Acta Biologica Szeged. 22 (1—4), pp. 145—152 (1976)

ANTHROPOLOGICAL CHARACTERIZATION OF A PREHISTORIC COMMON GRAVE AT GOMOLAVA (YUGOSLAVIA)

GY. FARKAS — ANTÓNIA MARCSIK

Department of Anthropology, Attila József University, Szeged

(Received September 15, 1975)

Abstract

In the findspot at Hrtkovci-Gomolava (Yugoslavia), in 1971, a common grave belonging to the Basarab culture (Iron Age) was excavated by NICOLA TASIĆ. In the course of the anthropological elaboration, the exact sex and age at death of the skeletal systems of 76 individuals could be established. These were taking place in three supposed layers. The number of children are unusually high, forming approximately 50 per cent of the series. The males are represented by 7, the females by 18 individuals. The Mediterraneans, Nordoids are predominating taxonomically while the number of Cromagnoid cases are much lower. Among the individuals of the three layers there could be observed many anatomical variations, different morphological characters, congenital anomalies, atavistic phenomena and rather grave pathological deformations. On the basis of all these, as well as of the blood typing performed, the individuals of the three layers are representing a uniform population. The finds have no analogy with the prehistoric matter in Hungary.

A survey of the material of investigation

In the findspot at Hrtkovci-Gomolava in Yugoslavia, in 1971, the archaeologist NIKOLA TASIĆ excavated an iron-age common grave (belonging to the Basarab civilization) (Fig. 1). The anthropological finds are at present being stored in the Voivodeship Museum (Vojvodanski Muzej) of Novi-Sad. From among the skeletal material of the common grave the remains of 78 individuals could be separated, deposited in three layers supposed. In two cases it was impossible to determine the exact sex and age at death. The detailed analysis refers therefore to 76 individuals. It turned out in the course of determining the age at death and sex by the classical anthropological methods and chemical analysis, as well, that the number of children were unusually high as the 39 individuals classified into the age-groups Inf. I and Inf. II are forming approximately 50 per cent of the series. And the juveniles (Juv.) are represented by 12, the adults and matured (Ad., Mat.) by 25 individuals, among the latter ones 7 being proved males, 18 femals (Table 1). The average age of life of females was about 36 years, that of males about 37 years, that of juveniles 16 while that of children about 8 years.

The degree of sexualization is: at males +0.66, at females —1.02 (FARKAS, 1972).

The number of buried individuals are :in layer I: 19 (2 males, 9 females, 8 juveniles and children), in layer II: 33 (1 male, 7 females, 25 juveniles and children), in layer III: 24 (4 males, 2 females, 18 juveniles and children).

It is striking that the number of children, as compared to the matured ones, is the highest one in layer II (Table 2).

Fig.1. Hrtkovci-Gomolava, Basarab civilization, common grave

Table 1. Hrtkovci-Gomolava, the distribution of material according to ages of life and sexes

Ages of life	Male p. c.	Female p. c.	Of undetermined sex	Altogether p. c.
Inf. I	4(14,8)	5(10,5)	1	10(13,1)
Inf. II	10(37,0)	19(39,5)	—	29(38,1)
Juv.	6(22,2)	6(12,5)	—	12(15,8)
Ad.	5(18,6)	13(27,0)	—	18(23,7)
Mat.	2(7,4)	5(10,5)	—	7(9,3)
Total:	27	48	1	76

Table 2. Hrtkovci-Gomolava, the distribution of sexes and ages of life according to layers

Ages of life	Layer I		Layer II		Layer III		Altogether p. c.
	male	female	male	female	male	female	
Inf. I	1	1	2	1	1	3	10(13,1)
Inf. II	—	3	5	10	5	6	29(38,1)
Juv.	1	2	4	2	1	2	12(15,8)
Ad.	1	6	1	5	3	2	18(23,7)
Mat.	1	3	—	2	1	—	7(9,3)
Total:	4	15	12	20	11	13	
Altogether	19 (25.0 p.c.)		32 +1 of undetermined sex (43.4 p.c.)		24 (31.6 p.c.)		76

The grown-up individuals of the common burial (7 males, 18 females) may be characterized according to the methods of classical anthropology (MARTIN—SALLER, 1957—1966) in the following way: at males and females, the dolichomorphic character of the cranium can be demonstrated associated with hypsicranic, at males with metriocranic, at females with acrocranic. Their forehead is broad, resp. medium-sized, at both sexes eurymetopic. On the basis of their cranial capacity they are aristencephalic. At males the splanchnocranium is extremely fragmentary. Their characterization can therefore be given only in case of females. According to this, they are characterized partly by leptoprosopic, partly by euryprosopic. The average stature of males calculated is 163.06 cm (small medium), that of females is 158.50 cm (large medium) (BACH, 1965; BREITINGER, 1938).

