

## THE TAXONOMIC METHOD IN HUNGARY AND ITS APPLICATION IN THE PALAEOANTHROPOLOGICAL RESEARCH

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(Received January 20, 1977)

### Abstract

The author sums up the prehistorical anthropological (palaeoanthropological) researches carried out in Hungary with the taxonomical method between 1950 and 1975. The fundamental principle of the method is that *Homo sapiens* is a polytypical species, that is to say it is divided into sub-species (geographical races). In historical times, thus in Hungary particularly in the migration period (the so-called „Völkerwanderung”) and in the age of the Hungarian conquest of this country (century 10), there took place considerable migrations. At the series of the migration period, not only the taxons of the Europid but even some taxons of the Mongolid great race may be demonstrated on the basis of an analysis performed within the series. The simplest verification of the taxonomical method is to establish the taxon mean. In this paper, the development of the taxonomy of Europids and Mongolids, based on their skeletal material, as well as the metric characterization of human races are coming into question.

There are several possibilities for the anthropological (palaeoanthropological) investigation of skeletal material originating from authentic excavations. One of these is taxonomical analysis. Its theoretical basis is given by the fact that *Homo sapiens* is not only polymorphic, but also a polytypic species. Hominid evolution took place in the framework of a polytypic species and ramified into some subspecies (geographical races).

In a later period of hominid evolution — which may be called the history of mankind in biological sense — a decisive factor was the migration of human populations. Because of the migration of the more or less isolated geographic races (great-race), the stratification of human populations and their interbreeding here have occurred with increasing frequency a phenomenon that never takes place in animal populations. It should also be noted that, apart from the four great races (Europid, Mongolid, Negrid and Veddo-Australid) some misco-subspecies also developed. The number of these varies according to whether or not the anthropologist that investigates or compares the populations peopling the earth belongs to the lumpner or the splitter type with respect to his work of classification.

During the twenty years between 1950 and 1970 I endeavoured, relying on the works of Hungarian and foreign anthropologists, particularly in connection with the investigation of the skeletal remains originating from the Age of Migration (so-called „Völkerwanderung”) in Hungarian territory (Avars, Hungarians) — to develop a taxonomy on the basis of the skeletal material (craniosystematics), primarily with regard to Europids and Mongolids. The necessity of developing the method was suggested almost imperatively by the Avar-age series because within the same

cemetery, the subpopulations (clans, ethnic groups) representing two great-races (Europids- Mongolids) were not rarely buried beside each other.

The investigations and results have mostly been published in English, German, or French languages, some of which are not easily accessible for the palaeoanthropologists interested. The outlines of the established systematization (taxonomy) was also published repeatedly, but, from the point of view of its practical application, a comprehensive presentation of the results seems to be necessary. In this comprehensive work I am trying to describe the process in the course of which these results were produced. I do not want to give any full details here of further fundamental principles of the taxonomical system. Instead, I refer to the following works (LIPTÁK 1957b, 1959, 1962, 1963b, 1965, 1969). Concerning the classification I remark that in general I speak of human races that I call taxons or sometimes types. In all these cases I think primarily of the skeletal material. As in the anthropological literature the characterizations concerning the living populations predominate I was anxious to keep this in view making my terms parallel with these.

On the basis of investigating the Ostyak crania collected by JÁNOS JANKÓ in Western Siberia in the region of the middle-Ob and the river Yugan (LIPTÁK, 1950), the metrical and morphological characterization of the Uralian (Ugrian) taxon has become possible. On the conquering Magyars of the tenth century the Uralian race can be demonstrated as well (LIPTÁK, 1951). On the skeletal material of the entirely excavated cemetery of nearly 400 graves at Kérpuszta, from the eleventh century (Árpádian Age), it was first possible to carry out a detailed taxonomical analysis with reference to the appropriate comparisons (LIPTÁK, 1953). The taxons are verified as „real“ by the calculated mean values. Concerning the crania of the separate taxons, the characteristic data are given by 9 metrical data, 8 indices and the mean of body height, together with the frequency of the taxon. The selection of morphological characters according to the principle of taxonomical relevance also advance differential diagnosis which cannot be mentioned in this short paper. In the series of Kérpuszta, that has an almost completely Europid character, the following main taxons could be distinguished with adequately high frequencies: In males: Gracile-Mediterranean (its sign is *m*), Cromagnoid-A (*crA*), Cromagnoid-B or Eastern-Europid (*crB*), and the Dinaric element (*d*) (Table 1). The middle-values concerning the Alpine (*a*) and Nordoid-Atlanto-mediterranean (*n*) taxons cannot be considered completely reliable, owing to the low case number. — In females: three races are important owing to their numerical ratio: the Gracile-Mediterranean, the Cromagnoid-B, and the Cromagnoid-A (Table 2).

