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# UHERSKÉ HRADIŠTĚ-SADY 500 YEARS OF CHRISTIANITY IN CENTRAL EUROPE

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et al.



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## INTRODUCTION

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In 2018, the Moravian Museum published the first volume of a series of books about the sacral centre in Uherské Hradiště – Sady, an important early and high medieval site, entitled “Uherské Hradiště – Sady. 500 Years of Christianity in Central Europe I. Catalogue of the Burial Ground” (*Galuška et al. 2018*). This was to be followed by a second volume devoted to the archaeological and historical evaluation of the burial ground holding almost a thousand graves, which was to be accompanied by separate specialised studies focusing on individual selected groups of grave finds and related issues.

Very soon, however, it became clear that combining all the evaluations and conclusions with the results of analyses in a number of other fields would result in an inordinately large, weighty and cumbersome book. It is also true that not all the individual studies were available to the editors in publishable form in 2022 and, most importantly, further analyses of the skeletal and genetic material obtained, which were to provide confirmation of a number of new conclusions, were still being conducted. For this reason, a separate second volume of the Sady series entitled “Uherské Hradiště – Sady. 500 Years of Christianity in Central Europe II. Archaeological Analysis” (*Galuška 2022*), i.e. “archaeology” without the individual accompanying studies mentioned above, was published in the year in question. Space is logically being given to these studies now in the book you have just opened, the third volume of the Sady series bearing a title almost identical to that of the second volume – “Uherské Hradiště – Sady. 500 Years of Christianity in Central Europe III. Analysis”. For the sake of completeness, we might add that a fourth volume in the series entitled “Uherské Hradiště – Sady. 500 Years of Christianity in Central Europe IV. Historical Contexts in the Ninth to Thirteenth Centuries” (*Mitáček – Vavřínek 2021*) was published in 2021.

This third volume of the series of books, focusing on the medieval church burial ground at the sacral site in Uherské Hradiště – Sady, takes the form of a collective monograph to which 16 experts, specialists in their fields, have contributed as authors. It contains a total of nine chapters compiled into three loosely connected sections. The individual texts were peer-reviewed by expert specialists whose conclusions were followed up by two principal reviewers – Lumír Poláček and Matej Ruttkay. The scope of the individual chapters in the book “Uherské Hradiště – Sady. 500 Years of Christianity in Central Europe III. Analysis” corresponds to the set of human individuals buried in the vicinity of the church in Uherské Hradiště – Sady and the number of analysed objects found in the graves in Sady. It is, therefore, no surprise that one of the longest is the very first chapter, which covers the anthropological evaluation of the skeletal remains of more than 950 individuals who were buried by the Sady church in the Early and High Middle Ages (authors Roman Bortel and Zdeněk Tvrďý). Chapter Two is of comparable length and presents the conclusions of the palaeopathological analyses of selected skeletal remains (Lenka Vargová, Ladislava Horáčková, Kateřina Vymazalová), while chapter Three presents the results of isotope analyses obtained from the study of samples from selected graves (Miriam Nývltová Fišáková). The extensive fourth chapter is remarkable, presenting the results of radiocarbon dating of bone samples from selected graves and their comparison with the chronological conclusions relating to the same graves arising from the study of grave goods and offerings found in them, i.e. with “traditional” archaeological dating (Luděk Galuška, Tomáš Chrástek). Chapter Five contains the results of genetic analyses of bone samples from individuals from the Middle Ages and the results of buccal swabs taken from volunteers from the current population, with their comparison being one of the objectives of the study (Hana Svobodová, Luděk Galuška). Chapter Six is devoted to anthropological reconstructions of the likenesses of two men from two important Sady graves from the Great Moravian period that were created on the basis of study of their skulls (Eva Vaníčková, Roman Bílek). Coins and insight into their function in the graves of the eleventh and twelfth centuries is the essence of the content of Chapter Seven (Dagmar Grossmannová), while the study presented in Chapter Eight considers mineralogical and chemical analyses of stone and glass used in the production of jewellery and ornaments (Monika Kubernátová). Finally, the concluding Chapter Nine presents the results of material and technological research into selected pieces of jewellery made from precious metals that were found in elite graves from the Great Moravian phase of the Sady burial ground (Alena Selucká, Andrej Šumbera, Karel Rapouch).

