40.0	3.7	6	42.5	2.9	1	46.0	–
65	4	109.5	3.7	14	100.3	6.4	6	100.8	4.5	3	98.7	11.0
66	2	102.5	6.4	8	100.4	6.6	3	97.1	2.4	3	99.8	11.1
69	7	31.3	3.1	19	32.4	2.8	12	33.4	1.8	2	35.5	0.7

Table 7 (continued)

Martin No.	Group 1			Group 2			Group 3			Group 4		
	N	M	S	N	M	S	N	M	S	N	M	S
70 right	4	57.3	1.7	10	58.8	6.1	7	57.5	3.7	2	60.0	7.1
70 left	3	56.3	4.0	11	61.4	5.7	6	60.3	4.5	2	61.0	7.1
71 right	7	29.0	2.1	10	29.6	1.9	5	31.8	3.3	2	33.0	4.2
71 left	2	30.5	0.7	12	30.7	1.6	3	32.7	2.5	2	33.0	4.2
8:1	2	78.3	3.5	19	77.3	3.6	8	74.5	2.8	2	73.5	0.7
17:1	0	–	–	18	73.7	2.9	8	74.5	2.8	2	73.3	0.3
17:8	1	106.7	–	16	96.1	3.7	9	99.9	4.1	2	99.8	1.3
20:1	1	62.9	–	18	62.3	2.0	8	62.7	3.3	2	62.3	0.6
20:8	2	87.0	5.8	18	80.8	3.3	9	82.5	3.4	2	84.7	1.6
9:8	4	68.7	2.9	21	66.6	3.5	8	69.3	3.7	3	70.8	6.9
47:45	0	–	–	8	87.7	4.3	3	87.1	1.2	1	89.3	–
48:45	1	53.1	–	8	53.5	2.4	2	52.3	1.6	1	53.6	–
52:51 right	4	80.4	4.7	20	77.9	3.4	9	78.1	4.9	2	67.0	0.5
52:51 left	4	82.6	3.6	20	80.5	2.2	10	78.6	4.8	3	80.6	12.1
54:55	4	45.2	2.2	16	48.9	3.1	10	49.7	4.9	2	55.4	4.9
61:60	2	112.0	10.7	11	114.7	6.8	6	116.1	6.4	1	118.6	–
63:62	2	90.8	12.8	13	91.8	10.4	5	94.6	7.5	1	97.9	–

Though we applied several cluster forming strategies we did not manage to establish some sort of pattern in the separation of the cemetery's groups. The groups usually fell in close clusters, Groups 1 and 3 were often combined.

We did not find a significant difference of the groups in the distribution of pathologic lesions, but joint alterations occured mostly with members of Group 2.

We wanted to find out if some biological difference could be established between the bone material of those buried with belts with fittings and of those buried without them. We cannot tell the exact reason why were certain men put in their graves with this peculiar sort of belt and others without it. Kereki-Homokbánya seemed to be suitable for the examination of this problem: partly because of the undisturbed condition of this cemetery, and partly because almost a third of the men, 22 individuals, were buried with fitting decorated belts.

In case of finding some tangible biological difference we wanted to see if it was of genetical character or it was brought about by enviromental factors.

Table 8. Description of the anthropological material

Grave	Invent	Sex	Age	Characterization
1	94.1.1.	Male	35–39	Incomplete calvarium, fragmentary skeletal bones.
2	94.1.2.	Female	20–22	Incomplete cranium, incomplete and fragmentary skeletal bones.
3	94.1.3.	Male	30–34	Fragmentary cranium, skeletal bones fragments.
4/A	94.1.4.	Male	30–34	Fragmentary, incomplete cranium and long bones diaphysises.
4/B	94.1.5.	Male	60–64	Fragmentary, incomplete cranium.
5	94.1.6.	Male	45–49	Cranial fragments and skeletal bones fragments.
6	–	Male	?	Male skeleton according to grave sketch, no anthropological material available.
7	94.1.7.	Male	30–34	Fragmentary, incomplete cranium.
8/A	94.1.8.	Female	20–24	Fragmentary, incomplete cranium and skeletal bones fragments.
8/B	94.1.9.	?	?	Skeletal bones fragments.
8/C	94.1.10.	?	5–9	Incomplete, fragmentary cranium and incomplete, fragmentary skeletal bones.
9	94.1.11.	Male	25–29	Incomplete cranium, skeletal bones fragments.
10	94.1.12.	Male	20–29	Incomplete, fragmentary skeletal bones, cranium is wanting.
11.	–	–	–	No anthropological material available.
12	94.1.13.	Male	40–44	Fragmentary and incomplete cranium, slightly damaged skeletal bones.
13/A	94.1.14.	Female	45–49	Cranial and skeletal fragments.
13/B	94.1.15.	Male ?	45–49	Fragmentary and incomplete cranium, long bones mid-shaft.
14	94.1.16.	Male ?	30–34	Fragmentary and incomplete cranium, fragmentary long bones diaphysises.
15/A	94.1.17.	Female	50–54	Fragmentary and incomplete cranium, long bones mid-shaft.
15/B	94.1.18.	?	5–9	Fragmentary and incomplete skull.
16	94.1.19.	Male	15–19	Incomplete and fragmentary cranium and skeletal bones.
17	94.1.20.	Female	25–29	Cranial fragments and long bones mid-shaft.
18	94.1.21.	Female	35–39	Cranial fragments and long bones mid-shaft.
19/A	94.1.22.	Male ?	45–49	Incomplete cranium, fragmentary and incomplete skeletal bones.
19/B	94.1.23.			Cranium of 94.1.19. number.
20	94.1.24.	Male	45–49	Mandible, fragmentary and incomplete skeletal bones.
21	94.1.25.	Male	18–20	Distorted fragmentary skull, well preserved skeletal bones.
22	94.1.26.	Male	30–34	Fragmentary, incomplete cranium and some long bones diaphysises.
23	94.1.27.	Female	35–39	Very fragmentary cranium and skeletal bones fragments.
24	94.1.28.	Female?	50–59	Some fragments of calvarium.
25	94.1.29.	Male	30–34	Cranium and near-complete skeleton.

Table 8 (continued)

Grave	Invent	Sex	Age	Characterization
26	94.1.30.	–	–	Skeletal bones of 94.1.29. number.
26	–	Female	45–54	Cranial fragments and fragmentary diaphysis.
27	94.1.31.	Female	20–39	Fragmentary and incomplete skeletal bones.
28	94.1.32.	Female	35–39	Cranial fragments and long bones mid-shaft.
29	94.1.33.	Female	20–24	Cranial fragments and long bones mid-shaft.
30	94.1.34.	Male ?	50–59	Very fragmentary nature of craium and diaphysises of long bones.
31	94.1.35.	?	?	Lower limb long bones fragments.
32	94.1.36.	Female	20–29	Clavicules, one rib and one molar tooth.
33	94.1.37.	Male	18–20	Fragmentary cranium and complete skeletal bones.
34	94.1.38.	?	5–9	Cranial fragments and teeth.
35	94.1.39.	Female	15–19	Cranial fragments and long bones diaphysises.
36/A	94.1.40.	Female	35–39	Slightly incomplete cranium and four cervical vertebrae.
36/B	94.1.41.	?	11–13	Cranium and long bones diaphysises.
37	94.1.42.	?	10–12	Fragmentary cranium and slightly fragmentary skeletal bones.
38	94.1.43.	Female	40–44	Cranial and skeletal fragments.
39	94.1.44.	Male	35–39	Near-complete cranium and skeleton.
40	94.1.45.	?	4–5	Fragmentary cranium and skeletal fragments.
41	94.1.46.	Male	50–54	Near-complete cranium and skeleton.
42	94.1.47.	Male	40–44	Incomplete, fragmentary cranium.
43 (43/A)	94.1.48.	Male	40–44	Incomplete, fragmentary cranium and incomplete, fragmentary skeletal bones.
44 (43/B)	94.1.49. 94.1.50.	Female	25–29	Incomplete, fragmentary cranium and incomplete, fragmentary skeletal bones.
45	94.1.51.	Female	45–49	Cranium and incomplete, fragmentary skeletal bones.
46	94.1.52.	?	5–6	Cranial and skeletal fragments.
47	94.1.53.	?	8–9	Cranial and skeletal fragments.
48	94.1.54.	?	8–9	Skeletal fragments and teeth.
49.	94.1.55.	Male	35–39	Incomplete, fragmentary cranium and incomplete, fragmentary skeletal bones.
50	94.1.56.	Female	maturus	Near-complete postcranial skeleton.
51	94.1.57.	Male	40–44	Cranium and skeleton.
52	94.1.58.	Male ?	35–39	Cranial fragments and long bones diaphysises.
53	94.1.59.	Female?	25–29	Cranial and skeletal fragments.
54	94.1.60.	Male	25–34	Fragmentary cranium and near-complete skeleton.
55	94.1.61.	Female	20–23	Well preserved cranium and skeletal bones.

Table 8 (continued)

Grave	Invent	Sex	Age	Characterization
56	94.1.62.	?	20–80	Skeletal fragments.
57	94.1.63.	Male ?	25–29	Incomplete, fragmentary cranium and near-complete postcranial skeleton.
58	94.1.64.	?	3–4	Cranial fragments and teeth.
59	94.1.65.	Female	35–39	Cranium and incomplete, fragmentary skeletal bones.
60	94.1.66.	Male ?	40–59	Cranial and skeletal fragments.
31	94.1.67.	?	?	Skull and skeletal fragments.
62	94.1.68.	Female?	40–44	Incomplete, fragmentary cranium and incomplete, fragmentary skeletal bones.
63	94.1.69.	Female	50–54	Skull remains and incomplete, fragmentary skeletal bones.
64	94.1.70.	Female	18–22	Incomplete, fragmentary cranium and incomplete, fragmentary skeletal bones.
65	94.1.71.	Female	25–29	Incomplete, fragmentary cranium and skeletal remains.
66	94.1.72.	Male	30–34	Fragmentary and incomplete cranium, long bones diaphysises.
67	94.1.73.	Female		Cranial and skeletal fragments.
68	–	–	–	No anthropological material available.
69	94.1.74.	Male	45–49	Skull and postcranial material were fragmented and incomplete.
70	94.1.75.	Female	20–24	Cranium and postcranial material were fragmented and incomplete.
71	94.1.76.	Male	20–24	Skull and skeletal fragments.
72	94.1.74.	Male	65–69	Near-complete cranium and Incomplete, fragmentary postcranial skeleton.
73	94.1.78.	Male	35–39	Incomplete, fragmentary cranium and incomplete, fragmentary skeletal bones.
74	94.1.79.	Female?	25–40	Cranial and skeletal fragments.
75	94.1.80.	?	8–14	Cranial and skeletal fragments.
76	94.1.81.	Male	35–39	Cranial and skeletal fragments.
77	94.1.82.	Male ?	20–40	Skull fragments and long bone diaphysises.
78	94.1.83.	Male	55–59	Fragmentary cranium and pieces of diaphysises.
79	94.1.84.	?	12–13	Cranial and skeletal fragments.
80	94.1.85.	Female	25–29	Incomplete, fragmentary cranium and incomplete, fragmentary skeletal bones.
81	94.1.86.	Male	30–34	Skull remains and incomplete, fragmentary skeletal bones.
82	94.1.87.	Male	40–44	Incomplete, fragmentary cranium and incomplete, fragmentary skeletal bones.
83	94.1.88.	Male ?	35–44	Cranial and skeletal fragments.
84	94.1.89.	Male ?	50–59	Cranial and skeletal fragments.
85	94.1.90.	Female	18–20	Cranium and incomplete, fragmentary skeletal bones.

Table 8 (continued)

Grave	Invent	Sex	Age	Characterization
86	94.1.91.	?	5–9	Teeth.
87	94.1.92.	Female	35–39	Morsels of cranium and incomplete, fragmentary skeletal bones.
88	94.1.93.	Female	17–19	Cranium and diaphysises.
89	94.1.94.	Female	30–34	Piece of mandible and diaphysises.
90	94.1.95.	Female	15–19	Incomplete, fragmentary cranium and broken, but complete postcranial skeleton.
91	94.1.96.	Male ?	25–29	Teeth and diaphysises.
92/A	94.1.97.	?	6–7	Cranium of medium quality preservation and postcranial skeleton.
92/B	94.1.98.	?	0–1	Morsels of skeleton.
93	94.1.99.	Male	30–34	Near-complete cranium and skeleton.
94	94.1.100.	Male	18–22	Near-complete cranium and incomplete, fragmentary skeletal bones.
95	94.1.101.	?	2–9	Piece of calvarium and diaphysis of humerus.
96	94.1.102.	?	6–7	Piece of mandible of teeth.
97	94.1.103.	?	9–12	Fragmentary cranium and diaphysises.
98	–	–	–	No anthropological material could be found.
99	94.1.104.	Female	14–18	Incomplete, fragmentary cranium and near-complete postcranial skeleton.
100	94.1.105.	?	3–4	Cranial fragments and two diaphysises.
	94.1.106.			
101	–	–	–	No anthropological material could be found.
102	94.1.107.	Male	65–69	Broken, incomplete, deformed skull and incomplete, fragmentary skeletal bones.
103	94.1.108.	Male	70–74	Near-complete skull and skeleton.
104/A	94.1.109.	Female	22–24	Incomplete, fragmentary cranium and near-complete skeleton.
104/B	94.1.110.	Male	45–49	Skull and skeleton both well preserved and complete.
105	94.1.111.	Male	50–54	Incomplete, fragmentary cranium and near-complete skeleton.
106	94.1.112.	Female	65–69	Incomplete, fragmentary cranium and incomplete fragmentary skeleton.
107	94.1.113.	Male	35–39	Near-complete cranium and near-complete skeleton.
108	94.1.114.	Female	35–39	Calvaria, mandible and skeletal bonesfragments.
109	94.1.115.	Male	35–39	Cranium and incomplete fragmentary skeleton.
110	94.1.116.	Male	50–54	Near-complete cranium and long bones diaphysises.
111	94.1.117.	Female	55–59	Cranium and incomplete fragmentary skeleton.
112	94.1.118.	Female	35–39	Near-complete cranium, tibia and femur diaphysises.
113	94.1.119.	Male	35–39	Cranium and incomplete fragmentary skeleton.