The Dinaric, Alpine, and Nordoid elements are also of lower numerical ratio for females. In a paper on taxonomic analysis it is always decisive to include photographs in the proper number.

I first noticed the existence of the Pamirian race in the conquering ancient Hungarians (Magyars) in the small series of Rád (1953b). Later characterized the Turanid type from the morpho-taxonomical point of view on the basis of concrete metrical material concerning males and females (LIPTÁK, 1954a). In the same work I succeeded in outlining the Pamirian type better and in giving its differential diagnosis compared to the Dinaric and Armenoid races.

Also elaborated were the data recorded in the investigations and diary by JÁNOS JANKÓ on the Ostyaks (Khantis) at the end of the last century. I could therefore perform the taxonomical evaluation of the Uralian race of Europeo-Mongolid character

Table 1. Kérpusztá, 11th century (LIPTÁK, 1953).  
Taxon means. Males

Measurement number (Martin)	Measurements indices	Gracile Mediterranean (m)		Cromagnoid-A (crA)		Cromagnoid-B (crB)		Dinaric (d)	
		N	M	N	M	N	M	N	M
1.	Glabello-occipital length .....	22	182,3	17	187,2	16	181,3	12	178,7
8.	Maximum breadth of cranium .....	23	136,7	18	144,	15	145,1	12	146,2
9.	Minimum frontal breadth .....	23	97,3	17	101,1	16	100,0	12	98,3
17.	Basion-bregma height	22	133,4	17	138,2	13	135,4	12	138,7
38.	Cranial capacity ....	22	1370,2	15	1528,5	13	1495,9	12	1515,8
45.	Bizygomatic breadth.	21	129,3	17	137,0	13	133,5	9	138,3
47.	Face height .....	20	116,6	16	115,3	12	111,6	10	117,2
48.	Upper face height ...	21	68,9	14	69,1	13	66,8	9	71,1
72.	Total facial angle ...	17	87,9°	10	85,8°	9	86,2°	6	86,8°
8:1	Cranial index .....	22	74,9	17	77,4	15	79,9	12	81,8
17:1	Length-height index .	21	73,0	15	73,7	13	74,5	12	78,4
17:8	Breadth-height index	22	97,7	17	95,2	13	93,6	12	94,9
9:8	Fronto-parietal index	23	71,1	16	70,2	15	68,8	12	67,3
47:45	Facial index .....	18	91,3	15	84,2	11	86,3	7	84,0
48:45	Upper facial index ..	19	54,0	13	51,1	12	50,4	6	50,5
52:51	Orbital index .....	22	85,3	15	81,3	14	77,7	12	83,5
54:55	Nasal index .....	21	47,7	15	52,6	11	53,2	10	46,7
	Calculated stature ...	21	163,1	16	169,0	16	161,4	12	168,5

(1954c). In the analysis of the two large Avar-age series from Üllő (LIPTÁK, 1955a) and the recognition of the Avar-age Mongolids, mainly the Sinid type of females, made this possible.

It became necessary to elucidate clearly and unequivocally the taxonomical position of both the Turanids with Europo-Mongolid character, and the Pamirian race, with respect to both the cranial material and the living population. I did, this in a systematics paper (1955b). The race SCHWIDETZKY (1950) called Turanid is known in the anthropological literature as the Pamirian race. In the same work the metrical and morpho-taxonomical characterization of the Turanid and Pamirian types (Table 3) of the conquering Hungarians was given.

I carried out a comparative analysis in a major monograph on the recent taxon mean-values of Avars and Hungarians in the Danube—Tisza Interstream Region, concerning the Nordoid males and females, as well as the males of Cromagnoid-A type (1957b).