Fig. 2 3. Ad. female, am

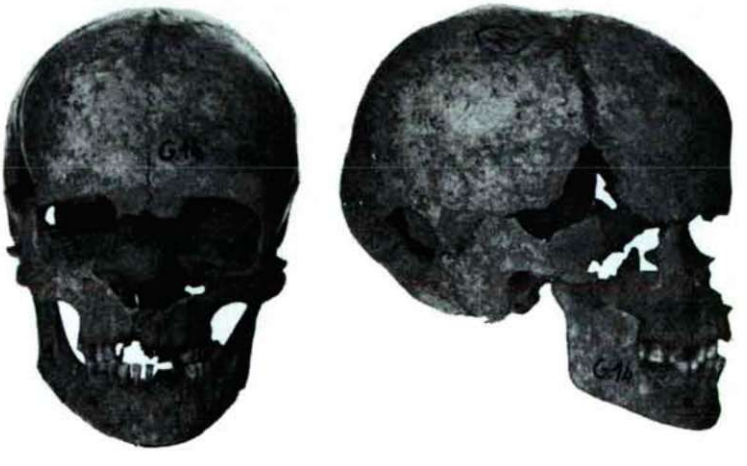


Fig. 3 14. Ad. female, crA-x

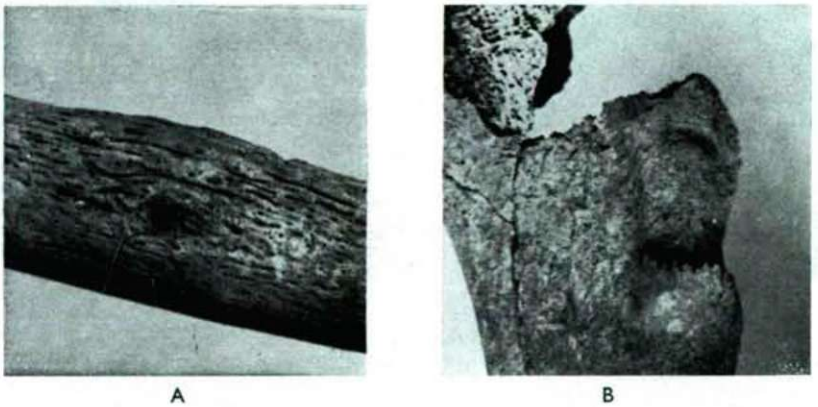
In accordance with the metric data — on the basis of Lipták's work (1965, 1971) — the higher case numbers are given by the types characterized by dolichocranic, leptoprosopic, bigger stature. This type is, therefore, Atlanto-Mediterranean (am, Fig. 2), Mediterranean (m) and — in default of the knowledge of colour-complexion conditionally — Nordoid (n). A lower ratio is represented by the cromagnoid-A (crA) taxon diagnosed with dolichocranic, euryprosopic, chamaecranic (Fig. 3). The closer underterminable brachycranic (probably Pamirian) individuals are also to be mentioned — even in spite of their low number. As the skeletons of layer III are rather fragmentary, the taxons mentioned belong to layers I and II.

We could observe among the individuals of the three layers a great many anatomical variations, different morphological characters, congenital anomalies and atavistic phenomena (MARTIN—SALLER, 1957—1966; BROTHWELL, 1959; FINNEGAN—FAUST, 1974). There are characters that are only characteristic of the individuals of layer I. Such are the torus palatinus (1), the slight clinocephaly (2), the double mental protuberane (1), a strong prominence on the ilium (1), large-sized foramen mentale and infraorbitale (1—1), fossa praenasalis (1). Among the remains of the individuals of layer II we have found os bregmaticum (1), foramen magnum of irregular shape or "leaning out" at its anterior part (1—1), sutura palatina transversa of non-horizontal course (5), a stronger process at the caudal part of the clavicula extremitas sternal (2), and condylus tertius (1). In layer III, we could observe in a case scaphocephaly. There are some characters that occur even in two layers. So in layers I and II: the canalis sacralis apertus (8), sutura metopica (6), perforatio fossae olecrani humeri (4), and os apicis (2). In layers II and III: the cone-shaped occiput (10), sutura incisiva (9), and flatness of the lambdoidal region (3). The ossa Wormiana (28) and the supranasal suture-remains (10) can be found in high case-number in all the three layers. Sacralisation as a developmental anomaly can only be observed among the idividuals of layers I and III (2).

