Acta Biologica Szeged 16 (3—4), pp. 155—162 (1970)

ANTHROPOLOGICAL INVESTIGATION OF THE CEMETERY AT KARDOSKÚT–FEHÉRTÓ FROM THE 11TH–12TH C.

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(Received December 1st, 1969)

Introduction

At the Northern shore of the lake Fehértó lying West of Kardoskút there was an excavation as early as in 1895, carried out under the leadership of A. VARGA finding the outlines of a small church. In the environment of the church a large number of skeletons were found (SZÉLL, 1940). The church had been standing on the highest point of the territory whose ground was later occupied by farmhouse No. 389 built in 1921. In the cemetery round the church four new graves were discovered by the Institute of Archaeology of the University in Szeged, in 1943 (OLASZ, 1959). The graves have been of East-West direction, containing the skeletons of two females, one child and one male. Grave finds were only in one of the female graves consisting in two rings and one lock-ring-with S-ending. Furthermore, the existence of a settlement is proved by the traces of an oven and a hearth (BANNER, 1943). Another excavation in the same area led by E. OLASZ in 1949 resulted in further 97 graves. Later on, in 1950, the investigators of the Anthropological Collection of the Museum of Natural History in Budapest joined with them in doing the work digging up graves Nos. 98—146. (I wish to express in this way my thanks to E. OLASZ for passing me the archaeological documentation.) The excavation was continued in the next year, too, resulting in graves Nos. 147—262. „A great part of the multilayer graves was disturbed. Grave finds were: rings with S-ending of different sizes; simple and headed rings; denariuses of the 11th and 12th centuries; iron clasp; knife." (FEHÉR—ÉRY—KRALOVÁNSZKY, 1962). The salvage excavation in 1958 resulted in further 32 graves. The skeletons lay in three layers. At the head of grave No. 25 there was a brick set on edge. The graves are similarly of East-West direction. Grave finds are the same as those uncorved in earlier years (OLASZ, 1959a). This territory is mentioned in SZEREMLEI's monograph (1901) under the name of Apácaegyháza — a village from the Arpadian Age long since extimet. That village existed in the 11th century and was probably destroyed as a consequence of the Tartar invasion of Hungary in 1241—1242. The name of the supposed village was mentioned in 1435 as a lowland plain belonging to János Hunyadi's estate in county Békés (OLASZ, 1959). About the cemetery at Kardoskút—Fehértó in the Arpadian Age there is no detailed archaeological publication so far.

Anthropological elaboration

The anthropological material of the cemetery can be found at present in the Department of Anthropological of the Attila József University (only the excavation finds from 1949/51 and 1958 have been saved). For anthropological elaboration 257 skulls and 160 skeletons sere available for me. From them the number of young and children is 41 (14 per cent). The distribution according to age is as follows: infantia I. 4 (2 p. c.), infantia II. 16 (5 p. c.), juvenis 21 (7 p. c.). Number of males is 136 (46 p. c.), from which adultus 44 (32,3 p. c.), maturus 90 (66,2 p. c.), senium 2 (1,5 p. c.). Number of females: 119 (40 p. c.), broken down according to age-groups: adultus 66 (55,4 p. c.), maturus 52 (43,7 p. c.), senium 1 (0,9 p. c.). Seventy per cent of the material is in good condition containing 181 skulls and 151 skeletons. Their metrical and morphological characterization on the basis of Tables 1 and 2, and taking into consideration MARTIN's method (1928), is as follows.