Table 8 (continued)

Grave	Invent	Sex	Age	Characterization
114	94.1.120.	Male	35–39	Incomplete, deformed cranium and incomplete fragmentary skeleton.
115	94.1.121.	?	9–10	Cranium and skeletal bones fragments.
116	–	?	?	Infant skeleton by the grave sketch. We found no anthropological material.
117	94.1.122.	Female	35–39	Cranial fragments, teeth and morsels of skeleton.
118	94.1.123.	Female	25–29	Cranial fragments and two diaphysises.
119	94.1.124.	?	5–7	Cranial fragments, teeth and diaphysises.
120	94.1.125.	Female	22–24	Fragmentary, deformed cranium and fragmentary skeletal bones.
121	94.1.126.	?	5–7	Cranial fragments and teeth.
122	94.1.127.	Female	30–39	Fragmentary, deformed cranium and diaphysises.
123	94.1.128.	Female	60–64	Incomplete, fragmentary cranium and incomplete, fragmentary skeletal bones.
124	94.1.129.	Male	45–49	Near-complete cranium and incomplete, fragmentary skeletal bones.
125	94.1.130.	Female	30–34	Incomplete, fragmentary cranium and incomplete, fragmentary skeletal bones.
126	94.1.131.	?	5–7	Morsels of skeleton.
127	94.1.132.	Female	30–34	Near-complete cranium and incomplete, fragmentary skeletal bones.
128	94.1.133.	Male	40–44	Near-complete cranium and incomplete, fragmentary skeletal bones.
129	94.1.134.	Male	35–39	Cranium-and near-complete skeleton.
130	94.1.135.	Male	30–34	Invomplete cranium and diaphysises.
131	94.1.136.	Male	20–24	Incomplete, fragmentary cranium and incomplete, fragmentary skeleton.
132	94.1.137.	Male ?	25–29	Incomplete, fragmentary cranium and near-complete skeletal bones.
133	94.1.138.	Female	30–34	Near-complete cranium and incomplete, fragmentary skeleton.
134	94.1.139	?	5–7	Morself of skeleton.
135	94.1.140.	?	9–10	Pieces of calvaria, teeth and diaphysises.
136	94.1.141.	Male	40–49	Cranium and skeleton.
137	94.1.142.	Female?	30–34	Cranial and skeletal fragments.
138	94.1.143.	Male	30–34	Near-complete cranium and near-complete skeleton.
139	94.1.144.	Male ?	25–29	Fragmentary cranium and near-complete skeletal bones.
140	94.1.145.	Male	50–54	Incomplete, fragmentary cranium and skeletal bones.
141	94.1.146.	Female	25–29	Complete but slightly deformed cranium and skeletal bones.

Table 8 (continued)

Grave	Invent	Sex	Age	Characterization
142	94.1.147.	?	20–80	Fragments of skeleton.
143	94.1.148.	Male ?	60–64	Cranium and incomplete, fragmentary skeleton.
144	94.1.149.	Female	30–34	Incomplete, fragmentary cranium and incomplete, fragmentary skeletal bones.
145	94.1.150.	Male	30–34	Cranium and postcranial skeletal bones.
146	94.1.151.	Female	15–17	Incomplete, fragmentary cranium and postcranial skeleton.
147	–	–	–	No anthropological material could be found.
148	94.1.152.	Female	35–39	Incomplete, fragmentary cranium and incomplete, fragmentary skeletal bones.
149	94.1.153.	Male ?	20–80	Incomplete, fragmentary skeletal bones.
150	94.1.154.	Female?	45–54	Incomplete, fragmentary skeletal bones.
151	94.1.155.	Male ?	55–59	Incomplete, deformed skull.

From serological data with purely genetic background (LENGYEL 1989) the distribution of 's dominant I^A and I^B alleles (genes) could be established by – by the above mentioned three aspects.

Stature was estimated on the basis of length of long bones. This entailed the non-observance of spinal column, the part of the skeleton most directly influenced by age related changes and enviromental effects for calculating stature. This way our stature values – and bone lenght values supporting them – depended on genetic constitution up to 90%. When applying the two samples t-test for the estimated stature data of the two groups, we arrived at results one order of magnitude lower, than the level of significance. It also indicated a genetic similarity.

The exact order of succession of non-metric characteristics was not known. We found four characteristics observable on more than five individuals in both groups: sutura supranasalis, incisura supraorbitalis medialis, torus palatinus and spina mentalis. One or two orders of magnitude sized shortfalls could be established by

The two groups presented no significant differences according to morphological marks indicating sexual dimorphism and according to the estimated age at the time of death too. This was a result not easy to interpret (and it would require a long explanation), as both the sex determining and age estimating features were partly determined by genetics, and partly by enviromental factors. The most plausible reason for the significant similarity could be the similarity of genetical and environmental backgrounds (and the small interpersonal fault of analysis).

Table 9. Individual cranial measurements and indices

Grave No.	1.	2.	4/A	4/B	5.	7.	8/A	9.	13/A	15.	18.	19/A
Martin No. \ Sex	Male	Female	Male	Male	Male	Male	Female	Male	Female	Female	Female	Male
1	(184)	–	–	–	–	–	178	178	–	175	–	–
5	–	88	–	–	–	–	–	–	–	–	–	–
8	–	124	–	145	–	–	–	135	–	143	–	139
9	–	90	91	–	–	95	–	90	98	95	90	97
10	–	107	–	118	–	110	116	113	–	121	–	115
11	–	110	–	–	–	–	–	122	–	–	–	120
12	–	–	–	123	–	–	–	111	–	112	–	108
17	–	131	–	–	–	–	–	–	–	–	–	–
20	–	112	–	–	–	–	–	112	–	–	–	–
23	–	–	–	–	–	–	–	510	–	–	–	–
40	–	81	–	–	–	–	–	–	–	–	–	–
43	–	95	99	–	–	–	–	106	106	–	–	105
45	–	–	–	–	–	–	–	–	–	–	–	130
46	–	88	92	–	–	–	–	–	93	–	–	97
47	–	–	–	–	–	–	–	–	–	–	–	(115)
48	–	65	66	–	(61)	–	–	64	66	–	–	69
51 right	–	39	(40)	–	42	–	–	38	(41)	–	–	39
51 left	–	39	(37)	–	–	–	36	37	(40)	–	–	39
52 right	–	32	31	–	32	–	–	30	34	–	–	34
52 left	–	33	31	–	–	–	31	29	34	–	–	34
54	–	21	–	–	–	–	–	24	24	–	–	23
55	–	46	49	–	53	–	43	53	49	–	–	54

Table 9 (continued)

Grave No.	1.	2.	4/A	4/B	5.	7.	8/A	9.	13/A	15.	18.	19/A
Martin No. \ Sex	Male	Female	Male	Male	Male	Male	Female	Male	Female	Female	Female	Male
60	–	48	–	–	–	–	–	(58)	–	–	54	53
61	–	57	63	–	–	–	–	44	–	–	56	–
62	–	38	–	–	–	–	–	39	–	–	44	47
63	–	38	43	–	–	–	–	–	–	–	36	(39)
66	–	–	–	98	–	–	–	–	–	–	–	–
69	(30)	–	31	30	(37)	26	27	–	–	–	31	33
70 right	57	–	59	55	–	–	–	–	–	–	–	–
70 left	–	47	–	57	–	–	–	–	–	–	–	–
71 right	31	23	27	32	–	27	–	–	–	–	–	27
71 left	–	25	–	31	–	–	–	–	–	–	–	–
8:1	–	–	–	–	–	–	–	75.8	–	81.7	–	–
17:1	–	–	–	–	–	–	–	–	–	–	–	–
17:8	–	105.6	–	–	–	–	–	–	–	–	–	–
20:1	–	–	–	–	–	–	–	62.9	–	–	–	–
20:8	–	90.3	–	–	–	–	–	83.0	–	–	–	–
9:8	–	72.6	–	–	–	–	–	66.7	–	66.4	–	69.8
47:45	–	–	–	–	–	–	–	–	–	–	–	–
48:45	–	–	–	–	–	–	–	–	–	–	–	53.1
52:51 right	–	82.1	–	–	76.2	–	–	78.9	–	–	–	87.2
52:51 left	–	84.6	–	–	–	–	86.1	78.4	–	–	–	87.2
54:55	–	45.7	–	–	–	–	–	45.3	49.0	–	–	42.6

Table 9 (continued)

Grave No.	1.	2.	4/A	4/B	5.	7.	8/A	9.	13/A	15.	18.	19/A
Martin No. \ Sex	Male	Female	Male	Male	Male	Male	Female	Male	Female	Female	Female	Male
61:60	–	118.8	–	–	–	–	–	–	–	–	103.7	–
63:62	–	100	–	–	–	–	–	–	–	–	81.8	–
Grave No.	20.	22.	25.	36/A	39.	41.	43.	45.	51.	55.	59.	62.
Martin No. \ Sex	Male	Male	Male	Female	Male	Male	Male	Female	Male	Female	Female	Female
1	–	184	177	–	188	188	–	187	182	168	178	177
5	–	–	101	95	108	110	–	100	100	–	97	102
8	–	–	135	131	136	136	–	141	134	138	133	132
9	–	–	87	–	99	102	96	95	94	88	93	93
10	–	–	110	112	114	119	120	122	119	(113)	114	114
11	–	–	–	118	123	121	–	126	115	–	118	122
12	–	(108)	–	–	110	110	–	112	97	(102)	106	104
17	–	–	135	126	143	144	–	133	140	–	131	127
20	–	–	–	103	116	119	–	110	117	109	110	109
23	–	–	497	–	519	527	–	530	506	–	501	499
40	–	–	100	89	101	99	–	89	87	–	88	–
43	–	–	97	–	107	108	–	102	101	96	101	–
45	–	–	–	124	135	(136)	–	130	(125)	–	(124)	–
46	–	–	91	93	(95)	96	–	93	93	88	90	–
47	–	–	120	108	119	106	(122)	111	119	(102)	101	–
48	–	–	72	66	69	(63)	74	(68)	72	(63)	63	–
51 right	–	–	(41)	42	41	41	–	41	40	39	38	–
51 left	–	–	40	40	40	41	42	41	40	39	40	–

Table 9 (continued)

Grave No.	20.	22.	25.	36/A	39.	41.	43.	45.	51.	55.	59.	62.
Martin No. \ Sex	Male	Male	Male	Female	Male	Male	Male	Female	Male	Female	Female	Female
52 right	–	–	32	31	34	32	–	31	35	31	30	–
52 left	–	–	32	33	35	32	32	33	34	30	30	
54	–	–	(25)	26	25	26	22	(23)	22	28	23	–
55	–	–	53	50	51	49	49	45	49	47	43	–
60	–	–	–	–	56	(55)	54	50	51	–	49	–
61	–	–	(63)	63	66	(62)	59	62	58	–	59	–
62	–	–	–	–	45	(47)	44	41	41	–	43	–
63	–	–	(43)	42	46	(36)	39	41	(39)	–	42	–
66	107	–	–	–	–	(107)	–	(96)	96	88	92	–
69	35	(34)	35	31	37	31	36	(33)	33	29	29	30
70 right	58	(63)	–	–	63	57	–	53	56	47	55	–
70 left	60	–	–	–	–	58	–	54	–	49	55	55
71 right	29	30	–	33	35	31	–	30	31	31	26	–
71 left	30	–	–	33	–	33	–	31	30	31	27	30
8:1	–	–	76.3	–	72.3	72.3	–	75.4	73.6	82.1	74.7	74.6
17:1	–	–	76.3	–	76.1	76.6	–	71.1	76.9	–	73.6	71.8
17:8	–	–	100.0	96.2	105.1	105.9	–	94.3	104.5	–	98.5	96.2
20:1	–	–	–	–	–	63.3	–	58.8	64.3	64.9	61.8	61.6
20:8	–	–	–	78.6	–	87.5	–	78.0	87.3	79.0	82.7	82.6
9:8	–	–	64.4	–	72.8	75.0	–	67.4	70.1	63.8	69.9	70.5
47:45	–	–	–	87.1	88.1	–	–	85.4	–	–	–	–
48:45	–	–	–	53.2	51.1	–	–	–	–	–	–	–

Table 9 (continued)

Grave No.	20.	22.	25.	36/A	39.	41.	43.	45.	51.	55.	59.	62.
Martin No. \ Sex	Male	Male	Male	Female	Male	Male	Male	Female	Male	Female	Female	Female
52:51 right	–	–	–	73.8	82.9	78.0	–	75.6	87.5	79.5	78.9	–
52:51 left	–	–	80.0	82.5	87.5	78.0	76.2	80.5	85.0	76.9	75.0	–
54:55	–	–	–	52.0	49.0	53.1	44.9	–	44.9	59.6	53.5	–
61:60	–	–	–	–	117.9	–	109.3	124.0	113.7	–	1204	–
63:62	–	–	–	–	102.2	–	88.6	100.0	–	–	97.7	–

Grave No.	64.	72.	73.	80.	81.	82.	93.	103.	104/A	104/B	105.	107.
Martin No. \ Sex	Female	Male	Male	Female	Male	Male	Male	Male	Female	Male	Male	Male
1	(168)	193	–	(174)	177	–	174	176	169	182	192	191
5	91	102	–	–	(92)	–	98	96	89	101	(105)	104
8	–	143	–	134	(141)	–	134	130	(129)	144	137	149
9	87	95	–	–	96	92	95	87	91	95	98	102
10	–	122	–	(115)	115	118	114	109	–	114	(119)	123
11	–	128	–	116	123	–	122	116	112	124	120	138
12	–	115	–	102	103	–	109	117	–	117	111	117
17	122	139	–	129	139	–	125	120	125	140	138	140
20	–	114	–	111	122	–	107	104	111	116	120	119
23	–	542	–	496	510	–	495	495	480	522	526	547
40	82	82	–	–	–	–	91	87	(90)	96	–	95
43	92	105	–	–	–	97	104	99	97	105	(105)	112
45	–	–	–	–	–	–	131	127	(120)	131	–	140
46	–	94	–	–	–	88	97	(94)	91	97	–	100
47	–	124	–	–	–	107	111	(105)	99	121	–	(115)

Table 9 (continued)

Grave No.	64.	72.	73.	80.	81.	82.	93.	103.	104/A	104/B	105.	107.
Martin No. \ Sex	Female	Male	Male	Female	Male	Male	Male	Male	Female	Male	Male	Male
48	60	74	67	–	–	64	69	(63)	(62)	73	–	(68)
51 right	–	42	–	–	–	38	41	40	(38)	39	–	42
51 left	37	43	–	–	–	37	40	39	–	38	–	41
52 right	–	33	–	–	–	30	32	32	(30)	31	–	32
52 left	29	32	–	–	–	30	32	31	–	31	–	32
54	22	23	23	–	–	23	25	(25)	–	26	–	26
55	44	55	47	–	–	44	51	51	–	53	–	53
60	44	52	–	–	–	53	55	(48)	–	60	–	52
61	53	(60)	–	–	–	58	63	(52)	–	(65)	–	(64)
62	38	45	–	–	–	46	44	(41)	–	49	–	(46)
63	37	(39)	–	–	–	39	45	(38)	–	(41)	–	(40)
66	–	–	–	–	–	–	97	101	86	111	–	105
69	25	33	32	–	35	32	34	(29)	29	35	31	32
70 right	–	–	–	–	–	55	54	52	52	68	–	59
70 left	–	68	–	–	–	–	56	50	51	68	65	59
71 right	24	35	–	–	–	27	29	26	25	30	–	30
71 left	24	35	–	–	–	–	32	28	25	30	29	30
8:1	–	74.1	–	–	–	–	77.0	73.9	–	79.1	71.4	78.0
17:1	–	72.0	–	–	78.5	–	71.8	68.2	74.0	76.9	71.9	73.3
17:8	–	97.2	–	96.3	–	–	93.3	92.3	–	97.2	100.7	94.0
20:1	–	59.1	–	–	68.9	–	61.5	59.1	65.7	63.7	62.5	62.3
20:8	–	79.7	–	82.8	–	–	79.9	80.0	–	80.6	87.6	79.9

Table 9 (continued)

