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ANTHROPOLOGICAL FINDS OF THE PIT GRAVE CULTURE FROM THE SÁRRÉTUDVARI – ŐRHALOM SITE

The bones of eight individuals were found in the 7 archaeologically excavated kurgan burials discovered at the Sárrétudvari – Őrhalom site. They are, however, so poorly preserved that it barely affords an anthropological analysis. The morphological and metric examinations of the finds could appropriately be executed only in very few cases. The relatively better preservation of skeletons nos. 10 and 12 may be due to the burial rite. These skeletons lay directly on the bottom of the grave shaft. In the rest of the graves some kind of a mat, the raw material of which has not yet been identified, strongly penetrated with ochre was laid under the bodies during the burial (oral communication by I. M. Nepper and J. Dani archaeologists). This mat caused the strong decomposition of the bones.

The methods of SCHOU–MASSLER 1941; JOHNSTON 1961; NEMESKÉRI–HARSÁNYI–ACSÁDI 1960; ÉRY–KRALOVÁNSZKY–NEMESKÉRI 1963; MARTIN 1924; MANOUVRIER 1893; PEARSON 1899; BREITINGER 1938. were applied during the analysis. The affiliation of the metric data to categories followed ALEKSEEV–DEBETS's (1964) methods, and Penrose's distance analysis was used for statistical analyses (PENROSE 1954).

The finds are kept in the Anthropological Department of the Natural History Museum in Budapest.

Description of the finds

Skeleton no. 4 – 40–59 years old male

Very poorly preserved skull and postcranial bones, which are not suitable for morphological and metric analyses. The robustness of the long bones, especially of the humerus is striking.

No pathologic deformation could be observed on the bones, even on the few preserved lumbal vertebras. – There was no caries on the 30 teeth, the only anomaly we can mention is tooth crowding at the lower left I2. Abrasion is degree 2.

Skeleton no. 7 – mature male

Skull and postcranial fragments of a very poorly preserved skeleton. Only the bones of the feet are in a better condition. A stressed robustness can be observed.

There was not any pathologic deformation on the bone fragments and none of the 17-18 tooth fragments had caries. Abrasion is degree 2.

Skeleton no. 7a – 5–7 years old child

The fragments of a child's cranium and mandible were packed together with the skeleton of the adult with the same number. The age was determined from the teeth (Fig. 1.3)

The so-called "Bürstenschädel" phenomenon, a characteristic symptom of anaemia, can be observed in a developed phase on an oval patch on the calvarium (MANCHESTER 1983: "hair-on-end"). No deformation could be observed on the inner side of the skull.

Skeleton no. 8 – a young adult individual, the sex cannot be determined

The anthropological find consists of only a few skull fragments and teeth. – The abrasion of the premolars and the molars is degree 1.

Skeleton no. 9 – 23–30 years old male

Very poorly preserved fragments of the postcranial skeleton could be examined beside those of the mandible. The postcranial bones show strong robustness.

No pathologic deformation could be observed on the bone fragments and there is no caries in the 13 teeth. Tooth crowding can be demonstrated at the lower right I2. – Abrasion is uneven: that of the M3 is degree 0, the premolars and molars show an abrasion of degree 1, while on the canines and the incisors it reaches degree 2 (leather softening?).

Skeleton no. 10 – 44–55 years old male

The relatively well preserved, although somewhat defective skull and skeleton are relatively more gracile than the other skeletons.

The somewhat warped cranium is medium long – very narrow ovoid in the vertical norma with a hyperdolichocranial index. In norma occipitalis it is medium high, house-shaped, hyperacrocranic. From a lateral view it has an orthocranic index, no flattening can be observed in the obelion region, the profile of the occiput is curvoccipital. Occlusion is labiodont, there is no prognathism. In norma frontalis the rectangular face is narrow – very low, euryprosopic, the upper face is low, euryene. The orbits are meso – hypsoconch, the nose has a mesorrhine idex. The root of the nose is wide, the fossa canina is shallow and the bigonial width is large. – The body height calculated from the postcranial bones is high (Fig. 1.1).

The so-called Schmorl-beads observed on the thoracic and lumbar vertebras and the hyperostosis in an initial stage on the rims suggest disease. No anomalies can be seen on the few cervical vertebras.