The *cranium* of males is mesodolichocranic, narrow; on the basis of the mean value and distribution of cranial index dolichocrany is characteristic but also the mesocranic skulls are represented with large numbers. On the basis of basion-bregma height, the mesocephalic skulls are dominant, on the basis of the mean value of the lenght-height index orthocrany is characteristic and according to the breadth-height index metriocrany is. The forehead is narrow; according to its index it is eurymetopic. The outline of skull in vertical norm is mostly ovoid and pentagonoid. The glabella is generally of third degree but degrees four and five also represented in a rather great number. On the basis of their skull capacity they are euencephalic. The facial cranium is middle wide and middle high, on the basis of the mean value of facial index is mesoprosopic and as to its distribution mesoprosopy is represented in equal proportion with euryprosopy. According to the upper facial index, the face is mesene (with regard to the mean value and distribution of the index). Of the facial profile the preponderance of orthognathy is characteristic. The *fossa canina* is deep in middle-sized and minor ratio. The alveolar prognathy is missing or moderate. The orbit is mostly hypsiconch but the ratio of mesoconch orbits is also considerable. The nose is on the basis of the mean value of nasal index mesorrhine and according to its distribution mostly leptorrhine, resp. — in lower number — mesorrhine. The palate is leptostaphylinic. They are moderate in size (165,40 cm).

The *cranium* of female is middle-long, narrow, on the basis of the mean value and distribution of cranial index it is mesocranic, but the dolichocranic skulls are also represented is a rather high number. On the basis of basion-bregma height, the middle-high skulls are dominant; according to the length-height index orthocrany, according to the breadth-height index metriocrany is characteristic, but acrocranic skulls are also represented with a rather high number. The forehead is narrow, on the basis of its index it is eurymetopic, and in a lower percentage metriomtopic. The outline of skull in vertical norm is ovoid and pentagonoid, the *glabella* is mostly of two degrees. On the basis of their cranial capacity they are euencephalic. The *facial cranium* is middle-wide, middle-high; on the basis of facial index mesoprosopy, on that of upper facial index mesene is dominant. The *fossa canina* is generally medium deep,

Table 1. Kardoskút—Fehértó: Distribution of the principal metrical characters

Characters			Males (p. c.)	Females (p. c.)	Total (p. c.)
8 : 1 Cranial index	Ultradolichocranic	x—64,9	1(1,0)	—	1(0,5)
	Hyperdolichocranic	65,0—69,9	6(6,0)	2(2,5)	8(4,5)
	Dolichocranic	70,0—74,9	52(52,0)	34(43,0)	86(48,0)
	Mesocranic	75,0—79,9	39(39,0)	38(48,1)	77(43,0)
	Brachycranic	80.0—84,9	1(1,0)	5(6,4)	6(3,4)
	Hyperbrachycranic	85,0—89,9	1(1,0)	—	1(0,6)
		Total:	100	79	179
17 : 1 Length-height index	Chamaecranic	x—69,9	28(39,4)	11(13,4)	39(29,8)
	Orthocranic	70,0—74,9	31(43,7)	44(73,3)	75(57,3)
	Hypsicranic	75,0—x	12(16,9)	5(8,3)	17(12,9)
		Total:	71	60	131
17 : 8 Breadth-height index	Tapeinocranic	x—91,9	19(26,1)	12(20,3)	31(23,4)
	Metriocranic	92,0—97,9	29(39,7)	25(42,4)	54(41,0)
	Acrocranic	98,0—x	25(34,2)	22(37,3)	47(35,6)
		Total:	73	59	132
9 : 8 Fronto-parietal index	Stenometopic	x—65,9	16(15,8)	14(17,5)	30(16,6)
	Metriometopic	66,0—68,9	26(25.8)	25(31,3)	51(28,2)
	Eurymetopic	69,0—x	59(58,4)	41(51,2)	100(55,2)
		Total:	101	80	181
47 : 45 Facial index	Hypereuryprosopic	x—79,9	—	4(14,3)	4(6,7)
	Euryprosopic	80,0—84,9	12(37,5)	4(14,3)	16(26,7)
	Mesoprosopic	85,0—89,9	12(37,5)	14(50,0)	26(43,3)
	Leptoprosopic	90,0—94,9	5(15,6)	3(10,7)	8(13,3)
	Hyperleptoprosopic	95,0—x	3(9,4)	3(10,7)	6(10,0)
		Total:	32	28	60
48 : 45 Upper facial index	Euryene	45,0—49,9	11(20,8)	5(11,1)	16(16,3)
	Mesene	50,0—54,9	25(47,1)	28(62,2)	53(54,1)
	Leptene	55,0—59,9	16(30,2)	11(24,5)	27(27,6)
	Hyperleptene	60,0—x	1(1,9)	1(2,2)	2(2,0)
		Total:	53	45	98
52 : 51 Orbital index	Chamaeconch	x—75,9	4(5,1)	1(1,8)	5(3,7)
	Mesoconch	76,0—84,9	36(46,2)	27(48,2)	63(47,0)
	Hypsiconch	85,0—x	38(48,7)	28(50,0)	66(49,3)
		Total:	78	56	134
54 : 55 Nasal index	Leptorrhine	x—46,9	27(36,5)	19(35,2)	46(35,9)
	Mesorrhine	47,0—50,9	22(29,7)	21(38,9)	43(33,6)
	Chamaerrhine	51,0—57,9	21(28,4)	11(20,4)	32(25,0)
	Hyperchamaerrhine	58,0—x	4(5,4)	3(5,5)	7(5,5)
		Total:	74	54	128