Grave No.	64.	72.	73.	80.	81.	82.	93.	103.	104/A	104/B	105.	107.
Martin No. \ Sex	Female	Male	Male	Female	Male	Male	Male	Male	Female	Male	Male	Male
9:8	–	66.4	–	–	–	–	70.9	66.9	–	66.0	71.5	68.5
47:45	–	–	–	–	–	–	84.7	–	–	92.4	–	–
48:45	–	–	–	–	–	–	52.7	–	–	55.7	–	–
52:51 right	–	78.6	–	–	–	78.9	78.0	80.0	–	79.5	–	76.2
52:51 left	78.4	74.4	–	–	–	81.1	80.0	79.5	–	81.6	–	78.0
54:55	50.0	41.8	48.9	–	–	52.3	49.0	–	–	49.1	–	49.1
61:60	120.5	–	–	–	–	109.4	114.5	–	–	–	–	–
63:62	97.4	–	–	–	–	84.4	102.3	–	–	–	–	–
Grave No.	108.	109.	110.	111.	112.	113.	123.	124.	125.	127.	128.	129.
Martin No. \ Sex	Female	Male	Male	Female	Female	Male	Female	Male	Female	Female	Male	Male
1	164	179	186	169	178	181	181	178	–	173	171	184
5	–	95	105	94	–	95	(96)	(98)	–	90	95	106
8	134	136	140	135	139	131	148	144	(136)	126	146	141
9	89	91	91	88	98	90	89	94	93	95	88	95
10	–	114	115	112	115	114	–	123	111	111	112	117
11	–	120	123	112	–	114	122	125	–	112	124	132
12	102	110	(115)	107	114	106	119	111	–	102	112	115
17	–	125	140	128	–	130	(131)	(131)	–	126	135	134
20	–	106	113	110	112	109	113	112	–	106	112	111
23	479	507	526	485	509	508	522	520	–	491	513	523
40	–	88	91	83	–	88	–	(86)	–	83	–	100
43	–	100	103	96	102	97	(98)	104	–	102	(100)	103

Table 9 (continued)

Grave No.	108.	109.	110.	111.	112.	113.	123.	124.	125.	127.	128.	129.
Martin No. \ Sex	Female	Male	Male	Female	Female	Male	Female	Male	Female	Female	Male	Male
45	–	128	134	119	(123)	125	–	134	–	(120)	–	132
46	–	76	98	82	88	90	–	101	–	92	–	89
47	–	104	121	99	–	(101)	–	–	–	(109)	111	120
48	–	66	74	62	71	65	–	67	–	60	(67)	(73)
51 right	–	39	39	38	41	39	–	40	38	40	42	38
51 left	–	38	39	38	39	37	–	39	37	39	–	38
52 right	–	31	31	32	33	30	–	31	28	32	31	28
52 left	–	31	32	31	34	30	–	31	30	33	–	29
54	–	25	25	24	24	22	–	27	–	(25)	25	28
55	–	48	53	47	51	49	–	49	–	46	(51)	52
60	–	49	(53)	46	55	49	–	49	–	(47)	(49)	60
61	–	52	65	54	58	55	–	(57)	–	(49)	60	65
62	–	43	43	39	46	42	–	39	–	–	(41)	48
63	–	37	44	35	36	33	–	37	–	35	40	43
66	–	95	–	–	–	94	–	–	–	–	–	–
69	–	29	32	26	–	25	–	–	–	29	(30)	34
70 right	–	60	–	–	–	51	–	–	–	–	–	61
70 left	–	62	63	–	–	–	–	–	–	59	–	–
71 right	–	30	–	–	–	32	–	–	–	–	–	28
71 left	–	29	32	–	–	32	–	–	–	28	32	30
8:1	81.7	76.0	75.3	79.9	78.1	72.4	81.8	80.9	–	72.8	85.4	76.6
17:1	–	69.8	75.3	75.7	–	71.8	–	–	–	72.8	78.9	72.8

Table 9 (continued)

Grave No.	108.	109.	110.	111.	112.	113.	123.	124.	125.	127.	128.	129.
Martin No. \ Sex	Female	Male	Male	Female	Female	Male	Female	Male	Female	Female	Male	Male
17:8	–	91.9	100.0	94.8	–	99.2	–	–	–	100.0	92.5	95.0
20:1	–	59.2	60.8	65.1	62.9	60.2	62.4	62.9	–	61.3	65.5	60.3
20:8	–	77.9	80.7	81.5	80.6	83.2	764	77.8	–	84.1	76.7	78.7
9:8	66.4	66.9	65.0	65.2	70.5	68.7	60.1	65.3	–	75.4	60.3	67.4
47:45	–	81.3	90.3	83.2	–	–	–	–	–	–	–	90.9
48:45	–	51.6	55.2	52.1	–	–52.0	–	50.0	–	–	–	–
52:51 right	–	79.5	79.5	84.2	80.5	76.9	–	77.5	73.7	80.0	73.8	73.7
52:51 left	–	81.6	82.1	81.6	87.2	81.1	–	79.5	81.1	84.6	–	76.3
54:55	–	52.1	47.2	51.1	47.1	44.9	–	55.1	–	–	–	53.8
61:60	–	106.1	–	117.4	105.5	112.2	–	–	–	–	–	108.3
63:62	–	86.0	102.3	89.7	78.3	78.6	–	94.9	–	–	–	89.6

Grave No.	130.	131.	132.	133.	136.	138.	139.	140.	143.	145.	148.
Martin No. \ Sex	Male	Male	Male	Female	Male	Male	Male	Male	Male	Male	Female
1	185	–	174	–	184	185	(185)	(182)	187	193	172
5	106	97	94	–	108	102	–	(111)	101	106	–
8	–	131	–	128	148	140	–	136	140	141	128
9	102	86	86	85	97	88	(91)	86	108	102	94
10	116	115	110	110	118	110	–	112	124	119	–
11	–	119	–	113	123	–	–	(115)	124	127	–
12	–	–	–	–	(113)	110	99	104	110	117	101
17	139	131	137	–	133	133	–	(137)	137	142	–
20	–	109	113	110	114	–	118	–	116	121	–

Table 9 (continued)

Grave No.	130.	131.	132.	133.	136.	138.	139.	140.	143.	145.	148.
Martin No. \ Sex	Male	Male	Male	Female	Male	Male	Male	Male	Male	Male	Female
23	–	–	(497)	–	537	523	(521)	–	534		–
40	98	96	92	–	98	94	–	(102)	96	101	–
43	108	101	99	92	106	98	–	94	112	111	(102)
45	–	131	–	–	133	130	–	–	131	140	–
46	(95)	94	90	89	99	95	–	(85)	102	104	–
47	119	(115)	107	105	123	112	–	–	(118)	125	–
48	72	(72)	68	64	76	69	(65)	(73)	(66)	75	66
51 right	40	43	41	35	40	37	–	–	42	45	–
51 left	40	41	38	35	40	37	–	36	41	43	40
52 right	31	33	30	31	33	30	–	–	31	30	–
52 left	32	33	31	31	33	29	(29)	34	32	31	32
54	24	25	21	22	27	23	–	–	30	27	26
55	51	54	48	42	55	48	(49)	52	50	52	48
60	58	50	51	51	60	54	–	–	57	59	–
61	(59)	64	62	59	67	64	–	–	(58)	70	–
62	48	42	40	45	49	46	–	–	48	47	44
63	37	43	44	40	(42)	43	–	–	(40)	46	38
66	–	–	–	–	–	–	107	87	98	106	–
69	36	34	31	30	36	30	35	35	(40)	36	34
70 right	–	–	69	–	–	56	–	55	–	65	–
70 left	69	–	–	56	–	–	–	56	–	66	62
71 right	–	–	28	–	–	32	31	30	35	36	–

Table 9 (continued)

Grave No.	130.	131.	132.	133.	136.	138.	139.	140.	143.	145.	148.
Martin No. \ Sex	Male	Male	Male	Female	Male	Male	Male	Male	Male	Male	Female
71 left	33	–	–	27	(37)	–	31	30	35	36	26
8:1	–	–	–	–	80.4	75.7	–	–	74.9	73.1	74.4
17:1	75.1	–	78.7	–	72.3	71.9	–	–	73.3	73.6	–
17:8	–	100.0	–	–	89.9	95.0	–	–	97.9	100.7	–
20:1	–	–	64.9	–	62.0	–	–	–	62.0	62.7	–
20:8	–	83.2	–	85.9	77.0	–	–	–	82.9	85.8	–
9:8	–	65.6	–	66.4	65.5	62.9	–	63.2	77.1	72.3	73.4
47:45	–	–	–	–	92.5	86.2	–	–	–	89.3	–
48:45	–	–	–	–	57.1	53.1	–	–	–	53.6	–
52:51 right	77.5	76.7	73.2	88.6	82.5	81.1	–	–	69.8	66.7	–
52:51 left	80.0	80.5	81.6	88.6	82.5	78.4	–	94.4	73.8	72.1	80.0
54:55	47.1	46.3	43.8	52.4	49.1	47.9	–	–	60.0	51.9	54.2
61:60	–	128.0	121.6	115.7	111.7	118.5	–	–	–	118.6	–
63:62	77.1	102.4	110.0	88.9	–	93.5	–	–	–	97.9	86.4

Table 10. Individual measurements of the long bones

Grave No.		1.	10.	12.	14.	15.	19/A	20.	22.	25.	27.	39.	41.
Martin No \ Sex.		Male	Male	Male	Male	Female	Male	Male	Male	Male	Female	Male	Male
Clavicula													
1	R	140	–	–	–	–	(136)	–	–	154	–	159	146
	L	–	–	–	–	–	–	–	–	153	–	167	153
6	R	37	–	36	39	–	38	–	–	40	–	40	44
	L	–	–	–	–	–	–	–	–	39	25	38	38
Humerus													
1	R	–	309	–	–	–	–	–	–	326	–	313	325
	L	–	–	–	–	–	–	–	–	324	305	310	319
2	R	–	302	–	–	–	–	–	–	318	–	(306)	317
	L	–	–	–	–	–	–	–	–	317	299	–	313
3	R	–	(47)	–	–	–	–	–	–	50	–	49	50
	L	–	–	–	–	–	–	–	–	49	(43)	–	49
4	R	–	64	–	–	–	–	–	–	(62)	–	61	68
	L	–	62	73	–	–	–	–	–	65	55	60	68
5	R	21	24	21	22	21	23	21	–	23	18	26	26
	L	20	25	20	19	18	22	–	21	22	18	24	24
6	R	18	18	16	17	14	18	17	–	18	14	18	19
	L	17	18	17	15	13	18	–	15	18	14	17	18
7	R	62	65	55	62	54	66	57	–	67	52	63	66
	L	60	64	59	59	51	61	–	57	66	50	62	65
7a	R	67	72	64	67	58	73	61	–	71	55	74	75
	L	63	75	64	61	56	67	–	61	69	53	69	71

Table 10 (continued)

Grave No.		1.	10.	12.	14.	15.	19/A	20.	22.	25.	27.	39.	41.
Martin No \ Sex.		Male	Male	Male	Male	Female	Male	Male	Male	Male	Female	Male	Male
9	R	(46)	(44)	–	–	–	–	–	–	46	–	45	46
	L	–	–	–	–	–	–	–	–	45	43	44	45
Radius													
1	R	–	230	–	–	–	–	–	–	244	–	230	250
	L	–	–	–	–	–	–	–	–	246	–	232	253
2	R	–	215	–	–	–	–	–	–	228	–	217	236
	L	–	–	–	–	–	–	–	–	231	–	219	237
3	R	41	47	(41)	–	–	–	44	–	43	–	42	45
	L	41	45	43	–	–	–	44	–	44	–	40	43
4	R	16	19	17	–	–	19	17	–	17	13	16	17
	L	16	19	17	–	–	18	17	–	18	–	15	15
5	R	12	13	11	–	–	13	12	–	12	10	11	12
	L	11	13	11	–	–	13	12	–	14	–	11	12
Ulna													
1	R	–	257	–	–	–	–	–	–	267	–	(250)	–
	L	–	–	–	–	–	–	–	–	270	–	(250)	–
2	R	–	219	–	–	–	–	–	–	228	–	217	236
	L	–	–	239	–	–	–	–	–	230	–	216	–
3	R	37	44	–	–	–	–	–	–	40	–	39	39
	L	–	–	39	–	–	–	42	–	40	–	36	–
11	R	12	16	13	–	–	–	15	13	13	–	13	13
	L	11	14	15	12	–	13	16	–	13	10	13	12

Table 10 (continued)

Grave No.		1.	10.	12.	14.	15.	19/A	20.	22.	25.	27.	39.	41.
Martin No \ Sex.		Male	Male	Male	Male	Female	Male	Male	Male	Male	Female	Male	Male
12	R	16	20	17	–	–	–	16	17	18	–	17	19
	L	14	18	18	15	–	18	18	–	19	14	15	18
13	R	–	26	–	–	–	–	21	–	20	–	21	22
	L	17	22	19	–	–	–	22	–	22	18	22	23
14	R	–	26	–	–	–	–	25	–	25	–	26	26
	L	18	26	20	–	–	–	25	–	23	22	24	25
Grave No.		43.	44.	49.	50.	51.	52.	54.	55.	57.	59.	62.	70.
Martin No \ Sex.		Male	Female	Male	Female	Male	Male	Male	Female	Male	Female	Female	Female
Clavicula													
1	R	–	141	–	141	–	–	–	130	(145)	136	–	–
	L	–	–	–	–	142	–	–	130	–	136	–	–
6	R	–	32	44	36	–	35	39	39	38	32	39	–
	L	–	–	42	36	36	–	37	38	36	29	37	–
Humerus													
1	R	–	–	330	–	–	–	325	(299)	332	–	–	322
	L	–	–	–	(298)	310	–	–	(295)	330	–	–	–
2	R	–	–	324	–	–	–	318	(294)	325	–	–	318
	L	–	–	–	(294)	305	–	–	(290)	326	–	–	–
3	R	–	–	53	–	–	–	(51)	45	(50)	–	–	–
	L	–	–	–	–	–	–	–	44	–	–	–	–
4	R	–	–	67	–	–	–	60	52	63	–	–	–
	L	–	–	–	–	63	–	–	53	–	–	63	–

Table 10 (continued)

Grave No.		43.	44.	49.	50.	51.	52.	54.	55.	57.	59.	62.	70.
Martin No \ Sex.		Male	Female	Male	Female	Male	Male	Male	Female	Male	Female	Female	Female
5	R	23	21	23	19	22	21	23	16	18	19	–	18
	L	23	20	23	19	21	21	22	16	17	19	21	–
6	R	18	15	19	16	18	17	17	13	16	15	–	15
	L	17	15	18	16	17	16	16	13	16	15	17	–
7	R	65	56	64	55	62	60	62	47	55	51	–	56
	L	60	55	63	54	60	59	61	47	53	45	59	–
7a	R	74	62	72	60	71	64	69	52	57	58	–	58
	L	69	60	70	58	70	64	65	50	54	57	66	–
9	R	–	–	(47)	–	–	–	46	40	45	–	–	43
	L	48	–	–	–	48	–	46	40	45	–	–	–
Radius													
1	R	–	–	255	218	–	–	239	209	249	–	–	–
	L	–	–	250	–	232	–	–	206	243	–	248	–
2	R	–	–	238	206	–	–	224	198	234	–	–	–
	L	–	–	235	207	218	–	–	196	229	194	234	–
3	R	–	–	45	37	42	–	43	32	37	–	–	38
	L	–	–	40	34	39	39	38	31	37	34	40	–
4	R	–	–	17	16	17	–	18	13	14	–	–	14
	L	–	–	16	15	16	15	16	12	14	14	16	–
5	R	–	–	12	9	11	–	10	9	10	–	–	10
	L	–	–	11	9	11	11	11	9	11	10	11	–

