

**SYMPOSIUM**

# **Anthropological conclusions of the study of Roman and Migration periods**

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**ABSTRACT** This paper outlines the history and results of the anthropological analysis of the population of the Central Danubian Basin ranging from Roman Period to the 9<sup>th</sup> century in time. It is very important to emphasize that publications with anthropological description are of vital importance. However, for lack of space, this summary concentrated only on those works that set out to summarize and to compare, or to produce an analysis according to some innovative approach.

**KEY WORDS**

archaeological periods  
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This paper outlines the history and results of the anthropological analysis of the Migration Period population in the Central Danubian Basin. The time envelope concerned was the first 900 years after Christ. The Roman Period traditionally was and is not classified to be a part of the Great Migration's timespan, but our previous paper stopped sometime around the birth of Christ, therefore we provided an outline of Roman Period and Barbaricum studies as well. Hundreds of publications were dedicated to the anthropological description of the population of these times. It is very important to emphasize that these types of studies are of vital importance. However, for lack of space, this summary concentrated only on those works that set out to summarize and to compare or to produce an analysis according to some innovative approach. We accepted one exception: supplementary papers filling blind spots were included in our selection.

The Romans conquered what is today called Transdanubia (Dunántúl) and organized the province Pannonia on its territory in the first decades of the 1<sup>st</sup> century A.C. Their fortified border, the limes, ran on the western bank of the Danube. Roman rule did not spread beyond the river, to the Danube-Tisza region and to territories east of the Tisza. In the early centuries after Christ these parts were first inhabited by Sarmatian tribes (Jazygs and Roxolans) of Iranian origin, then Germanic tribes partially took over the place of Sarmatians. Some Germanic tribes (Langobards, Goths) migrated to Transdanubia, too. The appearance of the Huns added another element to the already complicated ethnic structure. The Avars came in the 6<sup>th</sup> century, and they built an empire that might be seen as the forebear of the later established Hungarian state in its territorial and structural features (Bóna 1984).

We based the review of the anthropological analysis of our period on this historical summary.

## **Roman Period**

A large number of cemetery-publications dealt with the Roman Period population but no comprehensive analysis was produced up to the present. The large populations of this period made a number of comparative studies possible.

Éry (1968) treated the Roman Period inhabitants of the location of Majs. She concluded that the group of women presented a significantly more homogenous character than the men from the same site. While the Mediterranean type proved almost exclusively dominant among females, the male group, though also presenting a preponderance of the Mediterranean type, contained Nordo-Mediterranean, Nordoid, Dinaroid and Alpine forms as well. Éry separated a rather gracile and a more robust subform within the Mediterraneans of this cemetery, and she considered them of different origin. She found the population of Majs similar not to the contemporary population of Pannonia, but to those of Varna and the region of the present Switzerland and Southern-Germany.

The late Roman Period (5<sup>th</sup> century) population of Tokod was also studied by Éry (1975). By taxonomical analysis she found two thirds of this population dolichocran and she judged them to be representatives of the romanized people inhabiting Pannonia. The remaining one third proved to be mesocran and brachycran, and the author forwarded the hypothesis that they had to come from the Barbaricum. Her comparative analysis not only established the survival of late Roman population elements in Transdanubian Germanic cemeteries but, what is more, she found their presence in a few 6<sup>th</sup>-8<sup>th</sup> centuries cemeteries, too.

The study of the anthropological material of the cemeteries from the Late Roman Period in the SE Transdanubia

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(Wenger 1968) led to the establishment of the following taxonomical groups:

- Nordoid-Protoeuropoid type, characterized by a long to medium long skull, wide forehead, narrow to medium narrow total and upper face and a great medium to medium stature.

- Gracile, Mediterranean group, characterized by medium long skull, wide forehead, narrow total and upper face, a gracile and fine relief and low to medium stature.

- Cromagnoid-B type, in which a medium long and brachycranial skull, wide forehead, wide to medium wide face and upper face characters predominate.

The total picture of the cemeteries reflects Europoid characteristics. Comparison of the male and female findings from SE Transdanubia with series of the same age showed the greatest similarities with the Bogád and the Sarmatian Hódmezővásárhely-Fehértó males and the Csákvár females.