in lower percentage it is shallow. The alveolar prognathy is moderate. On the basis of facial profile ange they are orthognatic. On the basis of the mean value of orbital index, it is mesoconch, according to its

PLATE I

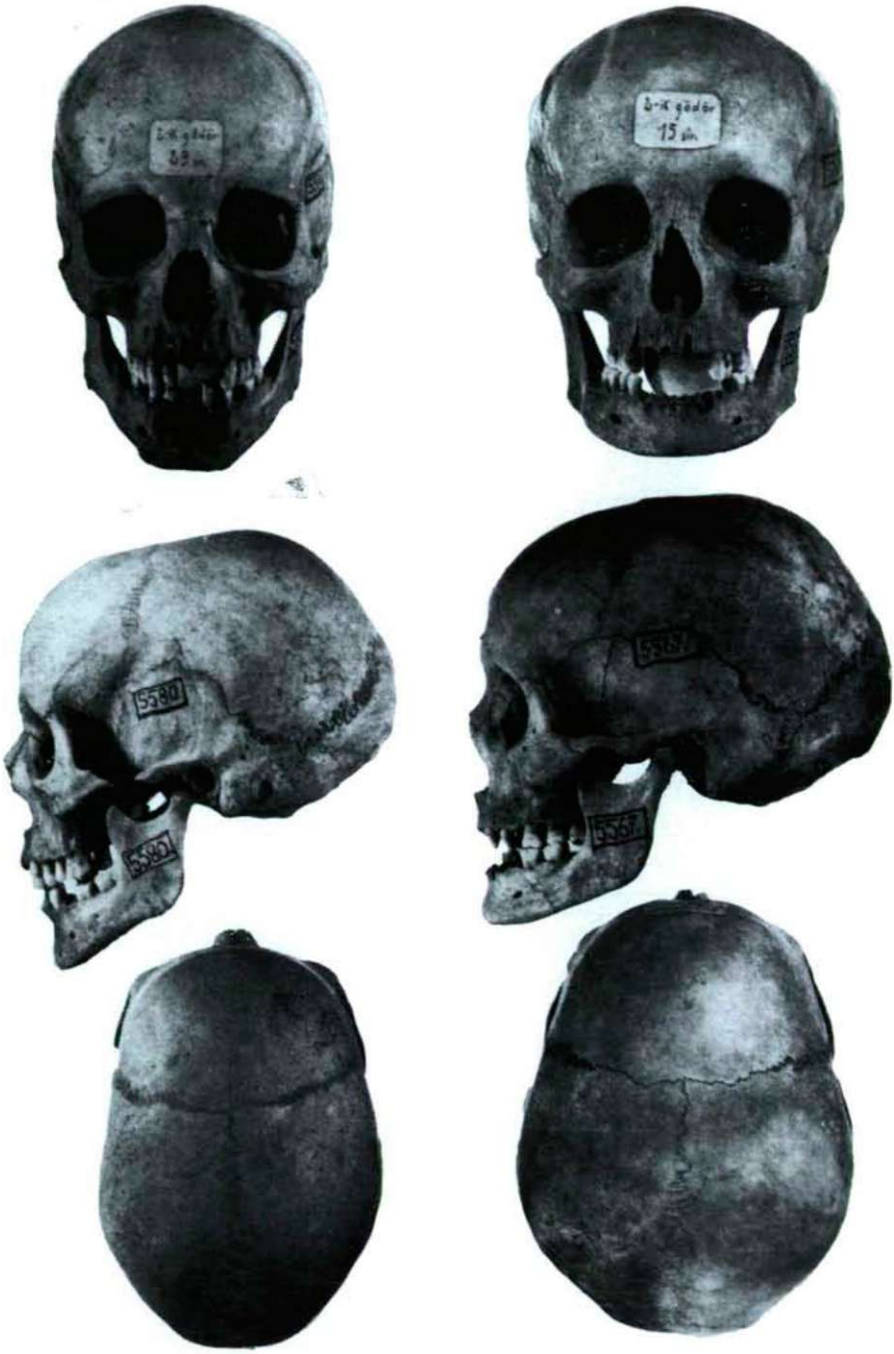

Table 2

Kardoskút—Fehértó: Parameters of the main measurements and indices

No. of measurements (MARTIN)	Males N	Males V	Males M	Males s	Females N	Females V	Females M	Females s
1.	104	170—201	185,1	6,49	83	168—188	178,4	4,92
8.	104	127—153	137,6	5,29	83	124—147	134,7	4,64
9.	109	85—106	96,0	4,61	84	83—102	92,9	4,13
17.	72	120—151	131,8	5,69	63	116—139	128,9	4,95
45.	57	124—149	133,5	5,32	42	119—136	127,2	4,49
47.	47	102—134	117,1	8,05	35	94—129	113,3	7,67
48.	78	59— 84	70,2	5,25	60	60— 78	67,8	3,78
8 : 1	100	64,7— 85,9	74,4	3,67	79	67,8— 81,5	75,3	3,02
17 : 1	71	64,3— 77,8	71,3	3,60	60	64,9— 78,5	72,0	2,67
17 : 8	73	83,3—106,7	96,2	5,37	59	86,7—104,6	96,1	4,43
9 : 8	101	61,0— 76,9	69,8	3,31	80	62,8— 76,7	69,1	2,81
47 : 45	32	81,3— 98,5	87,7	4,62	28	76,6— 97,6	86,9	5,42
48 : 45	53	45,0— 60,5	53,1	3,71	45	46,6— 60,5	53,1	2,95
52 : 51	78	72,7—100,0	85,1	5,51	56	74,4— 92,3	84,7	4,21
54 : 55	74	36,7— 62,0	49,2	5,80	54	37,7— 66,7	49,1	6,81
63 : 62	61	67,3— 92,9	78,1	7,51	41	62,2— 90,9	76,9	5,69

distribution mesoconchy is represented nearly in equal percentage with hypsiconchy. The nasal index, on the basis of its mean value, is mesorrhine, as well as according to its distribution, but the number of leptorrhine skulls is also considerable. The palate is leptostaphylin. They are moderate in size (153,72 cm).

In the light of all these characteristics, there is no any considerable difference between males and females generally; some divergence is only on the basis of the mean value and distribution of cranial index as females have somewhat higher cranial index.