Table 10 (continued)

Grave No.		43.	44.	49.	50.	51.	52.	54.	55.	57.	59.	62.	70.
Martin No \ Sex.		Male	Female	Male	Female	Male	Male	Male	Female	Male	Female	Female	Female
Ulna													
1	R	–	–	–	242	–	–	254	233	267	–	–	–
	L	–	–	–	–	–	–	–	231	268	–	–	–
2	R	–	–	–	213	–	–	221	202	237	–	–	–
	L	–	–	–	–	219	–	–	198	237	–	236	–
3	R	–	–	–	35	–	–	37	30	35	–	–	–
	L	–	–	–	–	36	–	36	30	32	–	37	–
11	R	–	–	–	12	14	–	13	11	11	–	14	11
	L	–	–	15	–	13	14	14	10	12	–	14	–
12	R	–	–	–	15	16	–	16	12	17	–	17	14
	L	–	–	16	–	18	18	14	12	16	–	19	–
13	R	–	–	–	18	21	–	21	18	22	–	24	19
	L	–	–	23	–	21	–	18	17	22	–	23	–
14	R	–	–	–	22	25	–	26	19	22	–	22	21
	L	–	–	23	–	24	–	25	20	22	–	22	–

Grave No.		72.	81.	82.	87.	93.	102.	103.	104/A	104/B	105.	106.	107.
Martin No \ Sex.		Male	Male	Male	Female	Male	Male	Male	Female	Male	Male	Female	Male
Clavicula													
1	R	–	124	147	–	–	–	–	121	–	142	138	135
	L	–	126	–	–	150	–	142	120	–	160	–	–
6	R	39	36	36	28	35	–	35	26	41	50	30	43
	L	–	34	37	–	36	35	35	27	41	42	30	44

Table 10 (continued)

Grave No.		72.	81.	82.	87.	93.	102.	103.	104/A	104/B	105.	106.	107.
Martin No \ Sex.		Male	Male	Male	Female	Male	Male	Male	Female	Male	Male	Female	Male
Humerus													
1	R	–	–	319	–	–	–	–	266	320	336	312	–
	L	–	–	–	–	–	–	323	(263)	–	329	–	–
2	R	–	–	311	–	–	–	–	264	315	328	307	–
	L	–	–	–	–	–	–	316	(262)	–	322	–	–
3	R	–	–	–	–	–	–	–	40	52	50	44	–
	L	–	–	–	–	–	–	–	–	–	49	–	–
4	R	–	–	–	–	–	–	–	50	–	61	57	–
	L	–	–	–	–	–	–	63	–	–	62	–	–
5	R	19	24	20	18	21	22	22	16	26	22	19	23
	L	20	22	–	17	21	22	21	16	26	21	18	22
6	R	15	16	17	13	16	18	17	13	19	18	14	19
	L	16	14	–	13	16	17	17	13	19	18	14	19
7	R	60	58	58	45	60	64	60	48	70	63	51	63
	L	61	56	–	43	58	64	59	47	69	64	50	63
7a	R	57	67	61	51	64	72	67	49	76	66	59	70
	L	–	64	–	49	60	70	63	48	76	66	56	67
9	R	–	38	–	–	–	–	44	34	46	43	37	–
	L	–	–	–	–	–	–	40	(33)	49	43	–	–
Radius													
1	R	–	–	248	–	–	–	–	202	–	259	–	253
	L	–	–	–	–	–	–	–	198	234	260	–	251

Table 10 (continued)

Grave No.		72.	81.	82.	87.	93.	102.	103.	104/A	104/B	105.	106.	107.
Martin No \ Sex.		Male	Male	Male	Female	Male	Male	Male	Female	Male	Male	Female	Male
2	R	–	–	239	–	–	–	–	190	–	246	225	240
	L	–	–	–	–	–	–	228	186	–	246	–	237
3	R	–	–	38	27	37	–	36	30	46	41	30	44
	L	–	–	–	–	37	–	38	29	46	40	30	44
4	R	–	–	12	11	13	–	13	11	18	16	12	19
	L	–	–	–	–	13	14	14	11	18	14	13	18
5	R	–	–	10	7	10	–	11	9	12	12	10	12
	L	–	–	–	–	11	10	11	9	13	12	10	12
Ulna													
1	R	–	–	–	–	–	–	–	–	–	–	–	–
	L	–	–	–	–	–	–	263	–	–	285	–	–
2	R	–	–	–	–	–	–	229	–	–	–	–	240
	L	–	–	–	–	–	–	228	–	–	246	–	–
3	R	–	–	31	26	30	–	36	27	–	37	–	38
	L	–	–	–	–	31	39	36	28	44	37	28	–
11	R	–	–	12	10	11	–	14	9	14	14	–	13
	L	11	–	–	–	11	13	13	9	13	15	10	–
12	R	–	–	16	11	13	–	15	12	18	17	–	16
	L	15	–	–	–	13	16	15	12	18	18	13	–
13	R	–	–	20	13	–	–	20	14	–	20	15	21
	L	–	–	–	–	20	–	20	13	23	20	–	20

Table 10 (continued)

Grave No.		72.	81.	82.	87.	93.	102.	103.	104/A	104/B	105.	106.	107.
Martin No \ Sex.		Male	Male	Male	Female	Male	Male	Male	Female	Male	Male	Female	Male
14	R	–	–	22	18	–	–	22	19	–	23	19	25
	L	–	–	–	–	22	–	22	18	25	23	–	25
Grave No.		109.	110.	113.	123.	124.	125.	127.	128.	129.	131.	132.	133.
Martin No \ Sex.		Male	Male	Male	Female	Male	Female	Female	Male	Male	Male	Male	Female
Clavicula													
1	R	–	–	129	–	–	–	–	–	150	–	141	127
	L	–	–	(133)	–	–	–	138	–	152	–	149	–
6	R	39	31	28	32	40	32	40	38	32	38	39	28
	L	39	29	26	–	39	31	35	40	30	39	34	28
Humerus													
1	R	–	–	–	–	–	–	–	–	321	–	327	–
	L	–	–	–	–	–	–	–	–	317	311	321	–
2	R	–	–	–	–	–	–	–	–	315	–	321	(287)
	L	–	–	–	–	–	–	–	–	311	308	317	–
3	R	–	–	–	–	–	–	–	–	–	–	50	–
	L	–	–	–	–	–	–	–	–	53	–	50	–
4	R	–	–	–	–	–	–	–	–	67	–	63	–
	L	–	–	–	49	–	51	–	–	–	58	59	–
5	R	22	18	21	21	22	18	20	21	24	21	21	18
	L	21	19	21	21	22	18	18	20	23	20	18	–
6	R	17	14	17	16	17	15	17	17	17	18	16	15
	L	17	14	18	16	16	15	16	17	17	17	14	–

Table 10 (continued)

Grave No.		72.	81.	82.	87.	93.	102.	103.	104/A	104/B	105.	106.	107.
Martin No \ Sex.		Male	Male	Male	Female	Male	Male	Male	Female	Male	Male	Female	Male
7	R	63	52	56	57	61	52	56	60	61	58	60	53
	L	62	50	55	57	61	53	54	60	60	58	53	–
7a	R	68	56	65	64	67	56	62	65	69	62	62	57
	L	64	56	64	64	64	57	58	63	68	60	54	–
9	R	–	–	41	–	–	–	40	–	46	–	(44)	37
	L	–	–	40	–	–	–	–	–	48	–	45	–
Radius													
1	R	–	–	–	–	–	–	–	–	242	237	251	–
	L	–	–	–	216	–	–	–	–	–	238	250	206
2	R	–	–	–	–	–	–	–	–	229	223	237	–
	L	–	–	–	208	–	–	–	–	–	224	236	199
3	R	46	37	–	–	43	28	–	–	40	40	38	–
	L	–	–	–	38	39	29	38	39	37	40	36	33
4	R	17	14	–	–	16	14	–	–	19	16	16	–
	L	–	–	–	16	15	15	16	15	17	16	14	14
5	R	12	10	–	–	12	10	–	–	12	11	12	–
	L	–	–	–	11	11	10	11	11	12	11	11	9
Ulna													
1	R	–	–	–	–	–	–	–	–	–	–	277	–
	L	–	–	–	240	–	–	–	–	–	261	–	–
2	R	–	–	–	–	–	–	–	–	–	–	240	–
	L	–	–	–	211	–	–	–	–	–	228	–	–

Table 10 (continued)

Grave No.		72.	81.	82.	87.	93.	102.	103.	104/A	104/B	105.	106.	107.
Martin No \ Sex.		Male	Male	Male	Female	Male	Male	Male	Female	Male	Male	Female	Male
3	R	–	–	–	–	35	–	–	–	37	37	37	–
	L	–	–	–	34	–	–	34	–	–	35	32	–
11	R	13	–	–	–	12	–	–	–	13	12	13	–
	L	–	–	–	13	12	10	11	–	12	14	13	–
12	R	18	–	–	–	16	–	–	–	18	16	16	–
	L	–	–	–	14	15	13	17	–	17	16	16	–
13	R	–	–	–	–	–	–	–	–	22	–	22	–
	L	–	–	–	18	–	17	–	–	21	20	20	–
14	R	–	–	–	–	–	–	–	–	23	–	20	–
	L	–	–	–	23	–	19	–	–	22	23	20	–

Grave No.		136.	138.	139.	140.	141.	143.	144.	145.	149.	150.
Martin No \ Sex.		Male	Male	Male	Male	Female	Male	Female	Male	Male	Female
Clavicula											
1	R	–	–	129	158	141	–	(138)	150	–	–
	L	–	–	130	–	141	129	(141)	–	–	125
6	R	38	36	35	37	30	–	32	39	–	32
	L	39	38	37	36	29	35	31	42	37	30
Humerus											
1	R	–	309	(299)	–	299	308	306	350	–	–
	L	–	–	301	–	297	302	303	345	–	–
2	R	–	306	–	–	294	305	303	344	–	298
	L	–	–	296	–	292	297	300	340	–	–

Table 10 (continued)

Grave No.		136.	138.	139.	140.	141.	143.	144.	145.	149.	150.
Martin No \ Sex.		Male	Male	Male	Male	Female	Male	Female	Male	Male	Female
3	R	–	–	(43)	–	41	44	–	55	–	45
	L	–	–	45	–	41	–	45	53	–	44
4	R	–	60	(53)	64	53	57	55	70	–	–
	L	–	59	55	65	53	58	54	72	–	–
5	R	22	20	20	23	19	23	21	25	23	19
	L	22	19	20	21	19	21	20	24	22	19
6	R	18	15	16	18	14	17	16	20	20	14
	L	17	14	17	18	13	16	16	19	18	13
7	R	63	54	55	62	52	58	58	69	65	52
	L	62	53	55	61	50	57	56	66	64	50
7a	R	68	59	60	69	57	65	60	75	72	57
	L	65	58	59	65	54	62	60	70	69	55
9	R	–	(44)	–	–	37	40	40	47	–	38
	L	–	–	42	–	37	39	39	46	–	38
Radius											
1	R	–	235	222	246	232	–	–	270	–	–
	L	244	237	227	–	227	220	225	271	–	–
2	R	227	220	209	232	220	–	–	256	236	–
	L	228	222	214	–	217	207	210	256	–	–
3	R	44	34	36	39	35	37	–	49	45	33
	L	43	34	36	39	34	36	37	48	42	29
4	R	17	13	14	15	13	16	–	20	17	12

Table 10 (continued)

Grave No.		136.	138.	139.	140.	141.	143.	144.	145.	149.	150.
Martin No \ Sex.		Male	Male	Male	Male	Female	Male	Female	Male	Male	Female
	L	17	13	14	14	13	16	15	19	16	11
5	R	12	10	11	12	10	11	–	13	12	10
	L	12	10	11	11	10	11	11	14	12	9
Ulna											
1	R	–	–	248	–	249	(247)	–	294	–	–
	L	–	260	–	–	247	–	–	292	–	–
2	R	–	–	212	–	221	216	–	254	–	–
	L	–	224	–	236	218	–	211	252	–	–
3	R	38	–	34	–	28	32	–	40	39	–
	L	39	32	34	36	28	–	32	41	39	–
11	R	15	11	13	–	10	13	12	15	14	11
	L	15	11	14	15	9	13	11	15	14	–
12	R	18	15	16	–	12	16	17	18	18	14
	L	19	16	17	18	12	15	16	19	18	–
13	R	20	17	16	–	16	20	19	24	18	18
	L	23	20	17	20	17	19	19	24	22	–
14	R	24	21	20	–	20	24	22	27	21	19
	L	22	22	22	19	20	23	20	26	24	–

Table 10 (continued)

Grave No.		1.	4/A	10.	12.	14.	15.	19/A	20.	22.	25.	39.	41.
Martin No \ Sex.		Male	Male	Male	Male	Male	Female	Male	Male	Male	Male	Male	Male
Femur													
1	R	–	–	436	447	–	391	–	–	–	430	437	450
	L	418	–	432	447	–	–	–	–	–	427	436	453
2	R	–	–	433	441	–	388	–	–	–	427	433	447
	L	416	–	428	441	–	–	–	–	–	424	434	449
6	R	–	27	30	29	24	23	28	30	27	31	29	29
	L	28	28	30	29	24	24	26	30	29	31	29	31
7	R	–	26	26	27	27	23	28	27	25	30	28	28
	L	27	26	26	27	27	23	29	26	25	30	29	30
8	R	–	83	90	85	78	73	89	89	85	96	88	91
	L	84	87	89	90	81	75	–	90	89	95	90	97
9	R	–	30	30	32	29	28	35	31	33	35	32	35
	L	31	30	30	31	32	28	35	32	31	34	30	36
10	R	–	24	27	25	22	21	30	26	25	26	28	24
	L	24	26	28	25	23	21	30	28	25	26	29	28
21	R	–	–	86	–	–	–	–	–	–	–	(77)	84
	L	(79)	–	–	86	–	–	–	–	–	–	80	84
Tibia													
1	R	–	–	–	361	–	–	–	–	–	(348)	(357)	356
	L	339	–	–	365	–	–	–	–	–	(351)	(358)	355
1a	R	–	–	–	370	–	–	–	–	–	354	364	365
	L	343	–	–	371	–	–	–	–	–	357	364	362

Table 10 (continued)