All in all, we may state that the early Roman population of the Central Danubian Basin was quite homogenous, at least the data published to date points towards this conclusion. Taxonomical characteristics indicated the presence of a long-headed component and the proportion of Mediterraneans was dominant within this group. Roman Period populations sporadically contained some Nordoid, Cromagnoid and Brachycran individuals.

When comparing the available data of Transdanubia's Roman and Avar Period populations we may establish how far and in what ratio did the romanized Pannon population survive among the peoples inhabiting the Avar Empire.

Fóthi (1998) drew into comparison Avar and Roman Period samples. She established by systematic cluster analysis that the pannonicized autochthon inhabitants of Transdanubia made up a significant fraction within the ethnical structure of the Avar Empire.

### **Barbaricum - The Sarmatians**

The real blank spot in the history of the Central Danubian Basin has been the anthropological composition of the Sarmatian Period population. The bone material of Sarmatian cemeteries was the worst preserved from all, though the true reasons of this sad state of affairs is still not known. In fact, no anthropological sample of significant size is known from this period. These circumstances restricted our possibilities, so we could draw conclusions only from the data of the two larger written up Sarmatian cemeteries, and therefore any conclusions had to stay on the thoroughly cautious side of thinking.

Bartucz (1961) published the analysis of the Sarmatian-Jazyg burial sites Hódmezővásárhely-Fehértópart and Szentés-Kistőke. He found a common feature in the two series, what he called their bipolar nature: both were made up of two different populations. One of these was dolichocran, hypsicran, eurymetop, leptoprosop, meso-hypsicran, leptomesorrhin and had medium stature (Hódmezővásárhely-

Fehértópart: 45%, Szentés-Kistőke: 80%). The author did not treat the problem of different origin as there was no comparative material available.

Wenger (1968) noticed the similarity between the dolichocran elements of the late Roman Transdanubian population and the Sarmatian inhabitants of the southern region of the Hungarian Plain.

Fóthi (1998) saw a very close similarity between the Sarmatians of Szentés-Kistőke and the Avar Period population of Szentés-Kaján. She considered the brachycran section within the Avar Period population of the Hungarian Plain of partially Sarmatian origin.

### **Hun - Germanic Period**

Two Germanic peoples appeared in considerable numbers in the Central Danubian Basin: the Langobards and the Gepids.

The Langobards arrived from their Elbe-region homeland into the Central Danubian Basin in 526 (other sources set this date for 547). They settled in the former Pannonia (Bóna 1974). For a long time only three of their cemeteries were analysed and published: Várpalota (Malán 1952), Hegykő (Tóth 1964) and Szentendre (Kiszely 1966). The image of the Langobard deriving from these three series looked like this: their majority were dolichocran, with large absolute measurements, they had high and narrow faces with marked relieves. They were tall with a good physique. Nordic was the most frequently found type among them, but Mediterranean and Cromagnoid elements were also present in their cemeteries.

Kiszely (1979) produced a monography on the Langobards. He gave a comprehensive picture of the historical, archeological and anthropological literature and the trends of research on the Langobards. The main virtue of his monography was that it provided a lot of new anthropological data from a good number of sites in Hungary and abroad. Kiszely also published a large and far reaching bibliography and a mass of photographs on characteristic types. The most characteristic anthropological types of the various Langobard populations were described. He based this description on the analysis of the skeletal material of cemeteries uncovered in Germany, Austria, the Czech Republic, Hungary, Slovenia and Italy. Kiszely went on to execute comparative studies by Penrose-analysis. He added Anglo-Saxon, Saxon, Thüringian, Frankish, Burgundian, Alamannic, Bavarian and Western Gothic samples to the Langobard-Lombard material.

The Gepids from the Eastern Germanic group of peoples came from the Vistula region and reached the Upper Tisza in 269. As the Sarmatians were pushed out they gradually moved their living preserves southwards. Gepidia spread to both sides of the Tisza and to the area of the Kőrös Rivers as well, when the Huns arrived. The Gepid first responded to the Hun invasion with a move farther to the South, then after some hard fighting they yielded to the conqueror. Gepid

bands made up the best infantry of the Hun Empire's army, and they fought in Attila's campaigns as well. When Attila died the Gepids under king Ardarik took over the primary tribal territories of the Huns, Dacia and later the former Roman province Pannonia Secunda. Gepid rule was broken by an Avar-Longobard alliance in 567 (Bóna 1974).