A B

Fig. 4A 20. Ad. female, osteophyte-formation at the edge of the corpora of vertebrae (spondylosis deformans)
B 23. Ad. female, block vertebra

In addition to the variations mentioned, we have observed more serious deformations of the skeletons, as well (BROTHWELL, 1965; WELLS, 1965) but — owing to the low case number — we do not think practical to break down the data according to layers. Spondylosis deformans occurred in the dorsal but mainly in the lumbar spinal region in case of 6 individuals (1 male, 5 females) (Fig. 4a). Block vertebra can be observed at two other individuals (1 male, 1 child) (Fig. 4b). The traces of atrophic (osteoporotic) or other acquired bone diseases connected with reorganization (osteomalacia, rachitis) occurred in several cases. From among these, the deformations are graver in four cases (3 juveniles resp a child, 1 female), and in these cases a higher life-age determination was obtained by chemical analysis than the result achieved by the morphological method was. In case of other four individuals (3 females, 1 male) there was no difference between the results of the morphological and chemical age-determinations. There are remarkably many orbital cribra and each form of these occurred in case of children. Seven of the ten cases are girls and three boys (at least as referred to by the chemical determination). The bone destruction at these is generally mediocre but the radiogram is showing no deformation. At the diaphysis of both tibiae of a juvenile girl the cortical substance considerably thickened. In the middle part of the right tibia a major fistula, in the left upper and lower one-third part a minor fistula are visible. From the phenomenon osteomyelitis may be concluded (Fig. 5a). On the proximal epiphysis of both tibiae of one of the female



A B

Fig. 5A 27. Juv. female, osteomyelitis at the diaphysis of tibia
B 20. Ad. female, "pectiniform" exostosis at the proximal epiphysis of the left tibia

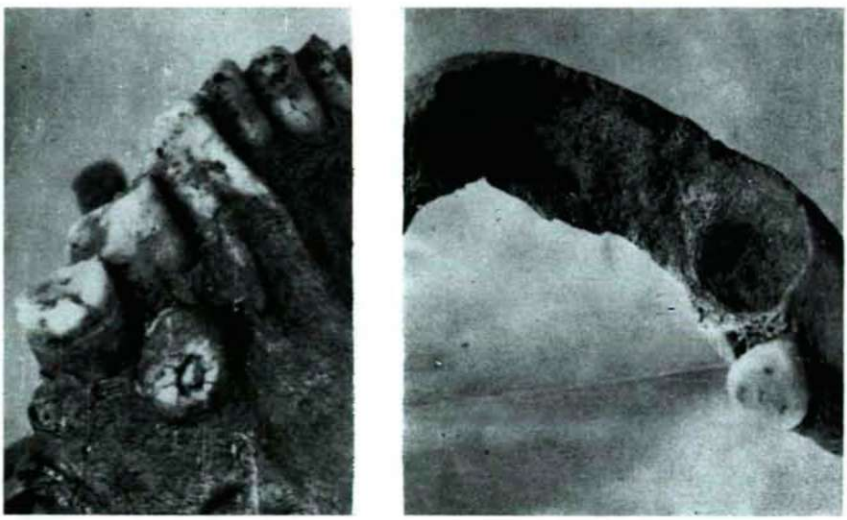
finds a pectiniform exostosis (Fig. 5b) could be observed while in another case we could notice an exostosis in the vicinity of promontorium, on the dorsal side of sternum, at the border between manubrium and corpus sterni.

In connection with the dentition we think necessary to mention that the caries frequency is comparatively low (4 individuals). The trace of a cyst was only seen in a single case: in the mandible, on the left, extending from the incisors up to M_1 (Fig. 6a). The trace of a periapical abscess and dental osteomyelitis can similarly be seen in a case. Two dental anomalies are also remarkable, namely a persisting deciduous tooth in the field between the left upper M_2 and M_3 (Fig. 6b), as well as the biradical caninus in the left upper quarter.

Deformations of smaller or larger degree, referring to an external effect — supposedly a blow — were observed in two crania in the area of the asterion, resp. in that between the tuber parietale and the sutura sagittalis.

In cases of a female and a young-age individual a deformation referring to trepanation (BARTUCZ, 1966) could be observed but owing to the fragmentary character of remains we can only suppose this phenomenon.

As regards the blood grouping of the individuals of the common grave, 0 is dominant, followed in sequence by B and later A. AB occurs in a lower number of cases while the number of NSe is not more than 4 (Table 3).