Grave No.		1.	4/A	10.	12.	14.	15.	19/A	20.	22.	25.	39.	41.
Martin No \ Sex.		Male	Male	Male	Male	Male	Female	Male	Male	Male	Male	Male	Male
1b	R	–	–	–	357	–	–	–	(349)	–	(345)	(354)	(356)
	L	333	–	–	357	–	–	–	(354)	–	(350)	(357)	353
2	R	–	–	–	343	–	–	–	–	–	329	338	340
	L	320	–	–	343	–	–	–	–	–	332	340	337
8	R	27	26	–	28	–	22	24	28	–	29	28	30
	L	29	25	31	28	25	22	27	30	26	31	29	31
8a	R	32	31	–	33	–	29	36	32	–	35	34	39
	L	32	30	36	33	30	28	36	34	30	35	32	41
9	R	18	18	–	22	–	18	21	22	–	22	21	22
	L	19	20	23	23	21	16	22	22	20	21	21	21
9a	R	20	21	–	24	–	23	26	25	–	25	27	25
	L	19	21	25	25	21	20	23	25	23	24	25	25
10	R	73	77	–	83	–	66	82	82	–	87	78	85
	L	75	77	87	84	70	66	83	83	78	85	80	83
10b	R	66	68	–	75	–	–	75	77	–	78	73	77
	L	70	67	–	76	66	–	75	78	69	78	73	78
Calcaneum													
1	R	–	–	80	85	–	–	–	(80)	–	75	78	83
	L	–	–	80	85	73	–	–	–	–	–	78	84

Table 10 (continued)

Grave No.		43.	44.	49.	50.	51.	52.	54.	55.	57.	59.	62.
Martin No \ Sex.		Male	Female	Male	Female	Male	Male	Male	Female	Female	Female	Female
Femur												
1	R	448	–	–	400	439	–	435	411	459	389	–
	L	(443)	–	–	399	442	–	433	408	457	388	–
2	R	–	–	–	398	433	–	423	406	454	386	–
	L	–	–	–	397	437	–	–	403	453	386	–
6	R	28	26	28	25	28	26	31	20	25	24	30
	L	26	25	30	25	29	26	29	21	25	24	29
7	R	26	26	26	25	25	27	25	20	24	26	26
	L	26	26	28	25	26	29	26	21	24	25	25
8	R	84	83	85	82	85	84	90	66	78	79	90
	L	84	81	91	80	86	88	87	68	80	78	88
9	R	32	32	37	32	31	33	34	27	28	29	31
	L	34	30	36	32	30	31	35	26	30	26	31
10	R	25	23	25	22	24	23	23	19	22	22	25
	L	26	24	26	22	25	26	23	19	22	22	24
21	R	–	–	–	–	–	–	81	75	82	–	–
	L	–	–	–	–	83	–	–	70	82	–	–
Tibia												
1	R	–	–	–	–	338	–	–	321	(368)	–	–
	L	–	–	–	–	335	–	–	–	370	–	–
1a	R	–	–	–	331	345	–	354	325	(373)	–	–
	L	–	–	–	(329)	340	–	354	317	377	–	–

Table 10 (continued)

Grave No.		43.	44.	49.	50.	51.	52.	54.	55.	57.	59.	62.
Martin No \ Sex.		Male	Female	Male	Female	Male	Male	Male	Female	Female	Female	Female
1b	R	–	–	–	322	335	–	346	317	(359)	–	–
	L	–	–	–	–	330	–	348	312	364	–	–
2	R	–	–	–	310	321	–	330	304	348	–	–
	L	–	–	–	308	319	–	329	298	351	–	–
8	R	29	27	–	25	29	29	29	25	25	–	–
	L	–	24	29	28	30	28	31	24	25	–	–
8a	R	25	–	–	31	33	36	37	28	30	–	–
	L	–	28	36	33	35	35	36	26	31	–	–
9	R	20	18	–	20	18	19	22	17	17	–	–
	L	–	16	22	19	19	20	20	15	18	–	–
9a	R	24	–	–	24	22	23	23	18	18	–	–
	L	–	20	26	23	21	23	22	16	20	–	–
10	R	76	72	–	75	76	79	84	67	71	–	–
	L	–	67	–	75	78	79	84	65	72	–	–
10b	R	–	70	–	68	68	74	72	63	63	–	–
	L	–	67	–	68	69	74	71	59	64	–	–
Calcaneum												
1	R	–	–	–	69	–	–	–	67	–	–	–
	L	–	–	–	70	76	–	78	67	–	–	–

Table 10 (continued)

Grave No.		70.	72.	80.	82.	87.	93.	102.	103.	104/A	104/B	105.
Martin No \ Sex.		Female	Male	Female	Male	Female	Male	Male	Male	Female	Male	Male
Femur												
1	R	438	477	–	452	–	428	–	448	374	450	446
	L	–	–	438	456	–	432	–	–	378	446	440
2	R	434	473	–	448	–	426	–	447	371	448	444
	L	–	–	432	454	–	428	–	–	375	443	439
6	R	27	29	26	29	21	24	28	27	21	32	32
	L	26	29	25	29	–	24	29	26	22	30	33
7	R	24	29	24	28	24	24	28	26	23	30	28
	L	25	30	24	30	–	27	29	27	23	30	29
8	R	79	93	80	90	70	78	89	84	72	99	94
	L	81	93	78	92	64	80	91	84	73	94	95
9	R	28	35	–	35	27	31	35	31	27	35	34
	L	31	33	25	33	–	32	34	33	27	36	36
10	R	23	26	–	24	19	22	26	24	19	29	26
	L	24	26	24	26	–	22	26	23	21	29	26
21	R	–	–	–	80	–	–	–	–	–	(84)	83
	L	–	–	–	–	–	–	–	–	–	(82)	83
Tibia												
1	R	355	–	–	365	–	–	–	–	313	372	–
	L	–	–	–	–	–	–	–	–	–	–	376
1a	R	361	–	367	373	–	–	–	–	316	377	–
	L	–	–	–	369	–	–	–	381	317	–	384

Table 10 (continued)

Grave No.		70.	72.	80.	82.	87.	93.	102.	103.	104/A	104/B	105.
Martin No \ Sex.		Female	Male	Female	Male	Female	Male	Male	Male	Female	Male	Male
1b	R	349	–	–	363	–	–	–	–	311	370	–
	L	–	–	–	360	–	–	–	–	310	–	375
2	R	341	–	348	345	–	–	–	–	293	356	362
	L	343	–	346	345	–	–	–	355	296	351	360
8	R	24	29	25	28	22	23	27	27	23	29	29
	L	22	28	24	29	21	25	28	25	25	29	29
8a	R	28	33	32	30	24	27	32	30	27	38	35
	L	26	32	30	30	–	27	32	29	27	36	35
9	R	19	19	17	19	16	18	20	18	16	25	23
	L	19	18	18	20	15	18	20	17	16	26	22
9a	R	21	20	20	23	16	20	23	21	20	27	24
	L	20	19	20	22	–	19	21	20	19	27	23
10	R	73	80	67	78	63	68	78	73	68	88	86
	L	70	78	70	78	58	70	77	72	68	89	83
10b	R	68	65	62	69	53	63	69	65	62	80	75
	L	67	–	62	68	53	62	70	64	62	80	74
Calcaneum												
1	R	78	–	–	80	–	82	82	–	–	–	78
	L	78	–	–	–	–	81	80	86	71	81	79

Table 10 (continued)

Grave No.		106.	107.	109.	111.	123.	124.	125.	127.	128.	129.	131.
Martin No \ Sex.		Female	Male	Male	Female	Female	Male	Female	Female	Male	Male	Male
Femur												
1	R	435	443	477	–	(389)	–	–	–	–	451	418
	L	434	438	479	–	–	453	387	–	–	448	418
2	R	431	438	472	–	–	–	–	–	–	447	412
	L	432	436	473	–	–	451	381	–	–	447	413
6	R	23	32	34	24	25	26	–	–	28	33	26
	L	24	32	33	22	25	27	22	25	28	33	25
7	R	23	26	29	25	26	27	–	–	28	28	27
	L	24	28	28	27	24	27	25	25	28	29	28
8	R	71	92	100	76	78	83	–	–	86	98	87
	L	76	92	98	78	80	85	75	80	87	99	86
9	R	27	31	35	29	29	29	–	–	31	30	32
	L	29	31	36	31	27	29	27	29	32	31	34
10	R	21	28	24	29	23	25	–	–	23	28	25
	L	22	29	26	20	25	27	24	23	25	30	23
21	R	73	–	–	–	–	–	–	–	–	–	79
	L	73	–	–	–	–	–	–	–	–	–	79
Tibia												
1	R	358	–	–	–	–	–	–	–	–	–	346
	L	–	361	389	–	–	–	–	–	–	–	347
1a	R	364	367	394	(328)	–	–	–	–	351	–	352
	L	363	368	397	–	–	–	–	–	–	–	354

Table 10 (continued)

Grave No.		106.	107.	109.	111.	123.	124.	125.	127.	128.	129.	131.
Martin No \ Sex.		Female	Male	Male	Female	Female	Male	Female	Female	Male	Male	Male
1b	R	–	358	386	–	–	–	–	–	345	–	342
	L	–	360	387	–	–	–	–	–	–	–	345
2	R	344	345	368	304	–	–	–	–	328	–	326
	L	343	343	372	–	–	–	–	–	–	–	329
8	R	22	30	33	24	25	28	–	–	29	30	29
	L	23	31	34	22	–	28	–	27	27	28	27
8a	R	25	36	38	27	(31)	33	–	–	34	35	31
	L	27	33	36	26	–	33	–	21	34	33	31
9	R	17	22	24	19	19	21	–	–	20	22	20
	L	17	21	22	18	–	20	–	19	20	22	20
9a	R	19	24	25	19	20	22	–	–	22	28	22
	L	19	24	25	19	–	22	–	21	21	25	23
10	R	66	84	91	67	72	80	–	–	82	85	82
	L	65	83	92	66	–	79	–	75	81	83	80
10b	R	59	75	82	64	70	71	–	–	73	74	74
	L	66	74	80	62	–	72	–	65	73	75	69
Calcaneum												
1	R	74	85	–	–		71	–	–	–	–	–
	L	74	84	–	–		–	–	72	–	–	74

Table 10 (continued)

Grave No.		132.	133.	136.	138.	139.	141.	143.	144.	145.	148.	149.
Martin No \ Sex.		Male	Female	Male	Male	Male	Female	Male	Female	Male	Female	Male
Femur												
1	R	421	(372)	433	424	396	411	403	–	470	–	–
	L	(420)	376	430	426	397	414	398	–	470	–	–
2	R	418	(369)	426	422	392	408	402	–	466	–	–
	L	(415)	374	425	423	395	410	397	–	466	–	–
6	R	25	22	29	26	25	23	28	26	29	22	29
	L	25	23	29	27	25	23	29	26	30	21	28
7	R	25	25	27	25	23	24	25	26	29	25	30
	L	28	26	28	26	28	24	28	26	30	25	31
8	R	82	78	89	80	78	76	85	80	94	75	93
	L	84	78	89	82	78	77	89	81	94	73	92
9	R	35	30	32	30	27	28	33	31	36	29	35
	L	31	29	30	30	26	29	33	29	40	28	36
10	R	25	23	29	25	22	20	24	23	26	20	27
	L	22	22	28	26	24	21	25	24	26	22	26
21	R	80	–	–	–	77	71	–	–	84	–	85
	L	77	–	(83)	–	76	70	–	–	84	–	84

Table 10 (continued)

Grave No.		106.	107.	109.	111.	123.	124.	125.	127.	128.	129.	131.
Martin No \ Sex.		Female	Male	Male	Female	Female	Male	Female	Female	Male	Male	Male
Tibia												
1	R	350	–	–	–	(328)	340	337	–	–	–	–
	L	347	–	–	–	(325)	340	342	–	406	–	–
1a	R	355	–	361	355	(333)	345	344	337	406	340	–
	L	353	–	356	351	(329)	345	348	–	410	–	–
1b	R	345	–	353	–	(322)	337	335	327	399	335	–
	L	344	–	348	–	(320)	337	339	–	402	–	–
2	R	331	297	337	331	(309)	324	319	314	383	318	–
	L	330	295	332	327	(305)	324	–	–	384	–	–
8	R	29	25	28	24	25	24	29	27	33	23	27
	L	30	25	28	25	27	23	29	27	36	23	29
8a	R	33	28	31	29	30	28	37	30	39	30	33
	L	31	28	31	29	30	28	33	30	41	28	34
9	R	19	19	23	18	19	18	22	18	27	19	22
	L	20	18	23	19	19	19	21	18	25	18	21
9a	R	21	20	26	22	22	20	26	19	29	21	25
	L	21	19	26	22	21	20	24	19	27	19	23

Table 10 (continued)

Grave No.		106.	107.	109.	111.	123.	124.	125.	127.	128.	129.	131.
Martin No \ Sex.		Female	Male	Male	Female	Female	Male	Female	Female	Male	Male	Male
10	R	79	71	84	70	73	71	82	73	93	68	79
	L	78	71	86	71	75	68	81	72	97	66	80
10b	R	70	66	77	64	70	61	72	65	83	65	72
	L	70	65	77	64	71	61	72	64	84	61	72
Calcaneum												
1	R	77	–	–	79	–	72	74	70	85	–	–
	L	79	68	82	79	67	72	73	69	85	–	–

Table 11. Cranial nonmetric traits of individuals (male = M, female = F)

Grave No.	1.	2.	3.	4/A	4/B	5.	7.	8/A	9.	12.
Nonmetric traits	M	F	M	M	M	M	M	F	M	M
Sutura metopica	1	0	0	0	0	0	0	0	0	0
Sutura supranasalis	1	0	0	0		0	0	0	0	0
Foramen supraorbitale mediale L	1	0	0	0			1	0	1	0
Foramen supraorbitale mediale R	0	0	0	0	0	1	1	0	1	0
Foramen supraorbitale laterale L	0	0	0	0			0	0	0	0
Foramen supraorbitale laterale R	0	0	0	0	0	0	0	0	0	0
Incisura supraorbitale medialis L	0	1	0	0			0	0	0	1
Incisura supraorbitale medialis R	0	1	0	0	1	0	1	1	0	1
Foramen infraorbitale accessorius L		0		0	0			0	0	
Foramen infraorbitale accessorius R		0			0	0			0	
Tuberculum zygomaxillare L		0	0	1	1			0		0
Tuberculum zygomaxillare R		1		1	1	0			0	
Depressio bipariet. circumscripta L	0	0	0	0	0	0	1	0	0	0
Depressio bipariet. circumscripta R	0	0	0	0	0	0	1	0	0	0
Ossa suturae coronalis L	0	0	0	0	0	0	0	0	0	0
Ossa suturae coronalis R	0	0	0	0	0	0	0	0	0	0
Os bregmaticum	0	0	0	0	0	0	0	0	0	0
Ossa suturae sagittalis	3	0	0	0	0	0	0	0	0	0
Foramen parietale L	0	0	0	0	0	1	0	1	0	1
Foramen parietale R	0	0	0	0	0	1	0	0	1	1
Os epiptericum L		0			0				0	
Os epiptericum R		0			0	0			0	
Os astericum L					0				0	
Os astericum R					0			0	0	
Ossa suturae occipitomastoidea L					0				0	
Ossa suturae occipitomastoidea R					0			0	0	
Os parietale bipartitum L	0	0			0	0	0	0	0	0
Os parietale bipartitum R	0	0		0	0	0	0	0	0	
Tuberculum marginale L		0	0	0	0			0	0	0
Tuberculum marginale R		0		1	0	0			0	
Foramen mastoidale L					0				0	
Foramen mastoidale R				0	0			0	0	0
Foramen occipitale								0		
Os lambdae	0			0				0	0	0