The traces of two old, healed wounds can be seen parallelly, 22 cm from each other and also 22 cm from the sagittal suture, on the left parietal bone. The frontal one is the trace of a 12-mm long cut perpendicular

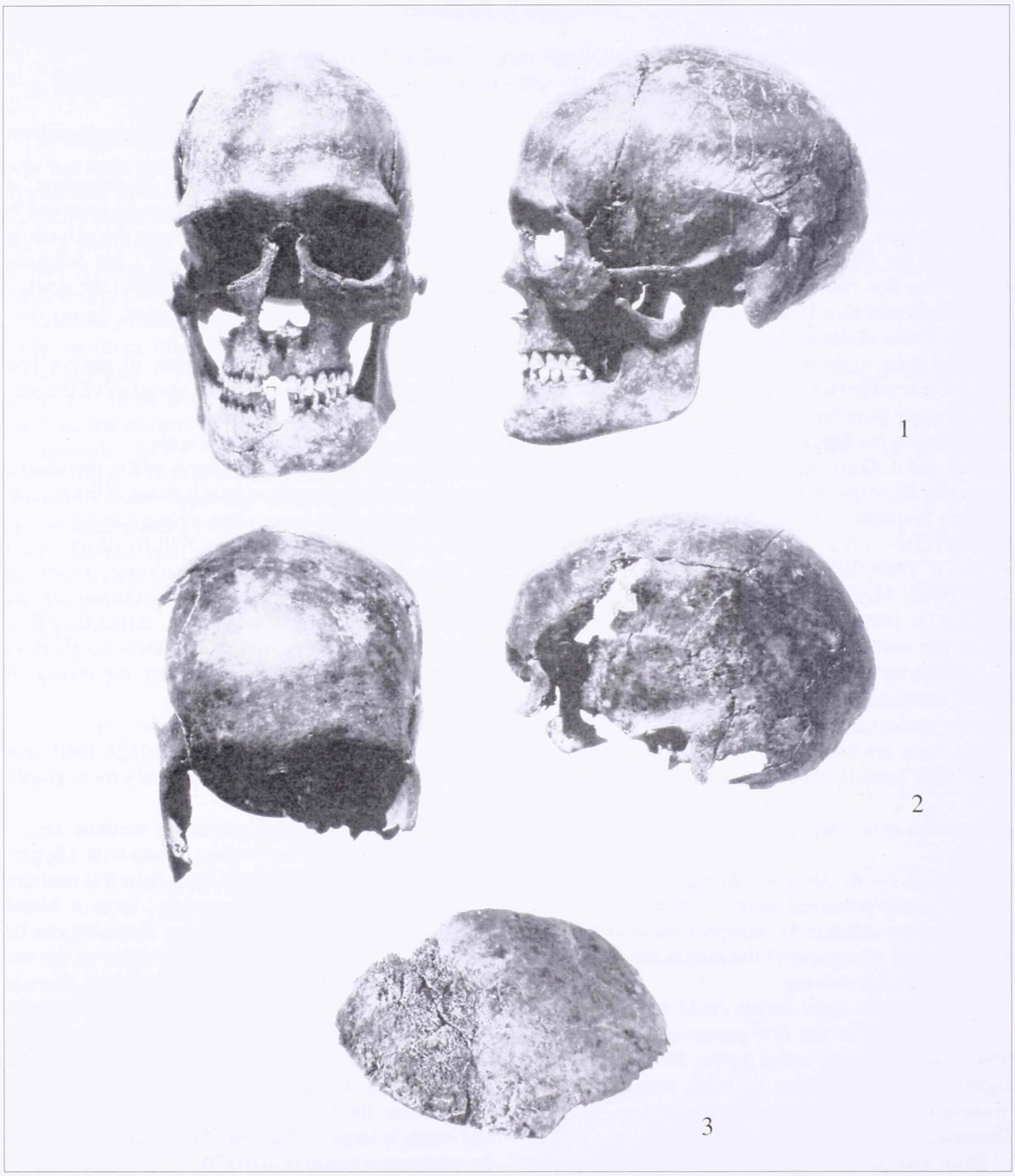

Fig. 1.: Sárrétudvari-Őrhalom; 1: Cranium of Grave 10; 2: Carnium of Grave 12; 3: Neurocranium fragment (Calva) of Grave 7a

to the sagittal suture. Neither fracture nor inflammation can be observed around it. The dorsal wound, which shows the shape of an oval depression, seems to be the result of a blow. It measures about 12 x 12 mm. No deformation can be seen on the inner side of the skull in either case.