The case is that while we possess a wealth of historical knowledge on the Gepids, their anthropological analysis produced surprisingly few results so far. Only the results of the study of two cemeteries were published to the present day.

Gáspár (1931) presented the skulls found at the site Hódmezővásárhely-Gorzsa in the first publication. He declared 5<sup>th</sup>-6<sup>th</sup> century Gepids Nordoid in the majority, but a minority of Ural-Altai individuals was also uncovered in this cemetery, that he classified to belong to some Mongoloid people, perhaps to the Huns. He also identified a mixed type, that came into being from the intermingling of a Nordoid and a Mongoloid people. This mixed type was very similar to the Eastern-Baltic one. He also described an artificially deformed Mongoloid female skull.

Bartucz (1936) published a paper with the title "The Gepid Craniae from the Cemetery of Kiszombor". This was a most valuable article from two aspects. On one hand this was – and still is – the only detailed description of a numerous Gepid population, on the other it was this article in which Bartucz provided the details of artificial skull deformation, a wide-spread practice among the Gepids. He drew his general conclusions on the population from the extremely thorough examination of 54 well preserved skulls. Bartucz stated that the Gepids of Kiszombor formed a special race conglomerate that was made up of elements of the Nordic, Mediterranean, East-European, Turanoid, Mongolid and Palaeo-Asiatic races. The tall stature, long-skulled, high and narrow faced Nordic type was the dominant component. Bartucz considered individuals with these characteristics the true Gepids. He suspected the Mongolid and Mongoloid elements of the population of Kiszombor as Hun. According to his opinion the Gepids inhabiting the territory of later day Hungary were not only in close contact with the Huns on the political and trade level, but these peoples lived in a state of strong racial amalgamation, too.

Skull deformation was a widespread custom among the Gepids (21 of the 54 skulls examined were deformed), that they took over from the Huns living with them. It was present in all six groups identified within this population, but its ratio was the highest among the Mongoloids. Bartucz gave a detailed, analytic description of the technique of deformation. All deformed skulls in this cemetery came under the so called occipito-frontal type of skull deformation. Deformation was achieved by applying two bandages. The wider bandage ran down from the forehead via the temple to the occiput and it surrounded the head ringwise. The narrower bandage ran

from the dome of the cranium down and under the chin. The result of this process depended on the original type of race and on the tightness of the bandages. Bartucz declared the anthropological material of Gepid cemeteries essentially important for two reasons: it was an important factor in the study of the Hun-Avar circle of problems, and it could help to determine the racial composition of Arpadian Age Hungarians. It is most unfortunate that neither Bartucz, nor later authors did go along this most promising path of scientific research.

Skull deformation became a topic studied by a good number of scholars beyond and after Bartucz. We did not undertake to present case-studies, we considered only papers that set out to execute some sort of comparative analysis.

Lipták (1983) described some more recently discovered cases, then went on to forward some ideas on the ethnic aspect of the custom of skull deformation. Lipták accepted Alheim's thesis – that this peculiar custom was spread by the Alan in Europe – and opposed to Gáspár and Bartucz he established no Hun correlation on this basis. Lipták thought that artificial deformation had nothing more to do with the Huns but the simple fact that the Alan reached the Central Danubian Basin with the Huns. At the same time he did not give plausible explanation for the widespread occurrence of this very same custom in the Eastern Hun Empire in the first centuries after Christ, first of all among Mongolid and Europo-Mongoloid population groups. There was an other problematic fact, namely the Gepid cemeteries of the Hungarian Plain contained Mongolid deformed skulls as well as Nordic ones.

Pap (1983, 1984, 1985) described 21 circularly deformed skulls from the 5<sup>th</sup> century location of Keszthely-Fenékpuszta. This site was classified Gothic-Alan on the basis of the grave-goods uncovered there. The cemetery contained 10 non-deformed skulls as well. By the comparison of the mandibulae of deformed and non-deformed skulls Pap proved that deformation was carried out with two bandages. The narrower bandage started on the dome of the skull and ended under the chin, so by this positioning mandibula was also deformed, it got a lower shape. According to Pap's analysis the population buried in Keszthely-Fenékpuszta resembled the East-European Sarmatian population the most. She firmly stated that the phenomenon of skull deformation was not an ethnic marker.

