

ANTHROPOLOGICAL INVESTIGATION OF THE 18TH-19TH CENTURY OSSUARY OF THE DOMINICAN CHURCH AT VÁC, HUNGARY

Preliminary report

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Abstract

During reconstruction work, in 1994-95 265 naturally mummified individuals and an ossuary with the remains of approximately 40 individuals were uncovered in the crypts of the Dominican Church at Vác, Hungary. The specimens had been buried continuously during the period 1731-1838. The anthropological material of the ossuary was examined, the number of secondarily buried specimens was identified and the age and sex distributions of the remains were considered.

Key words: 18th-19th century, Dominican Church at Vác, naturally mummified bodies, ossuary.

Introduction

During reconstruction work in 1994-95, 265 naturally mummified individuals and an ossuary with the remains of approximately 40 individuals were uncovered in the crypts of the Dominican Church at Vác, Hungary. The excavation was led by the ethnographers MÁRTA ZOMBORKA (Tragor Ignác Museum, Vác) and EMIL RÁDULY (Open Air Museum, Szentendre). ÉVA SUSA, a forensic anthropologist (Forensic Institute, Budapest), regularly participated as an anthropologist in the process (ZOMBORKA, 1966).

The bones belonging to given individuals could have been sorted by appropriate, level by level excavation (ÜBELAKER, 1989). However, during the exposure, the ossuary was excavated vertically from the one end of the box to the other. Additionally, the anthropologist was not present. Since time was short, the contents of the ossuary were rapidly put into boxes. When the boxes arrived at the Department of Anthropology, the remains had to be replaced again.

The anthropological remains are currently stored at the Department of Anthropology, Hungarian Natural History Museum.

In the present study, the anthropological material of the ossuary was examined in order to identify the number of individuals, and to establish the age and sex distributions of the remains.

Material and method

The ossuary was found at the end of a small corridor of the crypt. This corridor had been closed off by a cavity containing an ossuary. The cavity was more or less closed, and was surrounded by Medieval wall remains. The size and shape of the cavity were quite unusual: 5.2 m long by 1 m wide at one end, but only 80 cm wide at the other. The ossuary was a large wooden box precisely tailored into this cavity. The painted wooden box contained the remains of 40 individuals. During the second inhumation, the more or less decomposed remains of the dead were collected and reburied in the ossuary, since the crypt had been filled up.

The registers of deaths kept at the rectory and the painted texts on the coffins gave the exact date of death of the mummified individuals found in the crypt. According to these, the burials of the individuals may be dated to 1731-1841.

Unfortunately, such exact data are not available in the case of the ossuary. Most probably it contains the bone material of the coffins exhumed at the end of the 18th century (ZOMBORKA, 1996).

The ossuary contained bones, partially mummified human remains, pieces of dried-out soft tissues, hair remains, and textile remains and scrapings in a large quantity. Locally, grub remains were found among the remains. The position photographs revealed that the human remains were not always placed into the box in anatomical order. Corpses in different states of preservation and decomposition must have been put on top of one another.

Colourful fungi and bacteria plaque were observed on the bones and soft tissues of the mummies and the contents of the ossuary. Samples were taken from the plaque for microbiological examinations. As the first step of preservation, the remains were exposed to X-radiation to disinfect them (3 minutes, 4.5 mA, 75 kV/90 kV).

In examinations of the anthropological material in the ossuary, the method described in the manual by UBELAKER (1989) was applied. Use was also made of the methods of ÉRY and SUSA (1994), applied during the analysis of a 20th century mass grave (Budapest, Soroksár Street), and the publication of BARTUCZ (1966) concerning the skeletons in the Kiskunhalas ("Kurucz-hill") mass grave.

The anthropological examination procedure was started by a classification of the bones. After sorting, the left and right femora were identified, and the pelvises were pieced together.

Estimations of the morphological sex and age had to be made for each bone separately, since the bones were disarticulated.