There is no caries on the 26 preserved teeth. The only irregularities are the 1-2 mm large diastemata on

the two sides of the left canine as opposed to the densely distributed teeth on the right upper side. The upper right I2, the left I2 and PM1 and also the lower right C are rotated. All the M3 teeth are impacted. – Irregularities can be observed in the abrasion as well. As opposed to abrasion 1 of the premolars and the molars, the abrasion of incisors and canines (the upper and lower right I1 teeth were lost post mortem) is degree 3, and the plane of the abrasion slopes inwards in the upper row and outwards in the lower row (leather softening with chewing?).

Skeleton no. 11 – adult male (?)

This find of the series fragment is in the poorest condition, it was unsuitable for analysis. - There is no caries in the single preserved tooth.

Skeleton no. 12 – 15-17 years old, probably female (??)

Beside the fragmentary and defective skull, the postcranial bones are somewhat better preserved. Age determination was carried out from the synostosis of the ends of the long bones.

The very long calvarium must have been narrow ovoid from vertical and high, house-shaped in norma occipitalis. From a lateral view, the calotte is very long without flattened obelion region, the occiput is curvoccipital. In norma frontalis the outlines of the face cannot be reconstructed. The orbits have a mesochamaeconchic index, the nose index is chamaerrhine (Fig 1.2).

No pathologic deformations could be observed and there was no caries in the altogether 29 teeth.

Review of the characteristics of the finds

The seven graves that were unearthed at Sárrétudvari-Őrhalom are not all the burials in the Pit-grave cemetery, the Copper Age mound could not be entirely unearthed. – The skeletal remains of eight people were rescued from the graves. One of them was a child, 1 was a young person (perhaps a woman), 5 were adult men and one was an adult, whose sex could not be determined.

The distribution of the dead persons according to sex and age (1 Inf.I. –II. child, 1 juv. (woman ??), 2 adult men, 1 adult of undetermined sex and 3 mature men) does certainly not mirror the demographic constitution of the community that raised the mound. It cannot as yet be explained why these people were chosen to be buried here. At other sites archaeological excavations unearthed skeletons of children and various skeletons of men and women (Table 4), still the dominance of males is evident (Table 5). However, this can also be due to the faster decomposition of the more gracile female skeletons.

The bones at Sárrétudvari were very poorly preserved, the remains of some kind of an organic material (mat?) soaked with ochre cemented on the bones and, at the same time, helped their fast decomposition. So the metric and morphological examination of the bones was very difficult, often impossible (Tables 1–3). The only evaluable find was the skeleton of a man in grave 10. He was of a high stature with a narrow-low-eurymorphic face, narrow-hyperdolichocranial skull, less robust than the other people were. In the case of the other skeletons only the degree of robustness could be determined and the differences implied by it deduced.

Even this fragmentary find material afforded some remarks concerning the way of life and living conditions of the community:

1. The appearance of *anaemia* in the shape of "Bürstenschädel" implies that the nourishment was poor in iron (skeleton no. 7a);
2. not a single caries could be observed on the 127 teeth;
3. *spondylosis*, which was otherwise a frequent disease in prehistory, could be observed in a single case (skeleton no. 10);
4. the inflammation-free healing of the *cutting* and the *blow* on the skull of the man buried in grave no. 10 suggests medicinal treatment;
5. strong *abrasion* restricted to the incisors and the canines could be observed in two cases (skeletons nos. 9 and 10), which could be the result of some kind of a working process (softening of wood bark or leather with chewing).

Results of the taxonomic and Penrose-analyses

Only two finds of the fragmentary series can be evaluated from a taxonomic point of view, and even these with reservations.

Skeleton no. 10, although it can be grouped among the cr-n variant common at the Pit-grave people suggests either the gracilisation of the basic type or a mixture between the eastern immigrants and the local population with the hyperdolichocranial skull, the narrowness of the eurymorph face and the hypsiconch orbits. Skeleton no. 12, probably of a woman, was much more gracile and probably represents the latter group.

Two type variants could be determined up to now among the finds of the Pit-grave culture in the Carpathian Basin from the skull measurements and indices expressed in categories (Tables 6-7). Including the finds from Brailița in Moldavia, the metric data of which are known in details (NECRASOV-MIU 1984), a third type variant can also be observed in the population of the Pit-grave culture in the region (Table 8).