Kiszely (1978) mentioned in his monography a large number of published and unpublished cases not just from Hungary but also from all over Europe and from the former Soviet Union. The wide database and the presentation of the related literature gave value to Kiszely's work. This author did not venture to produce some sort of summary, or to draw historical conclusions.

It is a fact of history that the collapse of the Western Roman Empire was brought about by the movements of

peoples initiated by the Huns. The greatest trouble for us is the state of the archeology and anthropology of the Hun period. We have very few Hun finds, archeological and anthropological as well. The Huns spent only a brief period in the Central Danubian Basin, therefore no Hun cemeteries of any size worth mentioning were uncovered. Only the skeletal material of a limited number of Hun graves became known (Bottyán 1967). Under these circumstances anthropology can provide no useful contribution to the study of the Central Danubian Basin's history in the Hun Period.

### Avar Period

Detailed anthropological examination of Avar Period skeletal material is very important when analysing the emergence of the peoples of the Central Danubian Basin, among them the ethnogenesis of the Hungarians too. Though the Franks annihilated the Avar nobility of Transdanubia, and they might have decimated the common population as well, while the Avars of the Danube-Tisza region were thinned out by the Bulgars, the majority of the commons certainly survived the storms of history and their descendants probably lived to see the Hungarian Conquest. This "decapitated" people lost its leaders when it lost its nobility, it was cut off from its old trade links and its craftsmanship also declined, and anyway, the Avar Empire was made up of so many varied tribes that it is hard to define it as one unified Avar people. For these reasons they could easily and rapidly be absorbed by the Hungarians (Lipták 1983).

Bartucz (1934) was the first scholar to go one step further beyond the analysis of individual cemeteries and to attempt the formation of a general anthropological image of the Avars. He declared that the Avars were characterized by a heavily mixed racial composition. When studying the available series Bartucz found that the Avar had tribes with typical stature, from short to tall. He established 3 groups among the cemeteries according to their skeletal material.

The first group was made up of those series which contained a majority of Mongoloid elements: Mosonszentjános, Nemesvölgy, Csorna, Gátér, Cebe, Ondód. Tungid, Palaeomongoloid and Sibirid elements featured in these series. The series of the second group could be characterized by the intermingling of characteristics. The Turanid type was the most frequent one at these burial sites. Üllő, Kecel, Bakonykoppány, Kiskőrös-Város alatt, Öskü and Győr came under this heading. The third group of Bartucz was composed from the series that bore a dominance of the Europid element. Its members were: Jutas, Keszthely, Szob, Tiszaderzs. Nordic and Mediterranean elements featured the most frequently within the individual cemeteries.

Bartucz meant to find the ancient core of the Avars in Asiatic, mainly in Northeastern-Asiatic or in Siberian Mongol elements. These got in contact with Ugor, then with Turanid, and later with Caucasian and Germanic elements.

In his view the Mongoloid elements detectable in the Hungarians of our times originated with the Avars.

Lipták (1955) went into the details of Avar Period's anthropology in his candidate degree thesis. He stated his opinion that archeological chronology system was simply wrong. According to Lipták, too much cemeteries were dated for the 8<sup>th</sup> century and too few for the 7<sup>th</sup> and the 9<sup>th</sup> centuries. He pointed out as an obvious contradiction the fact, that 7<sup>th</sup> century, early Avar anthropological material was almost exclusively Europid, while grave-goods indicated Middle- and Central Asian parallels. On the other hand there were cemeteries dated for the 8<sup>th</sup> century that contained Mongoloid elements among others. The attire and armament introduced by the Avars was rapidly adapted by other ethnic groups, it became the general fashion of the region in the 7<sup>th</sup> century. Therefore the separation of autochton elements was (and is) simply impossible by archeological means. That is why Lipták strongly emphasized that to talk of Avar Period population makes much more sense than to stick with the phrases of "the Avars" and of "Avar population".

Lipták outlined his view that the gracile Mediterranean type was autochton, while the brachycran Europid types were partly typical of the local inhabitants, partly they migrated to the Central Danubian Basin with the Avars. He found the origin of Cromagnoids, Nordoids and large stature Mediterraneans uncertain, and he indicated migration as the probable reason of their emergence. Lipták mentioned the Asiatic origin of Mongoloid and Mongoloid population elements, but he did not go into the details of any closer relationship or parallel.