The Avars getting to the Carpathian Basin from Central Asia brought about the „most Mongolid age“ of the Carpathian Basin from century 6 to century 9 when the Mongolid and Mongoloid components amounted together to 16 to 17 per cent of the population. In studying the Mongolid component of the Avars in Hungary, I also established the *differential diagnosis of the Europid and Mongolid great races* and the taxonomical distribution of Mongolids (1959). In this work some taxon

Table 2. Kérpusztá, 11th century (LIPTÁK, 1953).  
Taxon means. Females

Measurement number (Martin)	Measurements, indices	Gracile Mediterranean (m)		Cromagnoid-B (crB)		Cromagnoid-A (crA)	
		N	M	N	M	N	M
1.	Glabello-occipital length . . . . .	23	176,1	12	174,6	10	182,0
8.	Maximum breadth of cranium . . . . .	23	132,4	11	139,4	9	143,7
9.	Minimum frontal breadth . . . . .	21	92,3	12	96,1	10	98,5
17.	Basion-bregma height . . . . .	20	129,6	11	129,6	6	135,0
38.	Cranial capacity . . . . .	18	1270,2	11	1339,1	6	1404,0
45.	Bizygomatic breadth . . . . .	20	120,8	11	127,1	8	130,8
47.	Face height . . . . .	22	109,4	11	103,2	8	112,1
48.	Upper face height . . . . .	22	64,3	10	61,8	8	66,0
72.	Total facial angle . . . . .	15	84,4°	9	85,9°	2	89,0°
8:1	Cranial index . . . . .	23	75,3	12	79,8	9	78,3
17:1	Length-height index . . . . .	20	74,3	11	74,3	6	75,1
17:8	Breadth-height index . . . . .	20	98,0	11	93,3	6	95,5
9:8	Fronto-parietal index . . . . .	21	69,9	12	69,1	9	68,9
47:45	Facial index . . . . .	19	88,7	10	81,3	6	83,8
48:45	Upper facial index . . . . .	19	53,5	9	49,2	6	50,1
52:51	Orbital index . . . . .	22	84,9	12	83,8	9	86,4
54:55	Nasal index . . . . .	21	49,7	11	57,4	6	53,7
	Calculated statura . . . . .	21	152,3	11	152,7	9	157,0

Table 3. Ancient Hungarians (10th century)  
Taxon means (LIPTÁK, 1955).

Measurement number (Martin)	Measurements, indices	Turanid (t)				Pamirian (p) Males	
		Males		Females		N	M
		N	M	N	M		
1.	Glabello-occipital length . . . . .	7	177,8	10	173,6	13	179,1
8.	Max. breadth of cranium . . . . .	7	150,2	10	145,3	13	153,6
9.	Min. frontal breadth . . . . .	7	100,7	10	94,3	13	98,6
17.	Basion-bregma height . . . . .	7	136,0	8	128,6	8	138,0
45.	Bizygomatic breadth . . . . .	7	139,4	10	131,2	12	138,4
47.	Face height . . . . .	6	118,5	8	109,8	12	122,7
48.	Upper face height . . . . .	6	72,8	10	68,6	10	72,5
72.	Total facial angle . . . . .	4	85,5°	7	85,8°	6	83,8°
8:1	Cranial index . . . . .	7	84,5	10	83,7	13	85,8
17:1	Length-height index . . . . .	7	76,2	8	73,8	8	76,8
17:8	Breadth-height index . . . . .	7	90,3	8	89,2	8	90,3
9:8	Fronto-parietal index . . . . .	7	66,9	10	65,6	13	64,2
47:45	Facial index . . . . .	6	85,0	8	84,2	11	88,5
48:45	Upper facial index . . . . .	6	52,1	10	52,1	13	52,4
52:51	Orbital index . . . . .	7	82,3	10	83,1	13	82,7
54:55	Nasal index . . . . .	6	46,6	10	50,3	13	48,3
	Calculated stature . . . . .	—	—	3	155,6	7	167,7

mean-values were published concerning the following Mongolids: Sinid males (s), Baikal (b) race (males and females), Sajan (sa), or low-faced Mongolid (males and females) and finally the Europo-Mongolid Jenisej (j), resp. Americanoid taxons (males and females); the Central-Asiatic Mongolid type (ca) was also mentioned but — owing to the small sample size — the taxon mean-values could not be calculated. I called particular attention to the phylogenetic importance of the Bajkal race (1972) and to the fact that this taxon raises the possibility of the Mongolid great race developing from populations of Neanderthaloid type. This idea was raised in the Hungarian anthropological literature first by BARTUCZ (1929) and LIPTÁK (1961).

In our work we established taxon mean-values (Table 4) for the Central-Asiatic (ca) type within the Mongolid great-race (LIPTÁK—MARCSIK, 1976). The Sinid male taxon mean-values could now be calculated on the basis of a larger sample size. The data of the females of Sinid type — on the basis of Üllő I. that quoted earlier — also have a part in this monograph in Table 5.