In conclusion, we would like to point out that for a clearer chronological orientation in the graves at the burial ground by the church in Uherské Hradiště – Sady, we use the designation of the graves that was created for the purposes of the catalogue (*Galuška et al. 2018a*) and subsequently also used in the archaeological evaluation of the burial ground (*Galuška 2022*). In this designation, the letters VM are assigned to the graves of the Great Moravian or early medieval age (from the eighth century to the middle of the tenth century), while the letters MH are used to designate graves from the Early to Late Hillfort period (from the second half of the tenth century to the beginning of the thirteenth century). The numbers following the letters VM and MH are the serial numbers in ascending order of the graves in the two chronological sets of graves (for example, grave VM 10 is the tenth grave in the Great Moravian set of graves, while grave MH 93 is the ninety-third in the Late Hillfort set of graves). The numbers following the dash, separated by a slash, indicate the order in which the graves were uncovered in the individual years of field research, regardless of their inclusion in the chronological sets (e.g. grave VM 3 – 12/59 was the twelfth grave found in 1959, though it is third in the series of Great Moravian graves, while grave MH 209 – 42/60, for example, was the forty-second grave found in 1960, but belongs in two hundred and ninth place in the series of Late Hillfort graves, and so on, cf. *Galuška 1996, Galuška et al. 2018a*).

*Luděk Galuška – Jiří Mitáček*







ANTHROPOLOGICAL EVALUATION  
OF SKELETAL REMAINS FROM THE  
EARLY MEDIEVAL NECROPOLIS IN  
UHERSKÉ HRADIŠTĚ – SADY

ROMAN BORTEL  
ZDENĚK TVRDÝ

## INTRODUCTION

Archaeological research conducted in the years 1959 to 1965 under the leadership of archaeologist Vilém Hrubý from the Moravian Museum, assisted by his colleague Věra Hochmanová-Vávrová, revealed an extensive archaeological situation in the Uherské Hradiště cadastre in the location of the Špitálky (or Na Špitálkách) field track, known since 1952 under its new official title of Sady (and also known as the Sady or Metropolitan Height and referred to since 2013 as the Saint Methodius Height). The findings made and the context indicated that this was an important sacral centre with a church and a large adjacent flat inhumation burial ground that was used in a number of time periods including, first and foremost, the time of Great Moravia from the end of the eighth century to the first half of the tenth century A.D., and then the Late Hillfort period up to the turn of the twelfth and thirteenth centuries. The individual graves at the burial ground and the church were assigned to the corresponding horizon and divided into two basic sets: the older Great Moravian period and the later Late Hillfort period (including also hypothetical graves from first half of the tenth century A.D.).<sup>1</sup>

The gradual, though systematic, analysis of sets of skeletal remains (stored in the depository of the Anthropological Department of the Anthropos Institute of the Moravian Museum) did not take place until the beginning of the 1990s. Research into the greater part of the Great Moravian skeletal collection was performed by anthropologist Marta Dočkalová from the Moravian Museum.<sup>2</sup> Prior to this, anthropological processing was conducted on just two graves: grave VM 87 – 1/64 in a cavity in the apsidal wall of the cruciform church, which is associated with the burial of Archbishop Methodius in 885,<sup>3</sup> and the skeleton in the tomb grave VM 3 – 12/59 in the centre of the chapel in the northern part of the complex, indicative of a high-ranking Moravian. All that was found in the first case was a charred collarbone that does not, in all probability, come from the time of Great Moravia, but found its way to the site as the result of other causes.<sup>4</sup> In the second case, according to Vilém Hrubý,<sup>5</sup> the skeletal remains from the tomb were first designated by anthropologists (Jan Jelínek, Tomáš Dacík) from Brno as a female aged between 25 and 35, though they were later reassessed by the well-known anthropologist Emanuel Vlček in Prague (specialists Milan Černý and Vladimír Novotný, among others, were also involved in the analysis) and identified as being undoubtedly those of a male who died at an age of between 45 and 50 (more details on this individual in the text below).<sup>6</sup>

The second skeletal collection (Late Hillfort) was processed at the turn of the millennium as part of concurrent diploma theses at the former Department (now Institute) of Anthropology at the Faculty of Science of Masaryk University in Brno: Roman Bortel – sex, age, demography, skull characteristics; Iveta Šámalová – characteristics of the postcranial skeleton, body height; Miroslav Hájek – manifestations of stress.<sup>7</sup>

In the last decade, a medical-anthropological review of selected individuals from both skeletal sets was carried out for more-detailed palaeopathological research (Ladislava Horáčková, Lenka Vargová, Kateřina Vymazalová), genetic analysis (Hana Svobodová), isotope analysis of certain chemical elements (Miriam Nývltová Fišáková), and facial reconstruction (Eva Vaníčková, Ondřej Bílek) – see the individual chapters in this volume. During completion of the catalogue of the Uherské Hradiště – Sady burial ground, it then proved necessary to re-evaluate and clarify a number of older conclusions in a new light and bring them to completion. This chapter provides a summary of older and more recent anthropological investigations into skeletal remains found in the Uherské Hradiště – Sady graves.