Lipták analysed the Avar Period population of the Danube-Tisza midland region and stated that 80% of them was of Europid character. He separated narrow-faced dolichomorph types (Nordoid, Mediterranean) in 38%, broad-faced Cromagnoid types (A and B) in 22.6%, and brachycran forms (Pamirian, Dinarian, Near Eastern and short-headed individuals of undefined origin) in 17.1%.

The extraordinary significance of Lipták's thesis stemmed from the fact that it laid the foundation of the taxonomical system hall-marked with the author's name by the extremely detailed description of the occurring anthropological types. He outlined exhaustive portraits of the representatives of the Europid race.

He found the tall stature, dolichomorph, narrow-faced variation (its frequency was 22%) non-homogenous. Lipták put the northern (Nordic) and tall Mediterraneans under this heading. He separated two regional varieties, a western (Atlanto-) Mediterranean one and an eastern or Indo-Iranian one. He traced back this combination of characters to the Upper-Palaeolithic Brünn-Predmost type. It was stated that this type had less significance in the Avar Period and at the time of Hungarian Conquest than during the Arpadian Age.

Lipták considered the gracile Mediterranean (Ibero-



Insular) type the most significant component of the Avar Period population. The Cromagnoid types that were classified the descendants of the Upper-Palaeolithic Cromagnon race were rated important components of the Avar Period population by Lipták. He added that these types kept their significance in the Arpadian Age as well. The author put Pamirian (Pamiro-Ferganian), Dinarian, Alpine and Near Eastern (Armenoid) types under the heading of brachycran elements. Their presence was insignificant in the Avar Period. Lipták paid the most attention to the Turanid (South-Siberian) and to the Ural types from the Europo-Mongoloids. None of the two had much significance in the Avar Period, but they were dominant among the conquering Hungarians. Lipták identified and described in detail three kinds among the Mongoloids of the Avar Period: the Northern-Chinese (Chinid), the Central Asian Mongol and the palaeo-Siberian types. He considered the two later types the key components of Avar Period Mongoloids.

Lipták reached the conclusion that the majority of Avar Period population components were present in the population of the Arpadian Age as well, but their proportions were most expressedly different. He found the presence of the Northern and Mediterranean types continuous, and he pointed out that the characteristic types of the conquering Hungarians were evidently there in the population of the Arpadian Age, too. However, the dominant element of the Arpadian Age population, a tall stature, narrow-faced, dolichomorph combination of features, could not be deduced from any of the earlier populations. This contradiction came straight from the circumstance that Lipták drew his conclusions exclusively from the analysis of material originating in the region between the Danube and the Tisza. He left the possibilities of migration within the Central Danubian Basin out of his considerations.

As a result of his taxonomical analysis (Lipták 1959) he concluded that the ratio of Mongolid and Mongoloid types alternated between 30-50% among Avar Period skulls. Lipták's estimation coincided with the stated views of Bartucz and Nemeskéri.

Lipták went on refining his taxonomical system and he established five types of Avar Period Mongoloids in the Carpathian Basin. These were: Chinid (Far Eastern Mongoloid), Baykal (Palaeosiberian), Tungid (Broad-faced Mongoloid), Jenysej (Americanoid) and Central Asiatic (Northern Mongoloid) types.

Lipták voted for the dual origin theory when studying the ethnogenesis of the Avars. He called true-born (pure blooded) Avar (Varchonite) those small series which were characterized by Mongolid and Mongoloid features. According to Lipták's opinion the progenitors of the Varchonite originated from beyond Lake Baykal, and they migrated into Southern-Central Asia only sometime later. From there they were forced out by the Turkish peoples, and so they escaped into

the Central Danubian Basin. There were series with a comparatively high ratio of the Iranian type (Kiskőrös-Város alatt, Alattyán). Lipták named them ones with Hephtalite origin because he considered the Indo-Iranian Mediterranean type a significant ethnical component of the Hephtalites. This type could be traced back as far as Central Asia (Lipták 1983).

