

## DATA OF THE COPPER AGE ANTHROPOLOGICAL FIND OF BÁRDOS-FARMSTEAD AT CSONGRÁD-KETTŐSHALOM

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The anthropological material of the Copper Age grave of Bárdos-farmstead at Csongrád Kettőshalom consists of the light yellow, but sporadically red-coloured, complete skeletal bones of an adult person, in good state of preservation that can be found in the Institute of Anthropology of the József Attila University (Number of inventory: 7620).

Its sex is — on the basis of the cranium, long bones and the angulus of pelvis — unquestionably male.

His age at death can be concluded from the morphological deformations observed in the cranium and on the symphyseal facies of pelvis characteristic of the age at death, as well as from the height of cone of the medullary space of humerus, from the rarefaction of the bone-tissue of the femoral fasciculus trochantericus and arciformis. The cranial sutures are open. Some ossification had begun only on the endocranial surface, in the obelic part of the sagittal suture. Taking into consideration in this respect the classification of Martin (1928), as well as that of Todd and Lyon (1924), his age at death can be put at 30 years, owing to the deformations of skeletal bones mentioned above (Nemeskéri—Harsányi, 1958), at 40 years. In this way, his average age of life can be estimated at 35 years.

On the basis of metrical and morphological values the find can be characterized as follows. For characterizing it I have used Martin—Saller's method (1957) and Hug's (1940) absolute categories.

The neurocranium is long, narrow, of medium height; it is dolichocranic, chamaecranic, metriocranic. The calculated cranial capacity is 1444 cm<sup>3</sup>, euencephalic. The contour of cranium is in norma verticalis pentagonoid, in norma occipitalis house-shaped. The protuberantia occipitalis externa is of third degree, the processus mastoideus is vigorous. The forehead is somewhat bent, of medium breadth and eurymetopic. The glabella is of fourth degree.

The face is broad, medium height, euryprosopic and mesence. On the basis of its facial profile angle it is orthognathous, the fossa canina is of third degree, there cannot any alveolar prognathism. (For forming a judgment of the latter one, I took a stand on Lipták's (1971).

The orbit is angular and mesoconch, the nose is medium prognathous, mesorrhine. The spina nasalis anterior is of fourth degree. The dental curve is U-shaped, the palate is brachystaphyline. (The most important individual measurements, indices and morphological features of the cranium are summarized in Table 1.)

The sites of adhesion of strong muscles seen on the long bones and on the scapula are referring to the robust bony frame of the person in question and that is shown also by the robustness index of clavicle (26,96) and humerus (22,54). The scapula is height and medium broad. The clavicle, apart from being robust, is long,

the forearm is comparatively short, the sacrum is moderately broad, the pelvis narrow. The absolute measurements and indices concerning the skeletal bones are contained in Table 2.

Table 1: Individual measurements and indices of the Copper Age material of Bárdos-farmstead at Csongrád-Kettőshatalom

<i>No. of measurements (Martin)</i>	<i>Measurements and indices</i>	<i>I. 7620 Ad. Male</i>
1.	Glabello-occipital length .....	194
1c.	Metopion-occipital length .....	187
5.	Basion-nasion length .....	102
8.	Maximum breadth of cranium .....	139
9.	Minimum frontal breadth .....	99
17.	Basion-bregma height .....	134
20.	Porion-bregma height .....	119
32/1-a.	Frontal angle .....	52°
38.	Calculated cranial capacity .....	1444
40.	Superior facial length .....	95
45.	Bizygomatic breadth .....	140
46.	Maxillar breadth .....	95
47.	Total facial height .....	115
48.	Upper facial height .....	70
51.	Orbital breadth .....	42
52.	Orbital height .....	34
54.	Nasal breadth .....	26
55.	Nasal height .....	54
62.	Palatal length .....	47
63.	Palatal breadth .....	41
65.	Bicondylar-diameter .....	124
66.	Bigonial-diameter .....	104
69.	Mental height .....	32
70.	Ramus height .....	73
71.	Ramus breadth .....	37
72.	Total facial angle .....	91°
8:1	Cranial index .....	71,65
17:1	Length-height index .....	69,07
17:8	Breadth-height index .....	96,40
9:8	Transvers. frontopar. index .....	71,22
47:45	Facial index .....	82,14
48:45	Upper facial index .....	50,00
52:51	Orbital index .....	80,92
54:55	Nasal index .....	48,15
63:62	Palatal index .....	87,23
Vertical norm .....		<i>Pentagonoid</i>
Glabella .....		4
Protuberantia occipitalis externa .....		3
Fossa canina .....		3
Spina nasalis anterior .....		4
Prognathia alveolaris .....		1
Calculated stature .....		182
Taxon .....		crA-n