Whether local gracilisation or a mixture with the local population caused the development of the above types, it cannot as yet be told from the small number of the finds.

It was also the small item number that prevented the Penrose-analysis of the Pit-grave skull series in the Carpathian Basin, while the larger skull-series of the Romanian find material proved sufficient. Forty-four Neolithic and Copper Age and twenty-nine Bronze Age series were included in the analysis. Using 0.05 % as a significance level, the Pit-grave series of Romania is significantly connected to the populations of *the Srubnaia culture on the Lower Volga* and of the *Fatjanovo and Balanovo* Neolithic *cultures* (Table 9). This is comparable to the archaeological theory according to which the Pit-grave people arrived (at least in Romania) from the East (ECSEDY 1979).

Table 1. *Sárrétudvari – Őrhalom: Main cranial measurements*

Martin No.	*Grave no. 10 – Mat. male*	*Grave no. 12 – Juv. female(??)*
1.	183	196
5.	–	–
8.	130	–
9.	88	96
10.	104	–
11.	115?	–
12.	120	–
13.	100	–
17.	–	–
20.	116	119?
23.	505	–
24.	403	–
25.	–	371
26.	122	127
27.	119	123
28.	–	121
29.	111	112
30.	109	113
31.	–	103
40.	–	–
43.	104	99
44.	98?	94
45.	129?	–
46.	88?	–
47.	107	–
48.	66	–
50.	27.5	23
51.d.	40?	38
51.s.	34	–
52.d.	33.5	30
52.s.	34	–
54.	24	26
55.	49	49?
60.	48	–
61.	59	–
62.	–	–
63.	34?	–
65.	127	–
66.	106	96
69.	28?	28
70.	61	d. 49
71a.	37	d. 36

Table 2. *Sárrétudvari – Őrhalom: Main eranial indices*

Martin No.	*Grave no. 10 – Mat. male*	*Grave no. 12 – Juv. female(??)*
8/1	71.0	–
20/1	63.4	60.7?
20/8	89.2	–
9/8	67.7	–
47/45	83.0?	–
48/45	51.2?	–
52/51 d.	83.8?	79.0
52/51 s.	89.5	–
54/55	49.0	53.1?

Table 3. *Sárrétudvari – Őrhalom: Postcranial measurements and estimated* (M = Manouvrier, P = Pearson, B = Breitinger)

Martin No.	*Grave 9*		*Grave 10*	
	d.	*s.*	*d.*	*s.*
Clavicula:				
1.	–	–	–	157
6.	–	–	39	39
Humerus:				
1.	–	–	329	332
2.	–	–	328	329
4.	–	–	66	64
5.	–	24	23	21
6.	–	17	16	16
7a.	–	–	65	64
10.	–	–	48	47
Radius:				
1.	–	–	255	254
4.	–	16	17	16
5.	–	13	12	11
Ulna:				
1.	–	–	–	274
11.	–	18?	18	19
12.	–	17	13	13
Femur:				
1.	–	–	478	–
2.	–	–	470	–
6.	–	33	29	27
7.	–	24?	29	29
9.	–	–	37	39
10.	–	–	24	27
19.	–	47?	47	45
Tibia:				
1.	–	–	384	–
1b.	–	376?	–	–
8a.	–	41	36	35
9a.	–	26	24	25

Martin No.	Grave 9		Grave 10	
	d.	s.	d.	s.
Fibula: 1.	–	–	–	–
Estimates stature:				
M:	–		1700	
P:	–		1687	
B:	1704		1719	

Table 4. *The published anthropological finds of the Pit-grave culture from the Carpathian Basin*