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1 GALUŠKA 1996, 76.

2 GALUŠKA 1996, 88–89.

3 HRUBÝ 1970.

4 GALUŠKA 1996, 88, 118–122.

5 HRUBÝ 1975, 6.

6 VLČEK 1995.

7 BORTEL 2001, ŠÁMALOVÁ 2000, HÁJEK 2000.

## THE NUMBER OF EXAMINED SKELETONS AND THEIR STATE

Of the graves found at the Uherské Hradiště – Sady burial ground, archaeologist Vilém Hrubý originally assigned 87 to the Great Moravian period and 857 to a later period. Altogether, a total of 944 graves were investigated here in the years 1959 to 1964. These graves were of varying informative value, however, and it was difficult in some cases to decide the period from which any given grave actually came. After many analyses and revisions and the reassignment of graves performed in 1965, the final evaluation indicated that a total of 958 graves were found at the extensive Uherské Hradiště – Sady necropolis (including persons buried in the sacral buildings), of which 87 were attributed to the Great Moravian period and 871 to the later Late Hillfort phases of the necropolis (also including hypothetical graves from first half of the tenth century). Even at the time at which the remains were being lifted from the soil, it was clear that some grave pits contained more than one individual or held piles of bones (created by the re-interment of skeletal remains coming mainly from older disturbed graves), for which reason the number of buried persons did not correspond to the number of graves, but was somewhat higher. The situation was therefore as follows:

In the case of the Great Moravian graves (VM), two grave pits shared by two burials were found – a woman and a man, 20–30 years old (VM 59 – 128/60, VM 60 – 129/60), and two children aged from five to eight (probably a boy and a girl, VM 65 – 75/61, VM 66 – 76/61), as well as one pit that actually held three burials – a man (aged 40–60) and a woman (around 50 years old) along with a younger woman aged 20–30 (VM 49 – 82/60, VM 52 – 86/60 and VM 53 – 87/60). One grave was, however, assigned a single primary number with two distinct individuals “a” and “b” (VM 15 – 102 a, b/59), as it was more of the nature of a pile of bones that contained the remains of a man and a woman who died within an age range of 40–50 years. The number of Great Moravian graves increased thereby to 88, though in six cases the skeletons were not completely preserved or were considerably disintegrated, while the grave in the brick recess (VM 87 – 1/64), which probably contained non-original skeletal material, represented a special case.

The second skeletal group from the later Late Hillfort phase (MH) turned out to be the most extensive necropolis with a church from the tenth century to the beginning of the thirteenth century in Moravia that has been fully investigated.<sup>8</sup> The total number of graves found here and numbered in ascending order amounted to 871, with another six burials being assigned the letter “a” (MH 162a – 205/59, MH 249a – 88/60, MH 262a – 106/60, MH 616a – 160/62, MH 620a – 165/62, MH 626a – 172/62), along with the pile of bones MH 7 – 7/59 containing three principal individuals, meaning that a total of 879 individuals were identified. A number of joint grave pits were also identified at the Late Hillfort necropolis. In addition to a primary individual, a number of graves also contained 52 other fragmentary skeletons in total which were designated secondary deposits. The maximum number of all individuals, including secondary deposits, in the MH group thereby increased to 931. In 94 cases, it was not possible to lift the skeletons from the grave bed (the approximate identification of sex and age was possible at the site of the find during the course of archaeological research or from accompanying archaeological finds), and one grave pit (MH 362 – 52/61) did not contain any skeletal remains at all. For statistical and demographic purposes, 784 individuals could therefore be used for this set when secondary deposits were not included in the calculations. In total, for the two periods taken together (from the end of the eighth century to the beginning of the thirteenth century), 958 graves were found at the Uherské Hradiště – Sady necropolis that contained at least (not including bones that were designated secondary deposits) 967 individuals, either preserved or not preserved.