Table 2: Individual measurements and indices of the skeletal bones of the Copper Age material of Bárdos-farmstead at Csongrád-Kettőshalom

<i>No. of measurements (Martin)</i>	<i>Measurements and indices</i>	
1.	Greatest length of clavicle .....	165
6.	Medium contour of clavicle .....	43
1.	Anatomical breadth of scapula .....	172
2.	Anatomical length of scapula .....	115
1.	Greatest length of femur .....	558
1b.	Medial length of tibia .....	418
1.	Greatest length of humerus .....	377
2.	Length of the caput-capitulum of humerus .....	R = 368 L = 360
7.	Diaphyseal contour of humerus .....	85
1.	Greatest length of radial bone .....	274
1b.	Paralell length of radial bone .....	R = 273 L = 278
2.	Anterior straight length of sacrum (sacral length)...	109
5.	Anterior upper straight breadth (sacral breadth)...	110
23.	Sagittal diameter of pelvic inlet (conjugata vera) ...	128
24.	Transverse diameter of pelvic inlet (transversal..... diameter)	124
6:1	Robustness index of clavicle .....	26,06
2:1	Length-breadth of clavicle .....	66,86
7:1	Length-thickness or robustness index of humerus ..	22,54
1:2	Brachial index, brachium-antebrachium index (radius 1, hum. 2) .....	72,95
5:2	Length-breadth index of sacrum .....	100,92
23:24	Index of pelvic inlet .....	103,23

His stature was, based on Breitinger's method (1938) 182 cm, very tall.

From among the ten anatomical variation-frequencies described by Brothwell (1959) the lambdoid sutural bones can be found in the cranium. And we may observe other morphological and anatomical deformations, too: supranasal suturation, insertion of strong muscles in the nuchal plane, parietal foramen on the right side, an angular and divided left jugular foramen, a strong mental trigone.

In the skeletal bones there are to be seen no anatomical deformations except a developmental malformation in the caudal and cranial bifid sacrum. The bifid sacrum as a developmental malformation is, according to Regöly—Mérei (1962), one of the anomalies occurring most frequently.

There aren't to be observed any morphologically pathological deformations either in the cranium or in the skeletal bones.

Taking Lipták's (1962, 1965) taxonomic works as our starting-point, the cranium is showing Cromagnoid-A and Nordic characteristics (Plate 1). The characteristic features of Cromagnoid-A (crA) taxon, as an angular face, oblong orbit, strong gonion region, are not expressed, but the euryprosopy is referring to Cromagnoid character. We may consider, therefore, the cranium of Bárdos-farmstead at Csongrád Kettőshalom as a variation of Cromagnoid-A combined with Nordic characteristics.



Plate 1: Grave 1 (Inventory No. 7620), Copper Age, Bárdos-farmstead at Csongrád-Kettőshalom, cr-A — n; male.

#### COMPARISON

In the crania originating from the culture of *Lengyel* in Transdanubia Bartucz (1966) established strongly marked features both in males and females.

