

MILAN THURZO

A SURVEY OF ANTHROPOLOGICAL RESEARCHES OF THE BRONZE AGE REALIZED IN SLOVAKIA

This attempt to survey the anthropological researches of the Bronze Age in Slovakia will probably not comprise all the hitherto studies dealing with the period — missing will be mainly the newer, hitherto not published data. The not very numerous results of the hitherto studied materials are listed chronologically according to the archaeological dating.

From the period of transition from the Eneolithic period to the Early Bronze Age comes the inhumation burial site in *Ivánka pri Dunaji* anthropologically processed by Strouhal (1967). He could use for his analysis 16 burials — eleven graves contained remains of skulls together with the post-cranial skeleton, three graves contained the post-cranial skeletons only, and the last two contained only skulls. Altogether 23 individuals — five of them children below 14 years — had been buried in these graves. Seven of the adults were identified as males and six as females. The author made a detailed morphoscopic and metric analysis of the skulls and post-cranial skeletons of both the adults and children. He studied 42 dimensions and 33 indices on the skulls, and 29 dimensions and 15 indices on the long bones. The body height of the adults and children was established through the use of six methods.

The skulls of the population from *Ivánka* can be characterized as dolichocranic to mesocranic, orthocranic to hypsicranic, acrocranic, eurymetopic. The orbits are mesoconch to chamaeconch. The nose is mesorrhine to chamaerrhine and the maxilla is brachyuranic. The body height of the men is above-the-average to tall and the women are of medium body height.

In the view of the author it is a homogenous, relatively rather endogamic population with a high

degree of metopism' (up to 38.5 per cent), living under peaceful conditions, as documented by the absence of battle woundings.

The 10 graves from *Bešeňov near Šurany* archaeologically and anthropologically evaluated by Szóke and Nemeskéri (1954) belong to the Únětice culture. The graves contained the remains of two men, three women and two children — it was impossible to identify the sex of the rest of them. The skeletons lay in contracted position in unusually deep graves, mostly robbed and the skeletons were scattered. The authors evaluated the finds both metrically and typologically through the method of Martin—Saller and Lipták.

The skull of the only measurable man is dolichocranic, orthocranic, acrocranic and eurymetopic. His face is mesene, the orbits chamaeconch and the nose hyperchamaerrhine. The skulls of the three women are mesocranic to dolichocranic, chamaecranic to orthocranic, tapeinocranic to metriocranic. The values of the transversal frontoparietal and orbital indices vary from stenometopic to eurymetopic, respectively from chamaeconch to hypsiconch. The stature of the only woman with these characters is tall, the author however, does not indicate the computing method he used. The only cranial anomaly observed in this case was the presence of the os Incae bipartitum.

To the Nitra group belongs the inhumation burial site in *Matúškovo*. The site is on a sand dune left of the road from Galanta to Matúškovo and comprises 59 graves. Most graves have been robbed and the bones scattered, so that the skeletal material is incomplete and in bad state of preservation. The anthropological analysis of the skeletal material was realized by Kollárová, forming part of her dissertation work (1970), the results of

this analysis, however, have not been published. According to the demographic analysis there were 16 men, 16 women and 22 children among the buried. It was impossible to identify the sex of five individuals. The authoress realized the metric evaluation of the remains of 15 men and 11 women according to the Martin—Saller method. The skeletons of the children have not been processed metrically. In total 50 dimensions and 19 indices were studied in the skulls, and 25 dimensions and 10 indices were studied in the post-cranial skeleton (long bones). Due to a high degree of deterioration only seven male and five female skulls could have been evaluated metrically, so that the mean values of this material are statistically not very reliable.

The male skulls are characterized by dolichocrany and eurymetopy, they are orthocranic to hypsicranic, metriocranic to acrocranic, mesoconch and mesorrhine. The rather damaged female skulls are dolichocranic and eurymetopic. The body height calculated through Manouvrier's method, is below the medium in men and above-the-medium in women. The authoress followed also the occurrence of some of the varieties and anomalies. She found rests of the frontal suture above the nasion in three males and two females. As far as suture bones are concerned, besides in the lambdoid suture she found in one case also os Incae, and in other os interparietale and incomplete torus palatinus appeared in one male skull. In the small number of studied individuals she found very few pathological changes. In one instance it is an oblique fracture of the diaphysis of the left clavicle of an adult woman, in other it is a well healed post-traumatic impression in the left half of the squama occipitalis.

One of the largest anthropologically studied burial sites of the Nitra group is the partially excavated burial site of the Branč II locality. Out of the total number of 286 graves 237 belonged to the Nitra group and 49 graves to the Ťňetice-Maďarovce group. The anthropological analysis of the 254 skeletons from 237 graves of the Nitra group was realized by Hanulík (1970). The author made a detailed analysis of 100 male skeletons, i.e. approximately 40 per cent of all the burials, and of 56 female skeletons (22 per cent), and of 96 skeletons of indefinable sex. The value of the masculinity index is 1796 and 36 per cent of the burials were children. Besides evaluating the descriptive and metric characters the author tested also the intersexual differences in the metric characteristics, and in the laterality of the long bones. As to the relations of the Branč population to other populations of the period follows that closest to the metric data of the studied group are the data on the population from Ivánka pri Dunaji and most distant are the data on the population from the burial site in Matúškovo.