Acsády and Nemeskéri (1970) compiled one of the most frequently quoted anthropological textbooks under the title "History of human life span and mortality". The demographical data of Great Migration Period populations published in this volume still serve as models for present researchers. The age determination process produced by the two authors became outdated and it is only sporadically used, but it was the method for any more detailed age scoring, not only in Hungary but abroad, too. The original method was based on the degenerative lesions of the medullar cavity cones of humerus and femur, and of the surface of facies symphysialis, plus on the ossification of cranial sutures.

Certainly, there were Slavs among the peoples inhabiting the Central Danubian Basin during Avar times. There are several obstacles that block the way of an anthropological approach to this problem. The most significant has been the lack of skeletal finds from that period. In the 6<sup>th</sup>-8<sup>th</sup> centuries Slavic peoples still cremated their dead. They might have lived in regions neighbouring those inhabited by the Avars, but they left no burial sites with skeletal material and this made them once and for all "invisible" for anthropological research. Our only remaining choice is to proceed with indirect methods. Anthropology produced few results in the analysis of the Slav lineage of Hungarian ethnogenesis yet (Bottyán 1975).

Éry (1970) analysed the metric averages of 26 series by the Penrose-distance method. She took Avar Period and combined, Hungarian Conquest and Arpadian Period samples under examination. She concluded that males had less spread within the samples than females did. The Avar Period sample differed more from the Arpadian Age one than it did from the Hungarian Conquest Period sample. Close proximities were established between Avar and Arpadian Period series in some cases, but even so, she put much more emphasis on the differences of the two periods' populations.

Éry (1983) examined 120, mostly 6<sup>th</sup>-12<sup>th</sup> centuries male series by cluster analysis in her other comprehensive work. Penrose-distance as well as the "dual sequential" process were utilized. The Avar Period of the Central Danubian Basin was represented by 22 samples. Éry recognized the regional differences of Avar Period series. She formed the opinion that there were separate Danube-Tisza midland, Eastern Transdanubian, Western-Transdanubian and Northern Transdanubian groups, and these bore marked anthropological differences. She saw correlations between the Central Danubian Basin and previous Eastern abodes of Avar population

groups. The author outlined that those populations which had their analogies in the steppe region to the east of the River Dnepr mostly tended to settle in the Great Hungarian Plain, while communities originating in the East-European and broad-leaved forest zones, or in the territories to the west of the Dnepr moved – with a single exception – to Transdanubia and to the northwestern region of the Carpathian Basin. Éry presumed that these peoples attempted to locate abode territories with living conditions resembling the previous ones, so that they could keep up their ways of lives and production.

Éry (1994) published a brief summary of the conclusions of her earlier research activities. She dedicated this paper first of all to anthropological scene of the Hungarian Conquest Period, but she naturally could not leave the previous inhabitants of the Carpathian Basin out of consideration. The author mentioned that narrow, long-skulled and broad, short-skulled individuals made up about 50-50% of the Avar Period's population. The first type seemed to live mostly in the western part of Transdanubia and in the territory of present Southern-Slovakia, the second one mostly in the eastern part of Transdanubia and between the Danube and Tisza Rivers. When discussing the long term survival of Avar Period populations Éry declared, that they evidently lived up to the Hungarian Conquest and then they were absorbed into the people of the Arpadian Age in Transdanubia, in the Southern-Slovakia of our times and beyond the Tisza River. However, there were no traces of the survival of the characteristically low brain-cased, Europo-Mongoloid inhabitants of the Danube-Tisza midland in their original territories. She supported the hypothesis that they were deported and resettled after the collapse of the Avar Empire, because the Frank and the Bulgarian Empires wanted to create a neutral zone between their respective spheres of interest.

Éry (1998) recently published a vacuum-filling work based on an enormous collection of data, with postcranial measurements and estimated statures.