In the same work he notices relating to grave 314 of the *eneolithic* cemetery at Zengővárkony that the cranium is dolicho-mesocranic and, owing to the breadth of the mandible, it seems to belong to the Cromagnoid race-circle.

The anthropological establishments concerning the *early* period of the Copper Age in Hungary may be found in one of Nemeskéri's comprehensive studies (1961).

He is remarking in connection with the material of the cemetery at the Polgár—Basa farmstead that the average span of life of the population moves between 29 and 32 years, in case of females being lower, in case of males higher. In his opinion, there are dominating two main types. Type-A: mesomorphic, the height of stature being above the average; the neurocranium is — on the basis of its absolute measurements — long, according to the indices it is mesodolichocranic, the splanchnocranium is eury-mesoprosopic. This taxonomic component dates back to the neolithic Bük culture. Type-B: dolichomorphic, the stature ranges from short one till medium tall. Dolichocrany and leptoprosopy show from time to time even extreme values. The facial profile is mesognathous, the alveolar prognathism is characteristic.

Nemeskéri, in his paper quoted above (1961), is dealing also with the population of the *Bodrogkeresztúr* culture. Of that population the more delicate features are characteristic. The cranium is dolichocranic. In another paper (1956) he is similarly analysing the population of the *Bodrogkeresztúr* culture. In the cemeteries at Pusztaistván and Kiskőrös the mesocranic features are considerable. At the same time, in the material of the findspots in Szabolcs he established gracilization on a smaller scale — as compared with cases mentioned above. In the *Bodrogkeresztúr* culture, the fundamental race-element is formed by the Mediterranean race-component of the Tisza culture in the Neolithic period. He remarks that we have no coherent data concerning the population of the eneolithic period except the establishment that in Transdanubia there are present the Atlanto-Mediterranean features but in the East-of-the-Tisza region, in addition, there are also proto-Europid features (Soviet terminology). The population of the eneolithic period in Hungary from that of the Pécel culture just in the existence of these proto-Europid elements.

In respect of the data of the population of the *Pécel* (Baden) culture, Nemeskéri's (1951) bulkier work deserves attention. He carried out the evaluation of 43 graves from Alsónémedi, in which there were 16 males, 8 females, 14 children and 5 of undetermined sex. He gives the summarized mean value of both sexes, in addition he publishes the stature value, as well, that is 162,40 cm in case of males, 152,50 cm in case of females. Based on taxonomic investigations, he separated three groups. Group 1: meso-hypsicranic (Mediterranean, Alpine, Dinaric); Group 2: meso-(dolichocranic)-hypsicranic group (Mediterranean and proto-Europid-Cromagnoid); Group 3: brachy-hypsicranic (proto-Alpine and Dinaric).

In respect of the Pécel culture, in a major work of his of comprehensive character (1956) we find a detailed elaboration of the material of three findspots. These are: Szentes—Nagyhegy, Palotabozsok, Budapest—Andor street. He reports on the individual measurements, as well as the mean values of these, too, comparing them simultaneously with other European finds. Finally he established that the population of the Pécel culture differs from that of *Bodrogkeresztúr* culture because of the predominance of the Mediterranean race-component. The origin of the Mediterranean race-element goes partly back to the Tisza culture, however it is of South-Eastern origin.

The pathological deformations belonging closely to the biological reconstruction were established by Nemeskéri and co-worker (Gáspárdy—Nemeskéri, 1959) in respect of the population of the Copper Age (*Pécel* culture). They have observed from among the pathological deformations in a proper sense spondylosis, arthrosis, the traces of fractures and orbital criba and apart from these various developmental anomalies and anatomical variations, as well (*spina bifida occulta*, *foramen intracondyloideum*).

In Danilenko's book (1969) we have found the neolithic-eneolithic cultures

of South-Eastern Europe thus those in Hungary, too, parallel with the other cultures. The finds of the Tripolye culture, originating from the territories of Poland, Rumania and the Ukraine, are very important.