As far as anomalies are concerned approximately in four per cent of men and five per cent of women appeared the sutura metopica persistens, alongside with the occurrence of the cribra orbitalia, vertebral sacralization, lumbalization and spondylosis. Among the pathological changes we shall men-

tion arthrotic and spondylotic changes, fractures of the diaphyses of the long bones, hydrocephaly, osteomas and multiple cuts on the skulls.

Other studied Nitra group burial site is *Abrahám* whose anthropological analysis was realized by Michnáčová, in her dissertation work (1967). The results of the analysis have not been published. During the systematic research of the burial site on the Komárov vršok tell near Abrahám 181 graves were unearthed. Part of the graves were opened already before World War I, but the finds have not been preserved. Out of the 120 graves whose material the authoress had at her disposal only the remains from 53 could have been evaluated metrically. Within the framework of the craniometry she measured 38 dimensions and 22 indices, while in the post-cranial skeleton altogether 32 dimensions and indices were studied. 30 of the processed individuals were males, 17 females and 15 children. Altogether 23 male and 11 female skulls were evaluated and the largest number of processed cases in a single character was 20. As to the skull characteristics she dealt in detail with the cranial capacity and she tested the difference between the results of direct measuring through multiple calculation methods. She found that closest to the measured values are the values obtained through the calculation method of Lee and Pearson. She measured altogether 28 dimensions and indices on the post-cranial skeletons.

The male skulls from Abrahám are mesocranic with a tendency towards dolichocrany (two skulls are ultradolichocranic), they are orthocranic to hypsicranic, metriocranic to acrocranic, stenometopic to metriometopic. The orbits are mesoconch, the nose is chamaerhine and as to their capacity the skulls rank among the euencephalic ones. Out of the six female skulls four are dolichocranic and two mesocranic. All are exclusively eurymetopic with mesoconch orbits. According to Manouvrier's procedure the males are higher than the average, with a mean body height of 168 cm and the females are high, with a mean body height of 161 cm.

As to anatomic varieties she found sutura metopica persistens in one case and os interparietale bipartitum in two cases. It is a pity that she does not say in how many skulls has she studied the respective skull region. As far as pathological changes are concerned she found a cut wound on the left tuber frontale and in a senile female she found a high degree of spondylosis. In the discussion she compared the data obtained from these finds with the values of other Early Bronze Age burial sites, but she did not find any close relation between them. The bones of the post-cranial skeleton of several individuals found in grave No. 9 were scorched — probably in connection with anthropophagy.

One of the recently studied Nitra group burial sites is the locality in *Výčapy-Opatovce*. There have been several partial publications on it (Strohal 1964a, 1964b, 1973), but a complex analysis is still missing.

The *Bajč-Ragoňa* burial site belongs to the

Hurbanovo group of the Early Bronze Age. The results of its analysis were published by Hanáková, Stloukal and Točík (1973). The partially excavated site contained 60 graves of the Hurbanovo group. The above authors made a detailed demographic analysis of the buried population. They found the skeletal remains of 66 persons in 55 graves. 45 of them were adults (67 per cent) and 21 skeletons belonged to people below 20 years (approximately 33 per cent). 19 skeletal remains belonged to males and 15 to females, the masculinity index was 1268. Besides the 48 dimensions and 11 indices according to Martin and Saller they examined also some face flatness indices according to Woo and Morant (1932).

On the basis of the mean values the authors characterize the studied population as mesocranic, hypsicranic, acrocranic and eurymetopic; with mesoconch orbits and mesorrhine nose, with a slight tendency towards chamaerrhiny. The cranial capacity of the men is euencephalic, and of the women aristencephalic on the average. The body height of both the women and men is medium — according to Manouvrier's tables.

The health condition of the Bajč population was followed by Dr. Vyhnanek, CSc. As to congenital anomalies he found persistent metopic suture in seven cases and os epiptericum in two cases. They found also lumbalisation of the first sacral vertebra, as well as the appearance of trochanter tertius and foramen arcuale atlantis. Relatively frequent were the compressive fractures of vertebrae and in two cases there were also post-traumatically deformations of the cranium. They observed also a very conspicuous case of gonarthrosis and several cases of spondylotic changes. They studied also the intensity and frequency of dental caries. They found that the females have their teeth in worse condition — it is usual and logically expected.

On studying the anthropological finds from the Early Bronze Age in the territory of Slovakia we must not forget the sporadically scattered human bones mixed with animal bones in the settlement horizons. These finds are characterized by the fact that they are scattered, fragmentary, with traces of chopping and cutting, sometimes even cooking — they are unambiguous proofs of anthropophagy. A synthesis of all these finds in the Bronze Age in Slovakia was prepared by Ambros (1971), evaluating the skeletal remains from the Maďarovce group in *Nitrianský Hrádok* and in *Malé Kosihy* and from the Otomani settlement in *Barca near Košice*. From *Nitrianský Hrádok* come 57 various components of human skeletons, namely of diaphyses with the epiphyseal portions removed by force; in *Malé Kosihy* the diaphysis of the left humerus was found, probably with traces of dog bittings. From *Barca* we know further 12 scorched fragments of human bones.