The skeletons themselves were mostly in a fragmentary state, often just broken bones or individual teeth. This can be attributed to decomposition in the soil environment in which the deceased were buried, to damage caused by digging new graves on the sites of older graves, or to difficulties in lifting the skeletons. This led to the postmortal co-mingling of skeletal fragments, which may then have been described under the same inventory number in spite of the fact that they belonged to different individuals. This was also confirmed by the fact that a number of graves were superimposed and co-mingling may already have occurred during the lifting of the skeletons from the soil.

8 GALUŠKA – MITÁČEK – NÝVLTOVÁ FIŠÁKOVÁ 2018, 99–114.

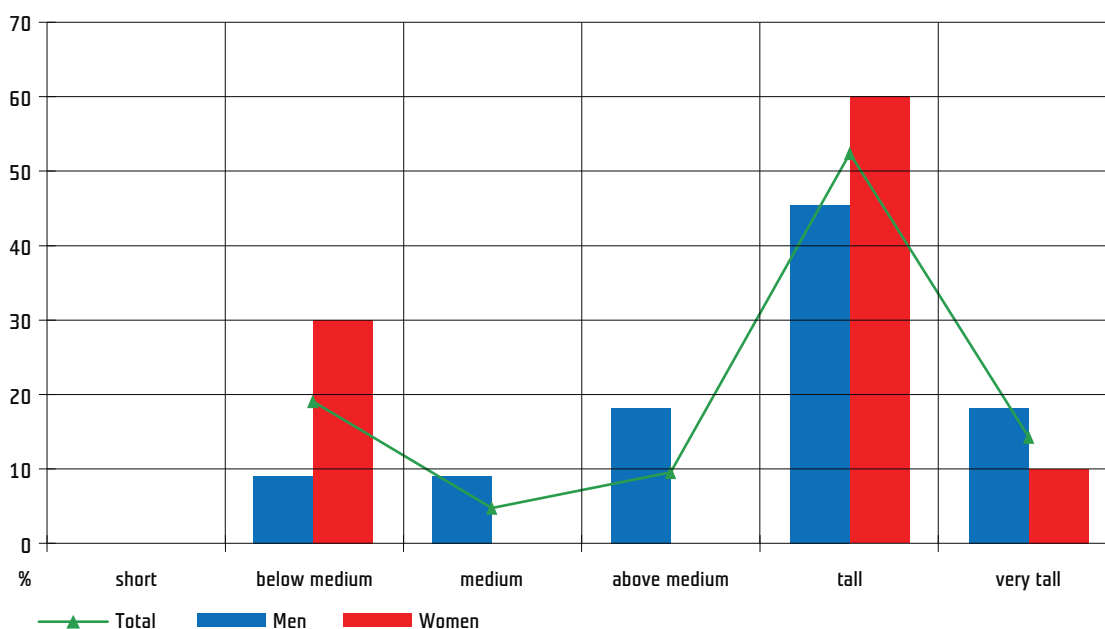
VM 53 – 87/60, VM 70 – 120/61, VM 82 – 141/62. Only one woman in Uherské Hradiště – Sady could be assigned to an age of more than 50 years (up to 60 years, *maturus* II) according to standard methods: VM 74 – 125/61.

In terms of physical appearance, some of the women were of a medium feminine character with features typical of the second group of men, i.e. not particularly robust with slender bones without pronounced muscle attachments (e.g. VM 73 – 123/61). However, the second group of female skeletons (e.g. VM 26 – 160/59, VM 27 – 165/59) was extremely interesting. These were almost ultra-feminine skeletons of very gracile slight women. They were characterised by slender and relatively short bones of the upper and lower limbs without any signs of muscle attachments and small skulls with typical female features. The height of these short women may have ranged from 149 to 153 cm (they tended to fall into the category of below medium height), while the taller women in the first group tend to be between 160 and 167 cm in height (the category tall women).

## Body height

Body height could not be calculated for all individuals due to the insufficient state of preservation of their long bones. The average body height of all measurable adults (21 skeletons, i.e. 42.9 % of adults and 23.9 % of the entire Great Moravian sample) was 166.6 cm (median 167.7 cm), with a standard deviation of 9.2 cm (Table 3, Figure 2). Individuals with a tall stature were most common (52.4 %), while there were no individuals in the category short stature.<sup>21</sup> The proportions of individuals in the various categories are, however, highly relative, since the dimensions of the long bones could not be measured for the majority of the buried individuals, for which reason their body heights could not be calculated.