1. Balmazújváros (Hortobágy)-Árkusmajor-Kettőshalom
   MARCSIK 1979: 1 male
2. Csongrád - Kettőshalom - Bárdos tanya
   MARCSIK 1971-72: 1 male
3. Debrecen - Basahalom
   MARCSIK 1979: 2 males
4. Debrecen - Dunahalom
   MARCSIK 1979: 1 female
5. Debrecen (Hortobágy) - Halászlaponyag
   MARCSIK 1979: 1 female
6. Derekegyház - Ibolyásdomb
   ZOFFMANN 1980-81: 1 child, 1 female
7. Dévaványa -Barcéhalom
   MARCSIK 1979: 1 male
8. Dévaványa - Csordajárás
   MARCSIK 1979: 3 children
9. Kétegyháza - Kétegyházi tanyák
   MARCSIK 1979: 3 children, 3 males, 2 females
10. Nagyhegyes - Elep - Mikelapos
    MARCSIK 1979: 1 female
11. Perlez - Batka - C (Pasic)
    MIKIĆ, cit. MEDOVIĆ 1987: 4 children, 1 female
12. Perlez - Vuna
    MIKIĆ, cit. MEDOVIĆ 1987: 2 males
13. Püspökladány - Kincsesdomb
    MARCSIK 1976: 1 male, 1 adult, 1 ?
14. Sárrétudvari - Balázshalom
    MARCSIK 1979: 1 female
15. Sárrétudvari -Őrhalom
    ZOFFMANN - : 1 child, 5 males, 1 female (?), 1 ?
16. Szentes - Besenyőhalom
    ZOFFMANN 1976-77: 1 male

Table 5 *Distribution according to sex and age of the Pit-grave anthropological finds from the Carpathian Basin*

	?	f	n	Σ (%)
Inf. I.	6	–	–	6 (14.6)
Inf. I–II.	2	–	–	2 (4.9)
Inf. II.	3	–	–	3 (7.3)
Jv.	1	–	1	2 (4.9)
Ad.	1	11	4	16 (39.0)
Ad.–Mat.	–	1	–	1 (2.4)
Mat.	–	6	2	8 (19.5)
Sen.	–	–	1	1 (2.4)
Ad.–Sen.	1	–	–	1 (2.4)
?	1	–	–	1 (2.4)
Σ	15 (36.59)	18 (43.90)	8 (19.51)	41 (100.00)

Table 6. *The main cranial measurements and indices of the Pit-grave finds from the Carpathian Basin (males)*
1. Balmazújváros, 2. Csongrád, 3. Debrecen–Basahalom, 4. Debrecen-Dunahalom, 5. Dévaványa, 6. Kétegyháza 5a/1, 7. Kétegyháza 6/3, 8. Sárrétudvari-Őrhalom grave no. 10, 9. Szentes

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1	–	194	–	178	–	–	–	183	–
8	–	139	136	140	–	–	–	130	–
9	101	99	–	98	103	99	107	88	–
17	–	134	–	–	–	–	–	–	–
20	–	119	–	–	–	–	–	116	–
45	–	140	–	–	–	–	–	129?	–
48	–	115	–	–	122	–	–	107	–
51	–	70	–	–	72	–	–	66	–
52	–	42	–	–	–	40	42	38	–
54	–	34	–	–	–	34	28	34	31
55	–	26	23	–	–	–	–	24	–
66	106	54	–	–	–	–	–	49	–
		104	108	–	–	–	–	106	–
8/1	–	71.7	–	78.7	–	–	–	71.0	–
17/1	–	69.1	–	–	–	–	–	–	–
20/1	–	61.3	–	–	–	–	–	63.4	–
9/8	–	71.2	–	70.0	–	–	–	67.7	–
47/45	–	82.1	–	–	–	–	–	83.0?	–
48/45	–	50.0	–	–	–	–	–	51.2?	–
52/51	–	80.9	–	–	–	85.0	66.0	89.5	–
54/55	–	48.2	–	–	–	–	–	49.0	–

Table 7. *The main cranial measurements and indices of the Pit-grave finds from the Carpathian Basin (females)*
1. Debrecen, 2. Derekegyház, 3. Kétegyháza 6/1, 4. Sárrétudvari-Balázshalom, 5. Sárrétudvari-Őrhalom grave no. 12

	1.	2.	3.	4.	5.
1	–	171	187	–	196
8	–	138	130	137	–
9	100	92	98	93	96
17	–	–	137	–	–
50	–	112	118	–	119?
45	–	139	–	–	–
47	–	110	–	–	–
48	–	67	–	65	–
51	–	40	41	40	d. 38
52	–	31	29	30	d. 30
54	–	26.5	–	23	26
55	–	49	–	48	49?
66	–	103	–	–	96
8/1	–	80.7	74.9	–	–
17/1	–	–	73.3	–	–
20/1	–	65.5	63.1	–	60.7?
9/8	–	66.7	70.0	67.9	–
47/45	–	79.1	–	–	–
48/45	–	48.2	–	–	–
52/51	–	77.5	70.7	75.0	79.0
54/55	–	54.1	–	47.9	53.1?