The measurements of four long bones (humerus, radius, femur and tibia) representing both the right and left sides of the body were collected on the skeletons of 4,305 men and 3,735 women from 330 burial sites of the Carpathian Basin. The data represented the population from the Neolithic (c.a. 4000 BC) to the end of the Middle Ages (c.a. AD 1700) within the area of the Central Danubian Basin. The stature of individuals were calculated by Sjøvold's method. In order to save space and facilitate future use, the individual length measurements and stature data are attached to that volume in the form of a diskette. Her main results are as follows:

The right humerus and radius, as well as the left femur and tibia, are significantly longer than their counterparts in the opposite limb. Differences between women and men are most pronounced in radius length, and least apparent in the length of tibia. Sex-related differences between bones in the

same limb are always greater in the left side. Stature estimates fell within the tall category in the majority of chronological/ethnic units. The relative overrepresentation of women in the very tall categories may be attributed to bias caused by the method applied. During the periods within the 6<sup>th</sup> to 15<sup>th</sup> century interval, the mean statures of populations living west of the Danube were usually the tallest, while the smallest estimates were obtained for the Danube-Tisza Interfluvium. Moreover, within the Great Hungarian Plain, the mean stature of populations in this latter region was smaller than east of the Tisza River in all studied periods. The arrival of new peoples during the 5<sup>th</sup> to 6<sup>th</sup>, 9<sup>th</sup> and 16<sup>th</sup> to 17<sup>th</sup> centuries are indicated by their taller statures, while populations of smaller statures occurring in the 3<sup>rd</sup> to 4<sup>th</sup> and 11<sup>th</sup> to 12<sup>th</sup> century suggest the possible continuity of a basic population with prehistoric roots in the Central Danubian Basin. With the advancement of time, the changes of stature show a positive secular trend.

Tóth examined the variable values of taxonomical characteristics when classifying mixed populations (Tóth 1970). He carried out detailed analysis of the facial profile on Avar Period anthropological material from 55 excavated sites. He established a much lower proportion of elements coming under the Mongoloid greater race than Bartucz and Lipták did before. Tóth took 1,141 skulls under examination and he found a Mongoloid preponderance only on 19 of them (1.66%). He set the ratio of pure Mongoloid and Mongoloid elements at 7.7% .

Tóth arrived at similar conclusions when he applied the faciocerebral index and facial flatness index methods on the anthropological material of 33 Avar sites (Tóth 1973, 1974). His analysis led him to declare that Europoid features dominated within the general mass of inhabitants of the Avar Empire. Tóth found only three expressly Mongoloid series, those of Kiskőrös-Vágóhíd, Mosonszentjános and Budapest-Népstadion. By scoring the degree of facial flatness Tóth established a rather diluted form of presence of Mongoloid elements in the composition of the series of Mosonszentjános. He found this series as an entity similar not to Baykal-type – as described by Bartucz earlier – but to the Late Iron Age material of the Altai-Sayan mountain range. At the same time he declared that the Early Avar Period series excavated at the site Kiskőrös-Vágóhídi dűlő bore more marked Mongoloid characteristics than the Buriat and Tuvaian of the Trans-Baykal region. He pointed out that some Avar Period series had their morphological analogies in the North-Caspian zone (Tóth 1974).

Lengyel (1975) adapted a palaeoserological method worked out for recent skeletal material for the examination of fossil finds from historical ages. He executed ABO blood-group analysis on the samples of 5,000 individuals (from Neolithic times to the Middle Ages). Lengyel calculated blood-group frequency values and gene frequencies for all

populations he analysed. On the basis of these data he attempted to draw historical conclusions by comparing the values belonging to various historical periods. His study of Roman Period and Langobard material was exhaustive, but the Avar Period featured with very few representatives in Lengyel's work. The most important social strata of the Avars, the Mongolids were completely missing from this scientific process. He provided trustworthy evidences for the survival of romanized population groups on more than one occasion. Marcsik (1983) carried out the palaeopathological examination of the Avar Period inhabitants of the Danube-Tisza region. She scored the various forms and frequency of anomalous dental enamel formations, Stafne's idiopathic mandibular cavity, malformations, traumatic lesions, bone inflammations, tuberculosis, certain haematological disorders and articular diseases on 1,960 skeletal finds from 42 archeological sites.

Farkas and Hunya (1984) determined the weighted mean and standard deviation of 14 measurements from 28 Avar Period series dug up in Hungary. Their comparison with the Howells mean sigmas manifested significant differences in 13 male and 8 female characters. The authors applied the Penrose-distance and closest and farthest neighbour methods for 28 series, mainly from the Danube-Tisza interfluvial region. They found a quite close similarity among the Avar Period series of this territories, with the exception of Kunszállás, Rákóczi-falva and the Bácska cemeteries in general.