The anthropological elaboration of the series from Bilcze-Zlote in Poland was carried out by Stojanowski (1948). The anthropological elaboration of the material of the findspot at Vykhatintsky in the Ukraine is connected with Velikanova's name (1961). She is establishing that the two series are very similar to each other although the measures of the calvaria are greater, the face is broader in the series of Vykhatintsky. The proto-Europid component is dominant. All the other finds of the Tripolye culture including the finds of Rumania, as well (Necrasov et al., 1957) — remain within the limits of the individual variations established in case of the series of Vykhatintsky and Bilcze — Zlote. The other European series can be characterized with a comparatively narrow face, dolichocrany. In Eastern Europe, however, the facial breadth of crania is showing a much higher value.

The cemeteries of the period Srednii Stog II in the Ukraine are: Kapulivka, Alexandriya, Dereivka 2 and Kamennye Potoki. The anthropological elaboration of these series was carried out by Zinevish and Kruts (1968) and we meet these series in another book of Zinevish (1967), as well.

Tóth (1970), reporting on the population of the Azov area in the Bronze Age, is remarking that in the medium Bronze Age elements of this area there are dominating the proto-Europid components but there appear also the Cromagnoid and Mediterranean features. Some analogies can be connected with the neolithic series of the Ukraine but there is possible also an eneolithic Copper-Age effect of southern origin.

He is treating in another paper (1968) of a material originating from the pitted (yamnaya) culture of the Ukraine and the lower Volga region. He is establishing the great influence of the autochthonous morphological components of mesolithic origin on the anthropological composition of the population of the yamnaya culture, and the same is expressed in the eneolithic Bronze-Age series, as well.

According to Debets (1961), the Europoid crania of Southern Mediterranean origin were more gracile than those from the northern steppe zones in the course of the neolithic period and Bronze Age. That phenomenon had begun in the neolithic period and became stronger in the course of Copper Age.

#### EVALUATION OF RESULTS

The most important individual measurements and indices of the find material originating from various cultures are summed up in Tables 3 and 3a.

(I have only compared, of course, the values concerning males, leaving in this way out of consideration the measurements and indices of female graves at Dereivka 2 as well as Alexandriya. I haven't use the united mean values, either, calculated for the series at Alsónémedi (Pécel culture).

We can find the values concerning the period Srednii Stog II and the Yamnaya culture in the book of Zinevish and Kruts (1968), the data of the Vykhatintsky and Bilcze — Zlote series belonging to the Tripolye culture in Velikanov's (1961) work while the measurements and indices of the other findspots in Nemeskéri's (1956) paper.

„For comparing the materials of the cemeteries available for me, I have applied the type-distance coefficient” introduced by Thoma (1955). His formula — in which

Table 3: Comparison of the finds of various cultures

No. of measurements (Martin)	Cultures						
	Period Sredni Stog II				Yamnaya		Tiszapolgár-Bodrogkeresztúr
	Findspots						
	Kapulivka	Alaxandriya	Kamennye Potoki		Podniprovyia	Zaporizka	Csongrád-Kettőshalom
1.	189,4 (8)	195,5 (11)	206	213	193,0 (5)	190,9 (7)	194
8.	145,5 (8)	141,5 (11)	146	145	151,0 (5)	141,3 (6)	139
9.	100,1 (8)	98,5 (11)	105	106	104,2 (5)	96,9 (7)	99
17.	152,5 (4)	144,2 (9)	144	—	143,6 (3)	136,0 (2)	134
45.	139,0 (2)	140,5 (11)	140	—	140,5 (4)	133,7 (6)	140
48.	74,0 (4)	68,1 (11)	73	71	69,2 (4)	69,3 (6)	70
51.	44,4 (5)	43,0 (11)	49	44	42,6 (4)	41,4 (4)	42
52.	31,0 (4)	31,3 (11)	33	30	31,4 (4)	30,8 (6)	34
8:1	77,1 (8)	72,3 (11)	67,9	64,1	78,9 (5)	75,2 (6)	71,7
17:8	102,3 (4)	101,7 (9)	89,6	—	95,1 (3)	94,2 (2)	96,4
9:8	68,3 (6)	69,3 (11)	71,9	73,1	69,1 (5)	68,5 (6)	71,2
48:45	48,8 (2)	49,3 (11)	52,1	—	49,2 (4)	51,9 (6)	50,0
52:51	71,8 (5)	73,2 (11)	67,4	68,2	74,2 (4)	73,2 (4)	80,9