Table 8. *The known type variants of the Central-European Pit-grave finds* (according to ALEKSEEV–DEBETS 1964)

Type variant 1 Csongrád Derekegyház Brailița 17	***Type variant 2*** Sárrétudvari 10 Kétegyháza 5a-1	***Type variant 3*** Brailița 1, 2 Brailița 7, 10 Brailița 19
low/middle high broad eurymorphic face	low narrow eurymorphic face	high narrow leptomorphic face
medium long/long medium bvroad/broad meso/hyper-dolichocranial	medium long narrow dolichocranial	very long narrow/medium hyper-ultra-dolichocranial
chamaeconch chamaerrhine broad mandible	hypsiconch mesorrhine broad mandible	chamaeconch leptorrhine

Table 9. *Generalised size + shape (CR2 distances of the combined male and female series of the Romanian Pit-grave finds from other Neolithic, Copper Age and Bronze Age series*

Neolithic and Copper Age	
Fatjanovo c.	0.135
Balanovo c.	0.158
Tripolje c.	0.170
C. of the Globular amphoras	0.183
Afanasevo c. (Minusinsk Basin)	0.206
Corded ware (Poland)	0.214
Linear Pottery of the Great Hungarian Plain (=AVK)	0.298
Schönstedt (Walternienburg c)	0.317
Zlota c.	0.323
Cernica (Boian c.)	0.324
Afanasevo c .(Altai-region)	0.335
Al'Ubaid (Neolithic)	0.343
Vlasac (Lepenski Vir c.)	0.369
Troy I-V	0.375
Sondershausen (Linear Pottery)	0.409
Lepenski Vir c.	0.418
Bilcze Zlote (Tripolje c.)	0.432
Dereivka (Dniepro-Doniets c.)	0.435
Körös + Criş c.	0.446
Early AVK group	0.447
Nikolskoe (Dniepro-Donets c.)	0.447
Corded Ware (Germany)	0.450
Neolithic-EH periods (Greece)	0.484
Ruse (Hamangia c.)	0.485
Brzesc Kujawski (Jordanovo c.)	0.492
Bruchstedt (Linear Pottery)	0.492
Chalcolithic (Middle + East Anatolia)	0.503
Corded ware (Bohemia)	0.504
Nea Nikomedeia (Neolithic)	0.509
Körös+Starčevo+Criş c.	0.551
Srednij Stog 2. c.	0.551
Vovnigi (Dniepro-Donets c.)	0.558
Combpit c. (Baltic)	0.593
Rössen + Hinkelstein c.	0.599
Linear Pottery (Germany + Alsace)	0.655
Baden + Kostolac + Coțofeni c.	0.680
Lengyeli c.	0.746
Tisza c.	0.822
Linear Pottery (Central Europe)	0.832
Bodrogkeresztúr c.	0.842
Linear Pottery (Bohemia)	0.843
Volnoje (Dniepro-Donets c.)	0.900
Starčevo c.	0.908
Vinča c.	1.005
Bronze Age	
Srubnaia c. (Lower Volga region)	0.106
Katakombnaia (Lower Volga region)	0.170
Andronovo c. (Kazakhstan)	0.182
Aunjetitze c. (Germany)	0.190
Jamnaia c. (Ukraine)	0.199
Jamnaia c. (Lower Volga region)	0.228
Katakombnaia (Ukrain)	0.238
Abaševo c.	0.261
Srubnaia c. (Ukrain)	0.264
Franzhausen (Veterov c.)	0.348
Mierzanowicze c.	0.366
Noua c.	0.367
Grossbrembach (Aunjetitze c.)	0.390
Andronovo c. (Minusinsk Basin)	0.400
Aunjetitze c. (Moravia)	0.439
Hurbanovo c.	0.479
MH-LH II periods (Greece)	0.483
Monteuoru c.	0.485
LH III periods (Greece)	0.508
Ugarit (Aeneolithic-Bronze Age)	0.539
Tápé (Tumulus c.)	0.552
Aunjetitze c. (Bohemia)	0.598
Hainburg (Gáta-Wieselburg c.)	0.601
Maros-Perjámos c.	0.603
Pitten (Tumulus c.)	0.603
Bell-beaker pottery (Moravia)	0.839
Bell-beaker pottery (Germany)	0.840
Gemeinlebarn (Gemeinlebarn group)	0.881
Bell-beaker pottery (Bohemia)	1.446

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