Fóthi (1998) carried out examinations by systematic cluster analysis. She placed the Avar Period population of the Central Danubian Basin in the focus of her analysis. She took 224 series under consideration. Anything resembling a permanent Mongolid population appeared with the arrival of the Avar in the Central Danubian Basin, and the author classified this group as the "true" Avar. This people probably evolved from two tribes, as the differing similarity circles of its two main components, the Sajanian and Baykal elements, indicated it. She stated that the survival of pre-Avar Period population should be taken into account first of all in Transdanubia. The majority of Avar Period Transdanubian individuals were long-skulled and tall in stature. This group has a common feature: they all had analogies in the Pannon autochthon peoples and Germanic Periods of the Central Danubian Basin, and among the Slavic peoples. The Avar Period groups who populated the regions to the east of the Danube were mostly new elements in the history of the Central Danubian Basin. The 8<sup>th</sup> century inhabitants of the Danube-Tisza interfluvial were one of the most markedly characteristic groups of the whole Avar Period. They simply had no analogy whatsoever in the Central Danubian Basin, but also no parallel in the Eurasian steppe populations. Fóthi proposed the view that most probably this characteristic type came into being as a result of local evolution. The Danube-Tisza region already had a Europid population and they

intermingled with a low-skulled, mongolid (possibly Tungid) group. The process took something like 200 years. The 6<sup>th</sup>-8<sup>th</sup> centuries populations were extremely heterogenous. Fóthi's classification did not concur with the traditional grouping based on the archeological heritage. It was impossible to state that the cranial typology of the period's people fell in line with the triage of Early, Middle and Late Avar Period. What is more, there were cemeteries coming under the same archeological age, but it did not keep them from presenting enormous anthropological differences when the skeletal finds were analysed. In brief, the Avar Period population seemed to be divided not by its material culture, but by the two very different anthropological types of the 6<sup>th</sup>-8<sup>th</sup> centuries. This system also did not coincide with the metallurgy-based traditional one.

### **9<sup>th</sup> Century**

At the end a few words about the special problems of the 9<sup>th</sup> century. For decades, it was a deep-rooted opinion in the archeological literature that the 9<sup>th</sup> century was "simply missing" from the findings material of the Central Danubian Basin. This view seemed to end in the 1980s, first of all in the research of the Lower-Zala valley sites and in that of Bulgarian finds from the southern part of the Hungarian Plain.

Éry (1992) was among those working on the first mentioned project. She analysed 3 Lower-Zala valley cemeteries dated for the 9<sup>th</sup> century and concluded that a dolichocran, large stature new population element must be taken into consideration here, as the population of the cemetery Garabonc I presented close similarities with western Slavic and western Germanic samples.

### **Personal comments**

In this paper we set out to recount, and we had to exclude the confrontation of opinions as well as our own critical remarks for lack of space. However, at the end we sketch up some subjective ideas, that seem to us well worth considering in the close future research of the Migration Period. Various periods have been studied with varied intensities in palaeoanthropology. The Avar, Hungarian Conquest and Arpadian Periods were deeply and well researched, but there were and still are enormous gaps in the study of the pre-Avar centuries. It may sound paradox, but the main obstacle blocking the development of really profound knowledge on the history of the Avar Period has been our scanty knowledge of the anthropological images of the Sarmatians and Gepids. As long as this link remains missing it is impossible to follow and to restore the chain along which the survival of pre-Avar populations could be proved. To a lesser extent the same is true for the Roman Period population of the Central Danubian Basin.

Each period has been studied in isolation, and it pushes

the results towards as a strange jig-saw character. Any sort of continuity is very hard to identify in this environment. We often seem to find new population elements, though their lineage could be traced back to a known group in a known period. We feel that we should connect the research results of the various historical periods (from Neolithic times to the Late Middle Ages) because the continuity of a good number of anthropological types could be established, of course with the modifications brought along by time. At the same time any new elements would be easier to recognise, and so we could date the appearance of new populations much more accurately.

The Great Migration Period populations were very heterogenous almost without exception. They were formed from a lot of sub-populations of varied origin, and their internal proportions were often accidental. That is why we can expect only extremely rough estimations when utilizing the metric averages of a population. We may arrive at much more refined results if we analysed each and every population on the basis of its sub-populations.

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