Table 11 (continued)

Grave No.	1.	2.	3.	4/A	4/B	5.	7.	8/A	9.	12.
Nonmetric traits	M	F	M	M	M	M	M	F	M	M
Ossa suturae lamboidea L				0					0	0
Ossa suturae lamboidea R								1	0	
Os incae	0			0				0	0	0
Linea nuchae suprema L	0			0	0			0	0	0
Linea nuchae suprema R	0				0			0	0	0
Ponticuli palatini É		0		0				0	1	0
Ponticuli palatini R		0		0	0				1	0
Torus palatinus		0		0	0				0	0
Torus maxillaris		0		0	0				0	0
Foramen palatinus minus access. L		0	0					0	0	
Foramen palatinus minus access. R		0		1	0				0	
Tuberculum praecondylare L		0			1				0	0
Tuberculum praecondylare R		2			1				0	0
Facies condylaris bipartita L		0			0					0
Facies condylaris bipartita R		0			0					
Spina mentalis	0		1	1	0	0	3	0		0
Foramen mandibularis bipartita L	0		0	0	0		0	0		0
Foramen mandibularis bipartita R	0		0	0	0	0	0	0		0
Torus mandibularis L	0	0	0	0	0		0	0		0
Torus mandibularis R	0		0	0	0	0	0	0		0

Grave No.	13/A	13/B	14.	15.	17.	18.	19/A	25.	22.
Nonmetric traits	F	M	M	F	F	F	M	M	M
Sutura metopica	0	0	0	0	1	0	0	0	0
Sutura supranasalis	1		0	0		0	1	0	1
Foramen supraorbitale mediale L	0		0	1		1	1		1
Foramen supraorbitale mediale R	0			0	0	0	0	0	1
Foramen supraorbitale laterale L	0		0	0		0	0		1
Foramen supraorbitale laterale R	0		0	0	0	0	0	0	1
Incisura supraorbitale medialis L	1		0			0	0		0
Incisura supraorbitale medialis R	1			1	1		1	1	0
Foramen infraorbitale accessorius L	0						0		0
Foramen infraorbitale accessorius R	0						0		0
Tuberculum zygomaxillare L	0						1		0
Tuberculum zygomaxillare R	0						1		0

Table 11 (continued)

Grave No.	13/A	13/B	14.	15.	17.	18.	19/A	25.	22.
Nonmetric traits	F	M	M	F	F	F	M	M	M
Depressio bipariet. circumscripta L		0	0	0		0	0	0	0
Depressio bipariet. circumscripta R			0	0		0	0	0	0
Ossa suturae coronalis L	0	0	0	0	0	0	0	0	0
Ossa suturae coronalis R		0	0	0	0	0	0	0	0
Os bregmaticum	0	0	0	0	0	0	0	0	0
Ossa suturae sagittalis		0	0	0	0	0	0	0	0
Foramen parietale L		0	1	1	0	0	1	1	1
Foramen parietale R			1	1	0	0	1	0	0
Os epiptericum L									0
Os epiptericum R							0	0	0
Os astericum L		0							0
Os astericum R				0				0	
Ossa suturae occipitomastoidea L									0
Ossa suturae occipitomastoidea R								0	0
Os parietale bipartitum L			0	0			0	0	0
Os parietale bipartitum R			0	0			0	0	0
Tuberculum marginale L		0					0		1
Tuberculum marginale R			1				0	0	1
Foramen mastoidale L		0					0		1
Foramen mastoidale R							0	1	0
Foramen occipitale				0				0	0
Os lambdae				0	0	0		1	0
Ossa suturae lamboidea L				0				2	2
Ossa suturae lamboidea R				0		0		2	0
Os incae				0	0	0		0	0
Linea nuchae suprema L				0		0		0	0
Linea nuchae suprema R				0		0		0	0
Ponticuli palatini É						0	0		1
Ponticuli palatini R						0	0		1
Torus palatinus						1	0		
Torus maxillaris						0	0	0	0
Foramen palatinus minus access. L							0		0
Foramen palatinus minus access. R						0	0		0
Tuberculum praecondylare L							0	0	0

Table 11 (continued)

Grave No.	13/A	13/B	14.	15.	17.	18.	19/A	25.	22.
Nonmetric traits	F	M	M	F	F	F	M	M	M
Tuberculum praecondylare R							0	0	0
Facies condylaris bipartita L									1
Facies condylaris bipartita R								0	
Spina mentalis			1			0	2	0	1
Foramen mandibularis bipartita L			0			0	0		0
Foramen mandibularis bipartita R			0			0	0	0	0
Torus mandibularis L			0			0	0	0	0
Torus mandibularis R			0			0	0	0	0

Grave No.	28.	36A	39.	41.	42.	43.	45.	49.	51.
Nonmetric traits	F	F	M	M	M	M	F	M	M
Sutura metopica	0	0	0	0	0	1	0	0	1
Sutura supranasalis	1	1	1	0	1	0	0		1
Foramen supraorbitale mediale L	0		0	0	0	1	1		0
Foramen supraorbitale mediale R	0	0	0	0	0	1	1		0
Foramen supraorbitale laterale L	0	0	0	0	0	0	0		0
Foramen supraorbitale laterale R	0	0	0	0	0	0	0		0
Incisura supraorbitale medialis L	0		1	1	0	0	1		0
Incisura supraorbitale medialis R	0	1	1	1	1	1	0		1
Foramen infraorbitale accessorius L		0	0	0		0	0		0
Foramen infraorbitale accessorius R		0	0	0			0		1
Tuberculum zygomaxillare L		0	1	0	0	1	1		0
Tuberculum zygomaxillare R		0	1	0			1		0
Depressio bipariet. circumscripta L	0	0	0	1	0	0	0	0	0
Depressio bipariet. circumscripta R	0	0	0	1	0	0	0	0	0
Ossa suturae coronalis L	0	0	0	0		0	0		0
Ossa suturae coronalis R	0	0	0	0		0	0	0	0
Os bregmaticum	0	0	0	0		0	0	0	0
Ossa suturae sagittalis	0	0	0	0	0	0	0	0	0
Foramen parietale L	1	0	0	1	1	0	0	0	0
Foramen parietale R	1	0	0	0	1	0	0	0	0
Os epiptericum L		0	0	0		0	0		0
Os epiptericum R		0	0	0			0		0
Os astericum L			0	0			0		1
Os astericum R			0	0			0		0

Table 11 (continued)

Grave No.	28.	36A	39.	41.	42.	43.	45.	49.	51.
Nonmetric traits	F	F	M	M	M	M	F	M	M
Ossa suturae occipitomastoidea L			0	0			0		0
Ossa suturae occipitomastoidea R			0	0			1		0
Os parietale bipartitum L	0	0	0	0			0	0	0
Os parietale bipartitum R	0	0	0	0			0	0	0
Tuberculum marginale L		0	3	1	0	2	0		1
Tuberculum marginale R		0	2	1			1		1
Foramen mastoidale L		0	0	0			0		0
Foramen mastoidale R			0	0			0		0
Foramen occipitale		0	0	0				0	0
Os lambdae	0		0	0	0		0	0	0
Ossa suturae lamboidea L			0	0			2	3	1
Ossa suturae lamboidea R			0	0	0		2	3	1
Os incae			0	0	0		0	0	0
Linea nuchae suprema L			0	0			1	0	0
Linea nuchae suprema R			0	0			1	0	0
Ponticuli palatini É		0	0	0		0	0		0
Ponticuli palatini R		0	0	0	0	0	0		0
Torus palatinus		0	0	0		1	0		0
Torus maxillaris		0	0	0	0	0	0		0
Foramen palatinus minus access. L		0	0	0		0	0		0
Foramen palatinus minus access. R		0	0	0	0	0	0		0
Tuberculum praecondylare L		0	0	0			0		0
Tuberculum praecondylare R		0	0	0			0		0
Facies condylaris bipartita L		0	0	0			0		0
Facies condylaris bipartita R		0	0	0			0		0
Spina mentalis		0	0	0	1	0	2	1	2
Foramen mandibularis bipartita L		0	0	0	0	0	0	0	0
Foramen mandibularis bipartita R		0	0	0	0		0	0	0
Torus mandibularis L		0	0	0	0		0	0	0
Torus mandibularis R		0	0	0	0		0	0	0

Grave No.	54.	55.	57.	59.	62.	63.	64.	65.	69.
Nonmetric traits	M	F	F	F	F	F	F	F	M
Sutura metopica	0	1	0	0	0	0	0	0	0
Sutura supranasalis	1	1		0	0	1	0	0	0

Table 11 (continued)

Grave No.	54.	55.	57.	59.	62.	63.	64.	65.	69.
Nonmetric traits	M	F	F	F	F	F	F	F	M
Foramen supraorbitale mediale L	0	0		0	0	0	0	0	0
Foramen supraorbitale mediale R	0	1		0	1	0	0	0	0
Foramen supraorbitale laterale L	0	0		0	1	0	0	0	0
Foramen supraorbitale laterale R	0	0		0	0	0	0		0
Incisura supraorbitale medialis L	1	1		1	1	1	1	1	0
Incisura supraorbitale medialis R	1	0		1	0	1	1	0	0
Foramen infraorbitale accessorius L		0	1	0	0		0		
Foramen infraorbitale accessorius R		0		0					
Tuberculum zygomaxillare L	0	0	0	0		0			
Tuberculum zygomaxillare R	0	0		0					
Depressio bipariet. circumscripta L	0	0	0	0	0	0	0		0
Depressio bipariet. circumscripta R	0	0	0	0	0	0	0		0
Ossa suturae coronalis L	0	0	0	0	0	0	0		
Ossa suturae coronalis R	0	0	0	0	0	0	0		
Os bregmaticum	0	0	0	0	0	0	0		
Ossa suturae sagittalis	0	0	0	0	2	0	0	0	0
Foramen parietale L	0	0	0	0	0	0	1	0	0
Foramen parietale R	1	0	0	0	0	0	0	0	0
Os epiptericum L		0	0	0	0				
Os epiptericum R			0	0	0		0		
Os astericum L		0	0	0	0				
Os astericum R		0	0	0			0		
Ossa suturae occipitomastoidea L		0		0	0				
Ossa suturae occipitomastoidea R		0		0	0		0		
Os parietale bipartitum L		0	0	0	0		0		
Os parietale bipartitum R	0	0	0	0	0	0	0		
Tuberculum marginale L	1	0	1	1					
Tuberculum marginale R	1	0	0	1	0	0			
Foramen mastoidale L		0		0	0				
Foramen mastoidale R		0		0	0		0		
Foramen occipitale		0	0	0	0		0	0	0
Os lambdae		0	1	1	1		0	0	0
Ossa suturae lamboidea L		0	0	2	2				
Ossa suturae lamboidea R	0	0	0	1	2		0	0	

Table 11 (continued)

Grave No.	54.	55.	57.	59.	62.	63.	64.	65.	69.
Nonmetric traits	M	F	F	F	F	F	F	F	M
Os incae	0	0	0	0	0		0	0	0
Linea nuchae suprema L	0	0	0	0	0		0		0
Linea nuchae suprema R	0	0	0	0	0		0		0
Ponticuli palatini É	0	0	0	0			0		
Ponticuli palatini R	0	0	0	0			0	0	
Torus palatinus		0		0			0		
Torus maxillaris	0	0	0	0			0	0	0
Foramen palatinus minus access. L	0	0	0	0			0		
Foramen palatinus minus access. R	0	0	0	0			0	0	
Tuberculum praecondylare L		0		0	0		0		
Tuberculum praecondylare R		0		0	0		0		
Facies condylaris bipartita L		0		0	0				
Facies condylaris bipartita R		0		0	0		0		0
Spina mentalis	0	1	1	0	0	1	1	0	0
Foramen mandibularis bipartita L	0	0	0	0	0	0	0	0	0
Foramen mandibularis bipartita R	0	0	0	0	0	0	0	0	0
Torus mandibularis L	0	0	0	0	0	0	0		0
Torus mandibularis R	0	0	0	0	0	0	0		0
Grave No.	70.	72.	73.	78.	80.	81.	82.	93.	94.
Nonmetric traits	F	M	M	M	F	M	M	M	M
Sutura metopica	0	0		0	0	0	0	0	0
Sutura supranasalis	0	0		0		0	0	0	0
Foramen supraorbitale mediale L	0			0		1	0	0	0
Foramen supraorbitale mediale R	0	0		0		0	0	0	0
Foramen supraorbitale laterale L	0	0		0		0	0	0	0
Foramen supraorbitale laterale R	0	0	0	0		0	0	0	0
Incisura supraorbitale medialis L	1	0		1		0	1	1	1
Incisura supraorbitale medialis R	1	0		1		1	1	1	1
Foramen infraorbitale accessorius L	0					0	0	0	0
Foramen infraorbitale accessorius R	0	0					0	0	0
Tuberculum zygomaxillare L	0	0		0		0	0	0	1
Tuberculum zygomaxillare R	0	0		0			0	0	0
Depressio bipariet. circumscripta L	0	1		0		0	0	0	1
Depressio bipariet. circumscripta R	0	1		0		0	0	0	1

Table 11 (continued)

Grave No.	70.	72.	73.	78.	80.	81.	82.	93.	94.
Nonmetric traits	F	M	M	M	F	M	M	M	M
Ossa suturae coronalis L	0	0		0		0	0	0	0
Ossa suturae coronalis R	0	0		0		0	0	0	0
Os bregmaticum	0	0		0		0	0	0	0
Ossa suturae sagittalis	0	0		0		0	0	0	0
Foramen parietale L	0	1		0		1	0	0	0
Foramen parietale R	0	0		0	1	1	0	0	0
Os epiptericum L		0					0	0	1
Os epiptericum R		0					0	0	1
Os astericum L	0	0		0	0	0		0	0
Os astericum R	0	0			0	0		1	0
Ossa suturae occipitomastoidea L	0	0		0	0	0		0	0
Ossa suturae occipitomastoidea R	0	0			0	0		1	0
Os parietale bipartitum L	0	0			0	0	0	0	0
Os parietale bipartitum R	0	0			0	0	0	0	0
Tuberculum marginale L	2	0				0	0	1	0
Tuberculum marginale R		2					1	1	0
Foramen mastoidale L	1	1			0	0		0	
Foramen mastoidale R	1	1			1	0		0	0
Foramen occipitale	0	0		0	0	0		0	
Os lambdae	0	0		0	0	0	0	0	0
Ossa suturae lamboidea L	0	1		1	1	0		0	3
Ossa suturae lamboidea R	1	2		0	2	0		0	2
Os incae	0	0		0	0	0	0	0	0
Linea nuchae suprema L	0	0		0	0	0		0	
Linea nuchae suprema R	0	0		0	0	0		0	
Ponticuli palatini É		0					0	0	0
Ponticuli palatini R		0					0	0	0
Torus palatinus		1	0				1	0	0
Torus maxillaris	0	1	0				0	0	0
Foramen palatinus minus access. L		0					0	0	
Foramen palatinus minus access. R		0					0	0	
Tuberculum praecondylare L		0		0	0	0		0	0
Tuberculum praecondylare R		0		0	0	0		0	0
Facies condylaris bipartita L		0		0	2	0		0	