In males, anatomic variations occurred in 34 cases (28 p. c.). These are as follows: *os apicis* appeared in 5 cases (14,7 p. c.), *sutura metopica* in 4 (11,8 p. c.), bones at the lambdoid sutures in 15 (44,1 p. c.), *os epiptericum* in 8 cases (23,6 p. c.), *processus frontalis ossis temporalis* in 1 case (2,9 p. c.), *torus palatinus similarly* in 1 case (2,9 p. c.). At females, anatomic variations could be observed in 33 skulls (31,4 p. c.), their distribution being: *os apicis* in 2 cases (6,6 p. c.), *sutura metopica* in 7 (21,2 p. c.), bones at the lambdoid sutures in 17 (51,5 p. c.), *os epiptericum* in 4 (12,1 p. c.), *torus palatinus* in 2 cases (6,6 p. c.), and *os bregmaticum* in 1 case (3,0 p. c.). Two male skulls were bathrocephalic.

I have carried out the taxonomical analysis of the cemetery according ti P. LIPTÁK's method (1962, 1965). (My special thanks are due to him for his help in my work of analysis.) I omit here the characterization of single

Plate Ia. Kardoskút—Fehértó, 11th—12th century
Grave 29. am. Female.
b. Kardoskút—Fehértó, 11th—12th century
Grave 15. m. Female.

PLATE II

races in details, instead I refer to the works quoted. Considering the data of Table 3, the Nordoid group is in the first place with 35,7 per cent of the population. The group of Mediterraneans is comparatively heterogeneous, its significance is nevertheless similar to that of the former group (33,5 p. c.). (Plates Ia and b, IIb). From the group of *Cromagnoid races*, type *Cromagnon—A* is represented in higher percentage (Plate IIa), while the participation of *Cromagnon—B* is considerably lower. This group lies, as regards the whole population, in the third place, with 29 p. c. Other racial elements are less important (undefinite brachycranic and protomorphous types). In two cases *Mongoloid* traits could be established, however, they are secondary elements.

Table 3

Kardoskút—Fehértó: Taxonomical analysis

Types (races)	Males N p. c.	Females N p. c.	Total N p. c.
Nordoids			
Nordic (n)	29(40,8)	13(27,6)	42(35,7)
Mediterraneans			
Gracile-Mediterranean (m)	6(8,5)	14(29,9)	20(17,7)
Atlanto-Mediterranean(am)	10(14,1)	8(17,5)	18(14,2)
Iranian (i)	—	1(2,0)	1(0,8)
Protomediterranean (pm)	—	1(2,0)	1(0,8)
Total:	16(22,6)	24(51,4)	40(33,5)
Cromagnoids			
Cromagnoid—A (cr—A)	21(29,6)	7(14,8)	28(24,1)
Cromagnoid—B (cr—B)	4(5,6)	2(4,2)	6(5,1)
Total:	25(35,2)	9(19,0)	34(29,2)
Undeterminable brachycranic component (br)	1(1,4)	—	1(0,8)
Protomorphic compotent	—	1(2,0)	1(0,8)
Total:	71	47	118

Summary

On the basis of the taxonomical analysis, the cemetery can be considered as moderately heterogeneous. Between males and females there is no considerable difference on the basis of the taxonomical analysis. The only divergence is in the case of males where after the *Nordic* group the *Cromagnoid* ones are in the second place, with a preponderance of type *Cromagnoid—A*,

Plate IIa. Kardoskút—Fehértó, 11th—12th century
Grave 98. crA Male.
Kardoskút—Fehértó, 11th—12th century
Grave 31. am. Male.

while the third place is represented by the *Mediterraneans* (with a great percentage of the type *Atlanto-Mediterranean).* In the case of females, however, the *Mediterranean* group is in the first place, with a preponderance of the gracile *Mediterraneans,* while the Nordoid ones come in the second place and the *Cromagnoid* ones are only in the third place. We have several anthropological publications concerning the South Hungarian Plain (LIPTÁK—FARKAS, 1962, 1967, 1967a; FARKAS—LIPTÁK, 1967), according to which the dominant race components are the *Nordic* one, the *Mediterranean,* and the *Cromagnoid—A.* The population of Kardoskút—Fehértó in the *Arpadian-Age,* if analysed taxonomically is fully corresponding to the anthropological material of the quoted cemeteries in the South Hungarian Plain.

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