Table 3a: Comparison of the finds various cultures

No. of measurements (Martin)	Cultures								
	Tripolye		Bodrogkeresztúr	Péceli					Tiszapolgár-Bodrogkeresztúr
	Findspots								
	Vyhvatintsy	Bilcze—Zlote		Szentés—Nagyhegy				Budapest—Andorstr.	Csongrád—Kettőshalom
1.	183,4 (5)	184,0 (12)	186,0	173	183	183	170	198	194
8.	132,2 (5)	137,2 (12)	134,4	136	130	146	129	144	139
9.	92,8 (5)	97,2 (2)	—	96	93	100	92	98	99
17.	135,5 (2)	138,0 (11)	135,0	—	144	134	—	138	134
45.	127,8 (4)	128,1 (8)	—	—	—	—	(119)	126	140
48.	69,0 (2)	70,6 (11)	66,8	—	67	67	66	78	70
51.	43,1 (4)	41,1 (11)	—	39	40	39	38	38	42
52.	31,9 (4)	31,5 (11)	—	29	31	29	28	32	34
8:1	72,3 (5)	74,6 (12)	72,7	78,9	71,0	81,1	75,8	72,7	71,7
17:8	96,5 (2)	100,6	98,1	—	110,0	91,7	—	95,8	96,4
9:8	—	—	—	71,1	71,5	68,4	71,3	68,0	71,2
48:45	52,1 (2)	55,1	54,7	—	—	—	55,4	61,9	50,0
52:51	—	76,9 (11)	85,1	74,3	77,5	74,3	73,6	84,2	80,9

we find the values of the mean sigma, after Howells, in another paper (1956) of Thoma — is the following:

$$\tau = \frac{1}{a} \sum_{i=1}^a \frac{d_i}{\sigma_i}$$

Thoma calculated on the basis of this formula the similarity of the Bodrogkeresztúr culture to the material of the other finds. The values obtained were published by Nemeskéri (1956).

For comparing the material of the grave at Csongrád-Kettőshalom with various series, I have applied nine characteristics. These characteristics can be found in case of every cemetery except the Bodrogkeresztúr culture that I have not used for calculation. In respect of the Pécel culture — based on the data contained in the Table — it seemed to be necessary to reckon the mean value.

The result of the comparison of grave at Csongrád—Kettőshalom according to the formula is as follows.

Alexandriya	Олександрія	0,554
Zaporizka	Запорізька	0,555
Bilcze—Zlote		0,829
Vykhvatintsy	Вихватинці	0,927
Podniprovyia	Подніпров'я	0,974
Kapulivka	Капулівка	1,129
Kamennye Potoki	Кам'яні Потоки	1,238
Pécel cultur		1,295

The next similarity is therefore given by the material of Alexandriya (Sredni Stog II), Zaporizka (Yamnaya) and Bilcze — Zlote (medium Tripolye) and the farthest one naturally by that of the Pécel culture. It can be established even according to the taxonomic analysis that the material from Csongrád considerably differs from that of Pécel and, owing to its strongly marked features, from the population of the Bodrogkeresztúr culture. Inferring from his Nordic and Cromagnoid characteristics, from his tall stature and robust bony frame, he belongs rather to the population of the quite early period of the Copper Age in Hungary.

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