A B

Fig. 6A 69. Mat. male, remains of a large-sized cyst in the mandible
B 16. Ad. female, persisting deciduous tooth in the field above M_2 and M_3

Table 3. Hrtkovci-Gomolava, blood grouping

Blood-group	Number of cases	per cent	Genotype	$\chi^2_{(1)}$	P
A	17	22.7	$p^A = 0.17$		
B	16	21.3	$q^B = 0.16$	7.6	$0.01 < P < 0.001$
0	28	37.3	$r^0 = 0.65$		
AB	10	13.4	0.98		
NSe	4	5.3			
Total:	75				

Discussion

To sum up, about the skeletons of the grave at Gomolava we may say the following. On the basis of metric, taxonomic, and different morphological features, as well as on that of blood-grouping, the individuals of the three layers supposed are representing a homogeneous population. On the basis of the significance investigation concerning the deviation of those belonging to blood-group AB ($\chi^2_{(1)}$ test), the population is in a genetic equilibrium ($0.01 < P < 0.001$). According to the decomposition quotient, between beginning and finishing the burial about 10 years can be established. Burying in a common grave is not characteristic at all of the Basarab civilization. This grave can therefore be explained with other causes. Among these we may suppose an epidemic made probable by the vicinity of the river Száva, as well as some kind of catastrophe that claimed a rapid burial, etc. All these are, of course, but hypotheses.

It is anyway a fact that, similarly in Northern Jugoslavia, on the basis of an oral information of the archaeologist SÁNDOR NAGY (Novi-Sad), we know about a non-protected but in a quite similar way situated bronze-age mass-grave, as well. Of such a character is also the find-complex of the cave Ofnet from the upper palaeolythic period. The practice of mass burial does therefore not pass in this case for a rarity, even if we cannot find, for the moment, any plausible explication. The find is not analogous to the prehistoric material in Hungary. Owing to the interesting way of buiral, we none the less considered it worth while to give a brief exposition about the evaluation of the skeletal material.

We are deeply indebted to the Museum of Novi Sad and to Nikola Tasić for ensuring to us the elaboration of finds; to FEDORA BIKAR for making the radiograms; to IMRE LENGYEL for making available to us the data concerning the chemical age and sex determination, blood-grouping, and those of the decomposition quotient.

References

BACH, H. (1965): Zur Berechnung der Körperhöhe aus den Gliedmassenknochen weiblicher Skelette. — Anthr. Anzeiger *29*, 12—21.

BARTUCZ, L. (1966): A praehistorikus trepanácói és orvostörténeti vonatkozású sírleletek (The prehistoric trepanation and some grave-finds of medical-historical relation). Paleopathologia 3. — Budapest.

BREITINGER, E. (1938): Zur Berechnung der Körperhöhe aus den langen Gliedmassenknochen. — Anthr. Anzeiger *14*, 249—274.

BROTHWELL, D. R. (1959): The use of non-metrical characters of the skull in differentiating populations. — Bericht über die 6. Tagung der Deutschen Gesellschaft für Anthropologie in Kiel 30.7 bis 2.8. 1958. — Homo (Suppl.) 103—109.

BROTHWELL, D. R. (1965): Digging up Bones. — London.

FARKAS, GY. (1972): Antropológiai Praktikum I. Paleoantropológiai Metodikák. Közreműködtek: *Lengyel I.* és *Marcsik A.* (Practical course of Anthropology I. Palaeoanthropological Methods. With the cooperation of *I. Lengyel* and *Antonia Marcsik*). — Szeged. (Local lecture notes).

FINNEGAN, M.—FAUST, M. A. (1974): Bibliography of human and nonhuman non-metric variations. — Research Reports No. 14 Depart. of Anthropology, Univ. of Massachusetts, Amherst. 1—132.

LIPTÁK, P. (1965): On the taxonomic method in paleoanthropology (historical anthropology). — Acta Biol. Szeged. *11*, 169—183.

LIPTÁK, P. (1971): Embertan és emberszármazástan (Anthropology and origin of men). — Budapest.
MARTIN, R.—SALLER, K. (1957—1966): Lehrbuch der Anthropologie. Bd. I—II. Stuttgart.
WELLS, C. (1965): Bones, bodies and disease. — Thames and Hudson, London.

Address of the authors:
DR. GY. FARKAS,
DR. ANTÓNIA MARCSIK
Department of Anthropology,
A. J. University,
H—6701 Szeged,
P. O. Box 428,
Hungary