Table 11 (continued)

Grave No.	70.	72.	73.	78.	80.	81.	82.	93.	94.
Nonmetric traits	F	M	M	M	F	M	M	M	M
Facies condylaris bipartita R		0			2	0		0	
Spina mentalis	1	3	1	0	0	0	0	0	0
Foramen mandibularis bipartita L	0	0	0	0	0	0	0	0	0
Foramen mandibularis bipartita R	0	0	0	0	0	0	0	0	0
Torus mandibularis L	0	0	0	0	0	0	0	0	0
Torus mandibularis R	0	0	0	0	0	0	0	0	0
Grave No.	102.	103.	104/A	104/B	105.	106.	107.	108.	109.
Nonmetric traits	M	M	F	M	M	F	M	F	M
Sutura metopica	0	0	0	0	0	0	0	0	0
Sutura supranasalis	0	0	0	1	0	0	1	0	0
Foramen supraorbitale mediale L	0	0	0	0	0	0	0	0	0
Foramen supraorbitale mediale R	0	0	0	0	0		0	0	0
Foramen supraorbitale laterale L	0	0	0	0	0	0	0	0	0
Foramen supraorbitale laterale R	0	0	0	0	0		0	0	0
Incisura supraorbitale medialis L	1	1	1	1	1	0	1	1	1
Incisura supraorbitale medialis R	1	1	1	1	1		1	1	0
Foramen infraorbitale accessorius L		0	0	0	0		0		0
Foramen infraorbitale accessorius R		0	0	0	0		0		
Tuberculum zygomaxillare L		0	0	1	0		1		0
Tuberculum zygomaxillare R		0	0	0	0		1		0
Depressio bipariet. circumscripta L	0	0	0	0	0	0	0	0	0
Depressio bipariet. circumscripta R	0	0	0	0	0	0	0	0	0
Ossa suturae coronalis L	0	0	0	0	0		0	0	0
Ossa suturae coronalis R	0	0	0	0	0		0	0	0
Os bregmaticum	0	0	0	0	0	0	0	0	0
Ossa suturae sagittalis	0	0	0	0	0	0	0	0	0
Foramen parietale L	0	0	1	0	0	0	0	1	0
Foramen parietale R	0	0	1	0	0	0	0	1	0
Os epiptericum L			0	0	0		0	1	0
Os epiptericum R			0	0	0		0		0
Os astericum L	0	0	0	0	0	0	0	0	0
Os astericum R	0	0		1	0	0	0		0
Ossa suturae occipitomastoidea L	0		0	0	0	0	0	0	0
Ossa suturae occipitomastoidea R				0	0	0	0		0

Table 11 (continued)

Grave No.	102.	103.	104/A	104/B	105.	106.	107.	108.	109.
Nonmetric traits	M	M	F	M	M	F	M	F	M
Os parietale bipartitum L	0	0	0	0	0	0	0	0	0
Os parietale bipartitum R	0	0	0	0	0	0	0	0	0
Tuberculum marginale L		0	1	1	1		2		0
Tuberculum marginale R	0	0	1	0	1		2		0
Foramen mastoidale L	1	1	1	0	0	1	0	0	1
Foramen mastoidale R		1		0	0	0	1		1
Foramen occipitale	0	0	0	0	0	0	3	0	0
Os lambdae	0	0	0	0	0	0	0	1	0
Ossa suturae lamboidea L	0	0	0	0	2	0	0	3	0
Ossa suturae lamboidea R	0	0	0	0	3	0	1	2	0
Os incae	0	0	0	0	0	0	0	0	0
Linea nuchae suprema L	0	0	0	0	0	0	0		
Linea nuchae suprema R	0	0	0	0	0	0	0		
Ponticuli palatini É		0		0			0		0
Ponticuli palatini R		0		0			0		0
Torus palatinus		0		2			2		0
Torus maxillaris		0		0	0	0	0		0
Foramen palatinus minus access. L		0		0			0		0
Foramen palatinus minus access. R		0		0			0		0
Tuberculum praecondylare L		0	0	0		0	0		0
Tuberculum praecondylare R		0	0	0		0	0		0
Facies condylaris bipartita L		0	0	0		0	0		0
Facies condylaris bipartita R		0	0	0		0	0		0
Spina mentalis	0	0	0	0	0	1	1	0	1
Foramen mandibularis bipartita L	0	0	0	0	0	0	0	0	
Foramen mandibularis bipartita R	0	0	0	0	0	0	0	0	
Torus mandibularis L	0	0	0	0	0	0	0	0	0
Torus mandibularis R	0	0	0	0	0	0	0	0	0

Grave No.	110.	111.	112.	113.	118.	120.	122.	123.	124.
Nonmetric traits	M	F	F	M	F	F	F	F	M
Sutura metopica	0	0	0	0	1	0	0	0	1
Sutura supranasalis	0	0	1	0	1	0	0	0	1
Foramen supraorbitale mediale L	0	0	0	0	0	0	1	0	1
Foramen supraorbitale mediale R	0	0	0	0		0	1	0	0

Table 11 (continued)

Grave No.	110.	111.	112.	113.	118.	120.	122.	123.	124.
Nonmetric traits	M	F	F	M	F	F	F	F	M
Foramen supraorbitale laterale L	0	0	0	0		0	0	0	0
Foramen supraorbitale laterale R	0	0	0	0		0		0	0
Incisura supraorbitale medialis L	1	1	1	1	1	1	1	0	0
Incisura supraorbitale medialis R	1	1	0	1		1	1	1	1
Foramen infraorbitale accessorius L	0	0		0			0		0
Foramen infraorbitale accessorius R	0	0	0	0		0			0
Tuberculum zygomaxillare L	0	1	0	0			0		1
Tuberculum zygomaxillare R	0	1	0	0					1
Depressio bipariet. circumscripta L	0	1	0	0	0	0	0	1	1
Depressio bipariet. circumscripta R	0	1	0	0	0	0	0	1	1
Ossa suturae coronalis L	0	0	0	0	0	0	0	0	0
Ossa suturae coronalis R	0	0	0	0	0	0	0	0	0
Os bregmaticum	0	0	0	0	0	0	0	0	0
Ossa suturae sagittalis	0	0	0	0		0	0	0	0
Foramen parietale L	1	0	0	1			0	0	1
Foramen parietale R	1	1	0	1		1	0	0	1
Os epiptericum L	0	0	0	0			0		0
Os epiptericum R	0	0	0	0				0	
Os astericum L		0	0	0				0	0
Os astericum R	0	0	0	0				0	0
Ossa suturae occipitomastoidea L		0	0	0				0	0
Ossa suturae occipitomastoidea R		0		0				0	1
Os parietale bipartitum L	0	0	0	0			0	0	0
Os parietale bipartitum R	0	0	0	0			0	0	0
Tuberculum marginale L	1	0	0	3			0		1
Tuberculum marginale R	0	0	1	3		0	0		1
Foramen mastoidale L		0		0				1	1
Foramen mastoidale R	1	0		0				1	1
Foramen occipitale		0		1				0	0
Os lambdae	1	0	0	0				0	0
Ossa suturae lamboidea L	3	0	1	1					2
Ossa suturae lamboidea R	2	0	2	1					0
Os incae	0	0	0	0				0	0
Linea nuchae suprema L		1		0				0	0

Table 11 (continued)

Grave No.	110.	111.	112.	113.	118.	120.	122.	123.	124.
Nonmetric traits	M	F	F	M	F	F	F	F	M
Linea nuchae suprema R		1		0				0	0
Ponticuli palatini É	0	0	0	0				0	0
Ponticuli palatini R	0	0	0	0				0	0
Torus palatinus	0	0	0	1				0	0
Torus maxillaris	0	0	0	0				0	0
Foramen palatinus minus access. L	0	0	0	0				0	0
Foramen palatinus minus access. R	0	0	0	0				0	0
Tuberculum praecondylare L	0	0		0					0
Tuberculum praecondylare R	0	0		0					0
Facies condylaris bipartita L	0	0		0					
Facies condylaris bipartita R		0		0				0	
Spina mentalis	0	0		2	1		0	0	0
Foramen mandibularis bipartita L	0	0	0	0			0	0	0
Foramen mandibularis bipartita R	0	0	0	0		0		0	0
Torus mandibularis L	0		0	0	0		0	0	0
Torus mandibularis R	0		0	0	0	0		0	0
Grave No.	125.	127.	128.	129.	130.	131.	132.	133.	136.
Nonmetric traits	F	F	M	M	M	M	M	F	M
Sutura metopica	0	1	0	0	0	0	0	0	0
Sutura supranasalis	0	0	0	0	0	1	1	0	1
Foramen supraorbitale mediale L	1	0	0	1	0	0	0	1	0
Foramen supraorbitale mediale R	0	0	0	0	0	0	0	1	0
Foramen supraorbitale laterale L	0	0	0	0	0	0	0	0	0
Foramen supraorbitale laterale R	0	0	0	0	0	0	0	0	0
Incisura supraorbitale medialis L	0	1	1	0	1	1	1	0	1
Incisura supraorbitale medialis R	1	1	1	1	1	1	1	1	1
Foramen infraorbitale accessorius L	0	0		0	0	0	0	0	0
Foramen infraorbitale accessorius R	0	0		0	0	0	0	0	0
Tuberculum zygomaxillare L	0	0	0	0	0	0	0	0	0
Tuberculum zygomaxillare R	0	0		0		0	0	0	0
Depressio bipariet. circumscripta L	0	1	0	0	0	0	0	0	0
Depressio bipariet. circumscripta R	0	1	0	0	0	0	0	0	0
Ossa suturae coronalis L	0	0	0	0	0	0	0	0	0
Ossa suturae coronalis R	0	0	0	0	0	0	0	0	0

Table 11 (continued)

Grave No.	125.	127.	128.	129.	130.	131.	132.	133.	136.
Nonmetric traits	F	F	M	M	M	M	M	F	M
Os bregmaticum	0	0	0	0	0	0	0	0	0
Ossa suturae sagittalis	0	0	0	0	0	0	0	0	0
Foramen parietale L	1	0	0	1	0		0	1	0
Foramen parietale R	0	0	0	1	0		0	1	0
Os epiptericum L		0	0	0	0	0	0	0	0
Os epiptericum R		0	0	0		0	0	0	0
Os astericum L		0		1	0				0
Os astericum R		0	0	1			0		0
Ossa suturae occipitomastoidea L		0		0	0				0
Ossa suturae occipitomastoidea R		0	0	0			0		0
Os parietale bipartitum L		0	0	0	0	0	0	0	0
Os parietale bipartitum R		0	0	0	0	0	0	0	0
Tuberculum marginale L	0	0		1	1	0	0	0	1
Tuberculum marginale R		0	0	2		0	0	2	0
Foramen mastoidale L		0	1	0	1				0
Foramen mastoidale R		0	1	0			0	0	0
Foramen occipitale	0	0		0					0
Os lambdae		0	0	0	0		0		1
Ossa suturae lamboidea L		2	0	1	1				0
Ossa suturae lamboidea R		1	0	0			0	0	0
Os incae	0	0	0	0	0		0	0	0
Linea nuchae suprema L		0		0	0				0
Linea nuchae suprema R		0	0	0	0				0
Ponticuli palatini É			1	1	1	1	0	0	1
Ponticuli palatini R			0	0	1	1	0	0	1
Torus palatinus			2	1	1	1	0	1	2
Torus maxillaris		0	2	0	0	0	0	0	1
Foramen palatinus minus access. L			0	0	0	0	0	0	0
Foramen palatinus minus access. R			0	0	0	0	0	0	0
Tuberculum praecondylare L		0	0	0	1	0	0	0	0
Tuberculum praecondylare R		0	0	0		0	0	0	0
Facies condylaris bipartita L		0	0	0	0				0
Facies condylaris bipartita R		0	0		0		0	0	0
Spina mentalis	0	1	0	0	0	0	0	1	0

Table 11 (continued)

Grave No.	125.	127.	128.	129.	130.	131.	132.	133.	136.
Nonmetric traits	F	F	M	M	M	M	M	F	M
Foramen mandibularis bipartita L	0	0	0	0	0	0	0	0	0
Foramen mandibularis bipartita R	0	0	0	0	0	0	0	0	0
Torus mandibularis L	0	0	0	0	0	0	0		0
Torus mandibularis R	0		0	0	0	0	0	0	0
Grave No.	138.	139.	140.	141.	143.	144.	145.	148.	151.
Nonmetric traits	M	M	M	F	M	F	M	F	M
Sutura metopica	0	0	0	0	0	0	0	1	0
Sutura supranasalis	0	0		0	1	0	1	1	0
Foramen supraorbitale mediale L	0	0		0	0	1	0	0	0
Foramen supraorbitale mediale R	0	0		0	1	1	0	0	1
Foramen supraorbitale laterale L	0	0		0	0	0	0	0	0
Foramen supraorbitale laterale R	0	0		0	0	0	0	0	0
Incisura supraorbitale medialis L	1	1		1	1	0	1	1	1
Incisura supraorbitale medialis R	1	1		1	0	0	1	1	0
Foramen infraorbitale accessorius L		0		0	0		0		
Foramen infraorbitale accessorius R	0	0		0	0		0		
Tuberculum zygomaxillare L	0	0	0	0	0		0	0	
Tuberculum zygomaxillare R	0	0	0	0	0		0	0	0
Depressio bipariet. circumscripta L	0	0	1	1	0	0	0	0	
Depressio bipariet. circumscripta R	0	0	1	1	0	0	0	0	
Ossa suturae coronalis L	0	0		0	0	0	0	0	0
Ossa suturae coronalis R	0	0		0	0	0	0	0	0
Os bregmaticum	0	0	0	0	0	0	0	0	0
Ossa suturae sagittalis	0	0	0	0	0	0	0	0	0
Foramen parietale L	0	0	0	0	1	0	1	0	0
Foramen parietale R	0	0	0	0	1	0	1	0	0
Os epiptericum L	0	0		0	1	0	1	0	0
Os epiptericum R	0				0		1		0
Os astericum L		0	0	0	0	0	0	0	0
Os astericum R	0	0	0	0	0	0	0	0	
Ossa suturae occipitomastoidea L		0		0	0		0	0	
Ossa suturae occipitomastoidea R	0	0		0	0		0	0	
Os parietale bipartitum L	0	0	0	0	0	0	0	0	0
Os parietale bipartitum R	0	0	0	0	0	0	0		0

Table 11 (continued)

Grave No.	138.	139.	140.	141.	143.	144.	145.	148.	151.
Nonmetric traits	M	M	M	F	M	F	M	F	M
Tuberculum marginale L	0	0	1	0	0		3	0	
Tuberculum marginale R	2	0	1	0	0		3		0
Foramen mastoidale L		0		0	0		1	0	0
Foramen mastoidale R	0	0		0	0		0	0	
Foramen occipitale	0	0	0	1	0	0	0	0	
Os lambdae	0	0		0	0	0	0	0	0
Ossa suturae lamboidea L	0	0		1	1	0	1	0	0
Ossa suturae lamboidea R	2	0		0	0	0	0	0	
Os incae	0	0	0	0	0	0	0	0	0
Linea nuchae suprema L	0	0	0	0	0	0	0	0	
Linea nuchae suprema R	0	0	0	0	0	0	0	0	
Ponticuli palatini É	0	1		0	0		1	0	
Ponticuli palatini R	0			0	0		1		
Torus palatinus	0				1		1	0	
Torus maxillaris	0				0		0	0	
Foramen palatinus minus access. L	0			0	0		0	0	
Foramen palatinus minus access. R	0			0	0		0		
Tuberculum praecondylare L	0	0		0	0		0		
Tuberculum praecondylare R	0	0		0	1		0		
Facies condylaris bipartita L		0		0	0		0		
Facies condylaris bipartita R		0		0	0		0		
Spina mentalis	0	0	1	0	0	0	1	0	0
Foramen mandibularis bipartita L	0	0	0	0	0	0	0	0	0
Foramen mandibularis bipartita R	0	0	0	0	0	0	0	0	0
Torus mandibularis L	0	0	0	0	0	0	0	0	0
Torus mandibularis R	0	0	0	0	0	0	0	0	0

The distribution of healed fractures and joint lesions indicated no difference of the two groups. However, the small amount of data could not be evaluated statistically.