Figure 2: Uherské Hradiště – Sady: The Height Distribution of Great Moravian Individuals



Of the individuals of the male sex that it proved possible to analyse, the tallest (181 to 182 cm) would seem to have been the men from graves VM 15 – 102b/59 and VM 32 – 175/59 in the category very tall men (over 180 cm). Most males fell, however, into the category tall (170 to 179 cm) – five individuals (45.5 %). The average height of the men was around 172.8 cm (the median was 171.5 cm), with a standard deviation (SD) of 6.1 cm.

The tallest woman among the ten measurable skeletons appeared to be the individual in grave VM 11 – 25/59 who was of a height of as much as 171 cm, which placed her categorically among very

<sup>21</sup> Height categories according to MARTIN – SALLER 1957.

As far as the Great Moravian skeletal collection from the Saint Methodius Height in Uherské Hradiště – Sady is concerned, its demographic structure, physical appearance and archaeological context suggest that these were elite groups or perhaps groups of people or families socially distinguished, i.e. just a certain sample of the population (the central burial ground of the extensive Great Moravian agglomeration here was evidently located on the Na Valách site in today's Staré Město). In the case of the Late Hillfort collection, it had already become a centralised necropolis, where rough estimates indicate an average and constant population of around 85 to 88 people over the 250 years of the necropolis or around 107 to 110 people if we take the figure of 200 years. This may, then, have been the population of the settlements around the Sady Height who buried their dead at this place, evidently with an awareness of its former importance at the time of Great Moravia or merely with the intention of maintaining a tradition. At the same time, it is also the largest early medieval church burial ground excavated to date in Moravia.

Table 1: Uherské Hradiště – Sady: The Distribution of Great Moravian Individuals

Sex	number	%
non-adults	32	39.51
men	27	33.33
women	21	25.93
indeterminable	1	1.23
<b>total analysable</b>	<b>81</b>	<b>100.00</b>
other	7	7.95
<b>aggregate total</b>	<b>88</b>	<b>100.00</b>

Table 2: Uherské Hradiště – Sady: The Distribution of All Great Moravian Individuals by Age and Sex

Age category	number	%	men	%	women	%	non-adults	%
infans I	0-0.5	1	1.23	-	-	-	1	3.13
infans II	0.5-7	13	16.05	-	-	-	13	40.63
infans III	7-14	5	6.17	-	-	-	5	15.63
juvenis	14-20	8	9.88	-	-	-	8	25.00
adultus I	20-30	18	22.22	9	33.33	9	42.86	-
adultus II	30-40	9	11.11	3	11.11	6	28.57	-
maturus I	40-50	16	19.75	11	40.74	5	23.81	-
maturus II	50-60	4+1	6.17	3	11.11	1	4.76	-
senilis	60<	0	0.00	0	0.00	0	0.00	-
indeterminable (infans)	0-14	2	2.47	-	-	-	2	6.25
indeterminable (infans-juvenis)	7-20	1	1.23	-	-	-	1	3.13
indeterminable (adultus-senilis)	20<	1	1.23	1	3.70	-	-	-
indeterminable	-	2	2.47	-	-	-	2	6.25
<b>total analysed</b>		<b>80+1</b>	<b>100.00</b>	<b>27</b>	<b>100.00</b>	<b>21</b>	<b>100.00</b>	<b>32</b>
not lifted/preserved	-	6	6.82	2	6.90	-	-	4
empty grave	-	1	1.14	-	-	-	-	-
<b>aggregate total</b>		<b>86+2</b>	<b>100.00</b>	<b>29</b>	<b>100.00</b>	<b>21</b>	<b>100.00</b>	<b>36</b>

Table 3: Uherské Hradiště – Sady: The Body Height of Great Moravian Individuals by Sex (in cm)

Height category	number	%	men	%	women	%
short	0		0	0.0	0	0.0
below medium	4	19.0	1	9.1	3	30.0
medium	1	4.8	1	9.1	0	0.0
above medium	2	9.5	2	18.2	0	0.0
tall	11	52.4	5	45.5	6	60.0
very tall	3	14.3	2	18.2	1	10.0
<b>total</b>	<b>21</b>	<b>100.0</b>	<b>11</b>	<b>100.0</b>	<b>10</b>	<b>100.0</b>
average	166.6		172.8		159.8	
median	167.7		171.5		160.7	
minimum	149.1		163.2		149.1	
maximum	181.9		181.9		171.0	
SD	9.2		6.1		7.0	