In the works published later some recent taxon mean-values concerning further Europid races were reported. Enumerated some of these are: Avar-age males of Nordoid type: Homokmégy-Halom (LIPTÁK, 1957a); Alattyán (LIPTÁK, 1963a); Szeged-Kundomb (LIPTÁK—MARCSIK, 1966). — Avar-age females of Pamirian type: Alattyán (LIPTÁK, 1963a); Szeged-Kundomb (LIPTÁK—MARCSIK, 1966).

It has been emphasized that morpho-taxonomical investigation is based decisively upon the principle of taxonomic relevance in selection of characters. The otherwise objective procedure of the so-called „numerical taxonomy“ that does not

Table 4. Avars in Hungary  
Central Asiatic (ca). Taxon means (LIPTÁK—MARCSIK, 1976).

Measurement number (Martin)	Measurements, indices	Males		Females	
		N	M	N	M
1.	Glabello-occipital length . . . . .	7	181,4	9	175,4
8.	Maximum breadth of cranium . . . . .	7	149,4	9	145,7
9.	Minimum frontal breadth . . . . .	7	95,0	9	94,1
17.	Basion-bregma height . . . . .	7	134,2	7	120,5
38.	Cranial capacity . . . . .	5	1415,6	6	1350,8
45.	Bizygomatic breadth . . . . .	7	140,5	7	131,1
47.	Face height . . . . .	6	131,8	8	119,1
48.	Upper face height . . . . .	7	81,4	9	72,2
72.	Total facial angle . . . . .	5	85,0°	6	86,3°
8:1	Cranial index . . . . .	7	82,3	9	83,7
17:1	Length-height index . . . . .	7	73,6	7	68,3
17:8	Breadth-height index . . . . .	7	89,9	7	82,9
9:8	Fronto-parietal index . . . . .	6	63,2	9	64,7
47:45	Facial index . . . . .	6	94,4	6	91,8
48:45	Upper facial index . . . . .	7	57,8	7	55,9
52:51	Orbital index . . . . .	7	82,8	9	88,7
54:55	Nasal index . . . . .	7	48,5	8	52,4
	Calculated stature . . . . .	4	166	4	159

differentiate between the taxonomical characteristics seems therefore to be unacceptable. That goes for some statistical procedures, as well.

According the opinion of the author in palaeoanthropological research the points of view of evolutionary taxonomy are uniformly valid. This statement applies with equal force to the process of hominid evolution and to the taxonomy of the subspecies of *Homo erectus* and *Homo sapiens*. There may be some research workers that do regard as dispensable taxonomical research in palaeoanthropological investigation as an aim; the taxonomical method, however, as a means, has verifiably proved to be very useful for revealing the course of microevolution and ethnogenesis.

Table 5. Avars in Hungary.  
Taxon means

Measurement number (Martin)	Measurements indices	Sinid (s)				Baikal (b)			
		Males (Lipták—Marcsik 1976)		Females (Lipták 1955)		Males (Lipták 1959)		Females (Lipták 1959)	
		N	M	N	M	N	M	N	M
1.	Glabello-occipital length .....	5	180,2	15	174,6	12	188,6	7	178,7
8.	Max. breadth of cranium .....	5	140,0	16	139,8	13	144,4	8	139,7
9.	Min. frontal breadth	4	97,5	17	92,5	13	93,5	9	92,1
17.	Basion-bregma height .....	5	129,4	7	125,4	11	127,2	8	123,8
38.	Cranial capacity ..	5	1339,4	7	1273,0	8	1403,0	6	1244,3
45.	Bizygomatic breadth	5	136,2	17	126,0	13	136,7	8	125,6
47.	Face height .....	5	130,2	15	113,0	12	127,3	6	120,5
48.	Upper face height	5	80,8	16	69,7	13	77,2	9	74,0
72.	Total facial angle	5	88,6°	7	84,0°	7	85,1	2	85,0°
8:1	Cranial index .....	5	77,7	15	80,1	11	75,8	7	77,7
17:1	Length-height index	5	71,8	7	71,9	11	67,6	7	69,1
7:8	Breadth-height index .....	5	92,3	7	88,8	11	88,7	8	89,4
9:8	Fronto-pariet. index	4	68,6	16	66,0	13	65,0	8	66,1
47:45	Facial index .....	5	95,6	15	89,3	11	93,1	6	96,8
48:45	Upper facial index	5	59,3	16	54,8	12	56,2	8	58,9
52:51	Orbital index .....	5	88,7	16	87,4	14	83,9	9	86,1
54:55	Nasal index .....	5	45,2	15	51,1	13	46,8	7	51,2
	Calculated stature	5	169,0	10	154,9	3	162,0	—	—

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