The results of dental pathology examinations produced a significant difference when applying the two samples t test. Individuals buried with fitting decorated belts had a better dental status, than that of those buried without this sort of

belt. Comparison was permissible as there were no significant differences in the average age and in the spread of age at the time of death of the two groups.

We gave a detailed representation of the method utilizied because of the significant differences. We have already had the basic dental pathological data at our disposal (SZIKOSSY & BERNERT 1996). The new task was to express the dental status of each and every individual with a single number. This factor was built up from the number of carious, cysta/abscessus affected and premortem lost teeth and their quantity occuring on the observable mandibular bone surface. Caries was evaluated by size on a scale graded from 0 to 6. Cystae/abscessi values were classified 6 times larger by each dental unit's mandible surface occupied. Premortem lost teeth, when their loss was evidently due to caries (e.g. a neighbouring tooth had a carious surface facing the lost one) was classified with value 6. In cases when the cause of premortem loss of teeth was not possible to establish unambiguously, we evaluated the case depending on age, as caries had a much smaller chance to bring about premortem loss of teeth with young people, than it had with older individuals. By numbers the value of those under 20 years was 0, that of individuals between 20 and 24 years was 1, that of those deceased between 25 and 29 years came out to be 2, and it grew with one with each following five years to the age of 45 years. It was always 6 with those who died after 45 years of age. Our calculation was carried out in the following way:

$$OPS = [C+Po/F\times C+Pe+A] / V$$

where C = quantity of caries borne by the individual; Po = the number of missing teeth on the observable jaw surface; F = the number of observable teeth with the individual (only those were to be considered which did fit into the alveolus); Pe = individual total of premortem lost teeth weighted with age; A = individual total of abscessuses; V = observable jaw surface

A possible dental status as an example: mandible was missing and five maxillar teeth were lost postmortem. In case of one caries of value 4 and one of value 3, three premortem lost teeth and one abscessus covering a jaw surface of two dental units the pattern could be for a man aged 40–45 years: $[7 + 5/8\times7 + 15 + 12] / 16 = 2.4$

$$C = 7\ (4+3),\ Po = 5,\ F = 8\ (16–5–3),\ Pe = 15\ (3\times5)\ and\ A = 12\ (1\times2\times6)$$

This formula presumed an equal probability of caries on every teeth, and this was evidently not true. Therefore the formula was to be applied separately for frontal teeth and masticators, then the two numbers must be summarized.

Our conclusion was that we found no genetical difference between individuals buried with or without belts. At the same time the higher proportion of protein in the diet of the belted ones was proven by dental status. Presumably the belted individuals ate meat more often, and as it was more expensive in those days too, than vegetable foodstuffs, it was the wealthy who could afford meat consumption more often. The poor ate more vegetable food, and this, combined with taking of some extra carbohydrates, hastened the decline of dental pathologic status.

We concluded that only a section of this society, evidently the more well-to-do could afford to put their dead to their final resting places with valuable, fitting decorated belts. The even distribution of traumatic and joint lesions and the similarities in their ages at the time of death indicated that there were no significant differences in the ways of life and in the mortal diseaes of the two groups. It also meant that the observation of dental status – with the method utilized by us – was suitable to establish the presence of small dietary differences too.

Comparative analysis

We could form an image of the Avar Period population on the basis of anthropologically analysed and published skeletal remains of approximately 2000 men and almost the same number of women from more than a hundred sites. A significant portion of this material was fragmented and incomplete. We quote two of the numerous general monographies because of their statements on the regional distribution of the Avar Period populations. ÉRY (1983) separated four regional groups.

1. Between the rivers Duna and Tisza there was a comparatively low skulled (mesocran, chamaecran, tapeinocran, metriometop) population. Their origin was unknown, but certainly Oriental, and Europids formed their majority, however, pure Mongoloids also occurred among them.

2. In Eastern Transdanubia a pure Europid group was living, all their cranial indices were medium. ÉRY established the origins of this Eastern Transdanubian and also of some Great Plains populations among the mesocran, Europid peoples inhabiting the steppe regions to the East of the river Don.

3. The Western Transdanubian, mostly Europid group had narrow, high braincases and narrow, low faces. It could be described as dolichocran, orthocran, akrocran, eurymetop, mesen, chamaeconch, mesorrhin.

4. The North-Western group had all medium indices in all significant aspects, the eyes were often chamaeconch. The populations coming under this heading probably had links to Group 3.

FÓTHI (1991, 1998) separated four regional groups too.

1. The Transdanubian Group could be characterized with long, narrow, medium high and high braincases (dolichocran, hypsicran, akrocran).

2. The Northern Group was the population of the Northern part of the Carpathian Basin. It could be characterized with medium long, medium wide, and high braincases (mesocran, hypsicran, akrocran), and with medium high orbital cavities (mesoconch).

3. Between the Danube and the Tisza she separated two groups. Both groups had medium wide orbital cavities (mesoconch). One of them could be described as a markedly connected group with short and low braincases (brachycran, orthocran, tapeinocran) which contained a small amount of Europo-Mongoloid elements. She explained the formation of this group with mixing of a Europid and Mongolid population that lived here 150–200 years earlier. The other population was of smaller numbers, with medium long and narrow braincases (mesocran, orthocran, tapeinocran), and she put their origin into the Eastern steppe.

4. The Danube–Tisza region group lived along the two great rivers. Their braincases were medium long and medium high (mesocran, orthocran, metriocran), their orbital cavities were high (hypsiconch).

We utilized various mathematical methods for the transformation of measurements, for the calculation of point distance matrixes and for the reduction elements when looking for analogies of this population by cluster analysis. We accepted only statements supported by more than one kind of cluster analysis process (FÓTHI 1989). We reached the following conclusions:

A portion of Avar Period samples fell in the same groups under various cluster forming strategies, others fell in different groups under different methods. These "deviant" series were left out of consideration later, because we could not interprete their behaviour, but this motions probably had no biological causes.

We arrived at three general observations on the basis of a large number of cluster analysis methods. First, the cemeteries were almost always separated by the ratio of Europid and Mongoloid individuals. Second, Danube seemed to be be a decisive geographical limit, as Transdanubian series were markedly different to those found to the East of the river Danube. Third, the two main living-space types of the Carpathian Basin were as significant geographical factors, as the Danube. Series from hilly regions and mountain ranges of medium height (in Transdanubia and modern Slovakia) stood apart from those uncovered in the Great Plains, in the Small Plains, and in the Mezőföld region, where wooded steppe dominated (Figs 2–3).

We could state on the Kereki-Homokbánya population:

– The historical population of Kereki-Homokbánya always stood apart from series that contained Mongoloids as well.

- Our series analysed was connected under almost all clustering processes to the Avar Period populations of Transdanubia and Upper Northern Hungary.
- It presented the closest analogy to the Avar Period population of Kassa-Zsebes, but we failed to find out the historical background of this fact.
- Our series did not stand closer to the Csákberény series, than to the majority of Transdanubian Avar populations – though some archeological analogies seemed to indicate this relationship.
- Cluster strategies did not support a similar closeness to the geographical one with the series of Siófok-Kiliti, Fészerlak and Toponár (Figs 2–3).

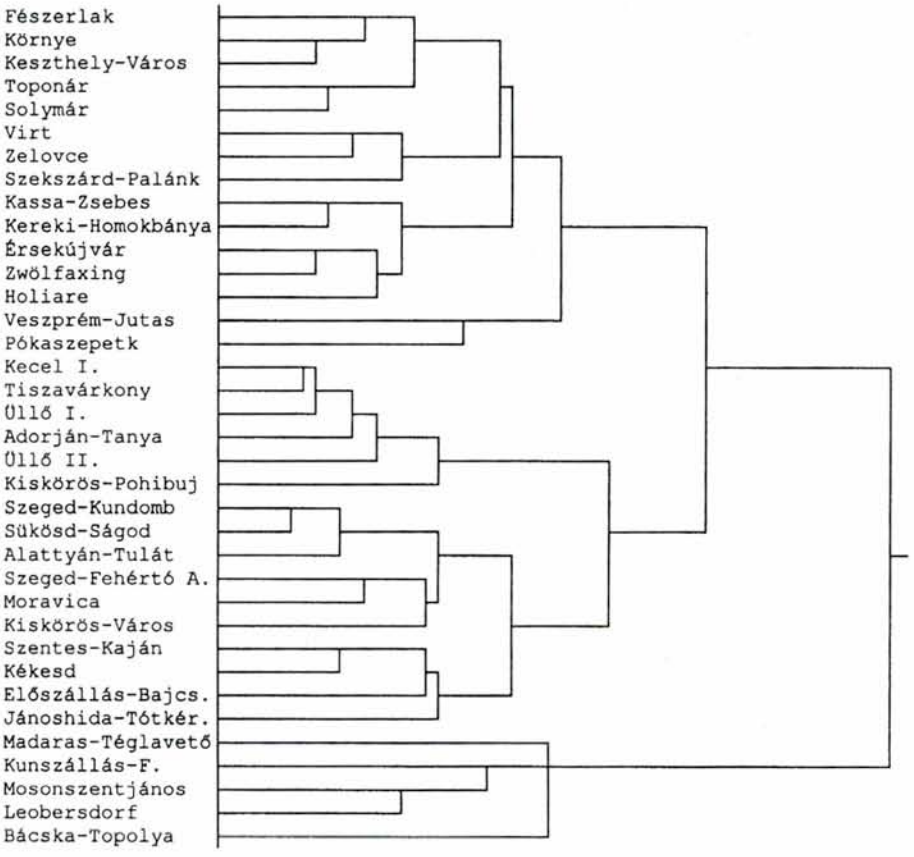

Fig. 2. Dendrogram of the Avar Period man series of the Carpathian Basin (cluster analysis: C transformation, Euclidean distance, furthestneighbour method)

SUMMARY

The palaeoanthropological material of the Kereki-Homokbánya population indicated a significant sexual dimorphism according to the anatomical features presenting sexual dimorphism. A very low estimated average age was the most evident feature of demograhical analysis. We mean to find the cause of it in adapta-

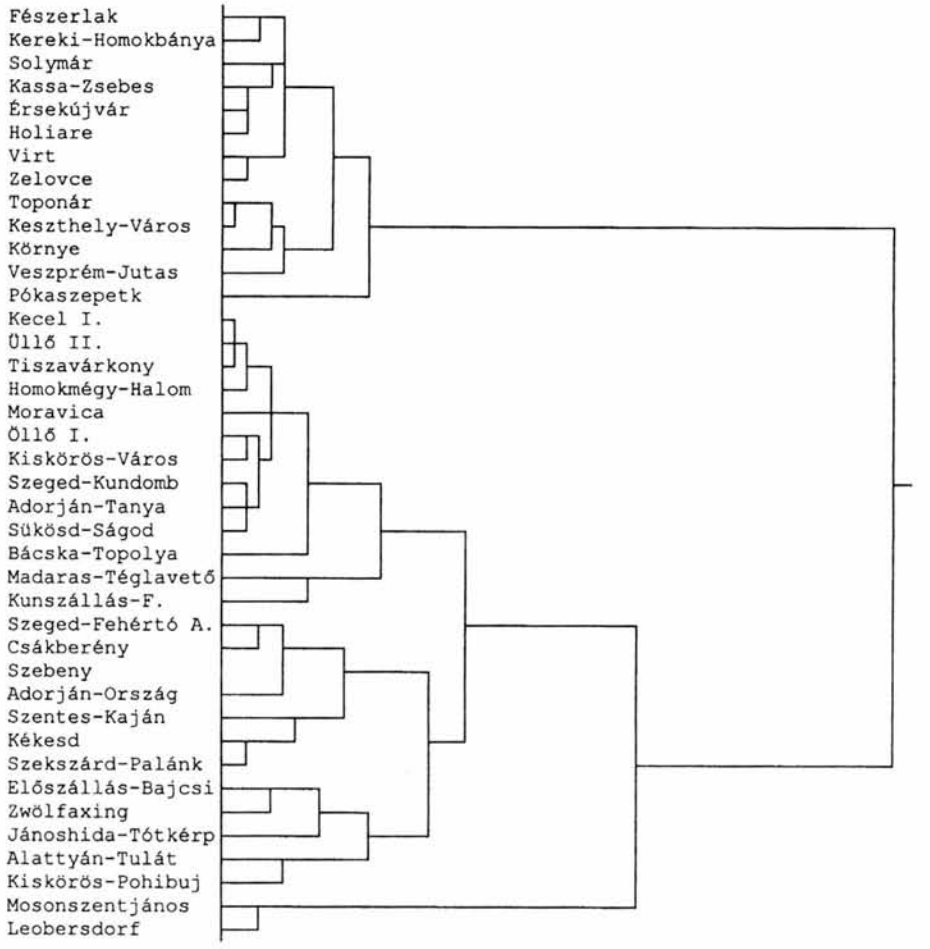

Fig. 3. Grouping of the Avar Period man samples of the Carpathian Basin (cluster analysis: no transformation, Penrose distance, dual sequential method)

tion dificulties.

By its skulls this population was long headed, with medium high and high skulls (dolichocran, orthocran, akrocran). The forehead was medium wide (metriometop). Their cranial capacity was medium large to large (euencephal, aristencephal) because of their long, high skulls. Face, upper face and nose were medium wide (mesen, mesoprosop, mesorrhin). Orbital cavities were medium high, short (mesoconch, chamaeconch). Ovoid and pentagonoid were the most frequent cranial shapes, napes were mostly arched. The average stature of women was 156.6 cm, that of men was 164.9 cm.

Taxonomically the skulls could be deduced from the mix up of three long braincased, Europid races. Elements of the Nordic, the Cromagnoid, and the Mediterranean races were mixed in them – presumably for several generations. The Nordic type did dominate, it could be found on more than half of all the skulls. "Clear" types occured only in sporadic cases. The origins of those short and wide braincased features could not be identified, which presented themselves in this otherwise expressly unified taxonomical image.

The outcomes of palaeodemographic and pathologic analysis presented a population living a peaceful, but poor way of life.

The population as an entity was similar to Transdanubian and Upper Northern Hungarian series. Four groups could be separated within the population, the third one of which was similar to Western Transdanubian Avars, while the second group presented similarities to the Avar populations inhabiting Eastern Transdanubia.

*

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