On studying the travertine hill in Gánovce in 1956 a 9 m deep well was found. The archaeological finds and remains of animal bones found in it form a closed archaeological assemblage. The well contained also fragments of human bones (Am-

bros 1959). The finds in the well come from the Early Bronze Age.

From the Early Bronze Age comes also the biritual burial site in *Majcichov*, belonging to the Maďarovce group. The site was studied by Tichá in her dissertation work (1968) — later published in co-operation with Hanulík (Tichá — Hanulík 1971). The seventy-eight graves of this site were found on the locality called "Lúky" (Meadows). The inhumation graves had irregular rectangular shape and their depth varied between 50—110 cm and the skeletons were mostly contracted. The cremation burials containing small, perfectly burned bones, appeared also among the inhumation graves in the depth of 30—80 cm.

Only 30 skeletal remains were suitable for anthropological study — 9 of them belonged to males, 7 to females and 3 to children. It was impossible to identify the sex of 11 adult individuals. Craniometric measurements could have been done only on two male skulls and very modest are also the results of processing the post-cranial skeletons obtained from the remains of 5 males and 4 females. According to the cranial index the only measurable male skull is mesocranic, two male skulls are eurymetopic. As to his body height the only measurable man fits into the bracket of medium-high individuals.

To the Early Bronze Age belong also several graves in the *Dvory nad Žitavou* site, processed by Kordovaníková in her dissertation study, dealing with the Slavic-Avarian material of this locality (1967). The authoress does not indicate the exact number of graves from which her material comes, she just mentions that there were six skulls and fragments of long bones from eleven graves and that the skulls did not belong to the long bones. Four of the six skulls belonged to males and two to females. The authoress indicates only the basic craniometric and cranioscopic data. The post-cranial skeletons are evaluated only metrically, without distinguishing between the sexes.

Three of the evaluated male skulls are dolichocranic, one is mesocranic, one of the two female skulls is dolichocranic and the other mesocranic. Further characteristic features of the male skulls are orthocrany and hypsicrany, acrocrany and eurymetopy. The female skulls are orthocranic to hypsicranic, acrocranic and metriometopic.

Towards the end of the Early Bronze Age, in connection with the changes of the burial rite the number of anthropologically processed materials is conspicuously dropping. One of the causes being that the number of experts specializing in the study of cremation burials is still very low.

The anthropological material from the locations of the Carpathian Tumulus Culture of the Middle Bronze Age in the territory of Slovakia has not been studied.

There is relatively little processed anthropological material from the Late Bronze Age. The analysis of the cremation burial site of the *Piliny* culture *Barca II* was carried out by Palečková (1961). From a total number of 72 graves 31 con-

tained the remains of 42 individuals, 12 of them children and 30 adults, among them 9 males, 15 females and 6 individuals with indefinable sex. Besides other characteristics the authoress studied also the age categories of the buried, their body constitution, and muscle relief. She found traces of arthrotic processes on the remains.

From the region of the Piliny group we know several sporadic skeletal finds from caves, namely from the South Slovakian Karst (Bárta 1955). On the basis of the accompanying pottery we might perhaps attach to this group also the find of skeletal remains of some 11 individuals from the *Majda-Hrašková* Cave near Rožňava (Vlček 1958, Vlček — Kukla 1959). The intentionally smashed skulls as well as the cultic mask made of a human skull document that the caves were used for cultic rites at the break of the Final Late Bronze Age and of the Early Iron Age.

In conclusion of this survey of anthropological researches dealing with the Bronze Age in Slovakia let us mention the problematically dated anthropological finds from the entrance passage of the *Ardovska jaskyňa* (Ardovo Cave) near Domica in the South Slovakian Karst (Thurzo — Beneš 1976). Its accompanying pottery comes from various periods ranging from the Neolithic Age to the Medium Bronze Age. The skeletal remains come from three to five individuals and were intentionally damaged. The facial part of individual I reminds of the cultic mask from the *Majda-Hrašková* Cave, but also of the facial part of the skull found in Nitrianský Hrádok.

The comparatively large number of processed anthropological finds belonging to the Nitra group enables the comparison of the body characteristics, yielding us an idea of the physical type of this population. In conclusion we can say about the body characters of the finds from Branč, Matúškovo and Abrahám: The population of the Nitra group can be regarded as dolichocranic to mesocranic, orthocranic to hypsicranic, metriocranic to acrocranic, eurymetopic to metriometopic; mesoconch with a tendency to chamaeconchy and chamaerrhine with a tendency to mesorrhiny. While the craniometric data of the population are relatively homogenous, the body height determined by Manouvrier's method, differs a great deal in the individual groups. The body height of men varies from below-the-medium to above-the-medium height, while the body height of women varies from medium-high to tall.

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Dr. Milan Thurzo,
Slovenské národné múzeum —
Prírodovedný ústav,
Vajanského nábrežie 2,
885 36 Bratislava