In estimations of sex, 12 anatomical characters were considered on the skull and 9 on the pelvis (ÉRY et al., 1963; ACSÁDI and NEMESKÉRI, 1970; ÉRY, 1992). Estimations of biological age involved examinations of the numbers and developmental stages of deciduous and permanent teeth (SCHOUR and MASSLER, 1941; UBELAKER, 1989), and the lengths of the long bones (STLOUKAL and HANÁKOVÁ, 1978) in the Infans I and II age groups. Since mummification was advanced, the method of tooth eruption could not be applied in some cases, and accordingly the standards for head circumference given in the publication of EIBEN et al. (1992) were applied.

The surface changes in the facies symphyseos of the ossis pubis were scored for the age groups *adultus*, *maturus* and *senilis* (SUCHEY, 1979; KATZ and SUCHEY, 1986; BROOKS and SUCHEY, 1990). The stages of ectocranial suture closure were scored (Meindl and Lovejoy, 1985) when the soft tissues allowed this.

The examinations also extended to the stages of demineralization of the roots of the permanent teeth (LAMENDIN et al., 1992) and the abrasion of the permanent teeth (BROTHWELL, 1972).

Results

Microbiological results

The microbiological examinations did not demonstrate any microorganisms which implied danger to the researchers or the remains. Only the presence of *Clostridium* sp., aerosporatic bacteria, and ordinary mildew was found.

Characteristics of bone material

The excavation of a secondary burial is a complex task. The locations and the relationships of the bones may provide a picture of the inhumation procedure. When a small number of individuals are involved, the best method is to record the position of each bone exactly, using detailed descriptions, measurements and photographs. Of course, it is difficult to apply this method to a large number of specimens. The extent of the secondary burial is an important factor, since the material should be removed as rapidly as feasible after exposure, in order to avoid damage (UBELAKER, 1989). As mentioned above, the time available for the exposure was very short, and this determined the procedures applied during the discovery. It should be stressed that the rapidness of exposure is not to be confused with the rapidity of the post-exposure procedures. Under favourable circumstances, by means of professional methods, it

Table 1. Frequency of disarticulated bones of adults in the ossuary, Dominican Church at Vác.

Sort of Bones	Number of Bones		Minimum No. of Individuals
Cranium	11		11
Calvarium	5		5
Mandibula (separated)	6		6
Atlas	18		18
Axis	17		17
Corpus sterni	25		25
Vertebra cervicalis	78		16
Vertebra dorsalis	276		23
Vertebra lumbalis	135		27
Os sacrum	30		30
(Pelvis)	31		31
	Right	Left	
Clavicula	18	23	23
Scapula	26	26	26
Humerus	24	24	24
Radius	22	21	22
Ulna	24	22	24
Os coxae	28	28	28
Femur	25	28	28
Patella	8	11	11
Tibia	26	26	26
Fibula	28	26	28
Calcaneus	20	24	24

would have been possible to identify the bones belonging to the given individuals and to accumulate much more information.

The bones were brownish, and in many cases dark-brown as a result of organic material. The bone texture was decomposed, its density was decreased, and its texture had become fragile.

Table 2. Age and sex distribution based on the skulls.

Age groups	Sex			Total
	Male	Female	Undeterminable	
Perinatal	-	-	2	2
Infans I	-	-	8	8
Infans II	-	-	-	-
Juvenile	-	-	-	-
Adultus	2	1	-	3
Maturus	6	5	-	11
Senium	1	1	-	2
Total	9	7	10	26

Table 3. Age distribution based on the pelvis of adults (SUCHEY and BROOKS method).

No.	Sex	Phase	Age
1.	female	V	40-65
2.	male	VI	49-73
3.	male	V	35-56
4.	female	III	23-39
5.	female	V	34-63
6.	female	V	34-63
7.	male	III	22-35
8.	female	V	34-63
9.	female	V	34-63
10.	male	IV	26-45
11.	female	III	23-39
12.	female	V	34-63
13.	male	II	20-27
14.	male	IV	26-45
15.	male	IV	26-45
16.	female	VI	48-72
17.	male	V	35-56
18.	male	IV	26-45
19.	female	IV	27-49
20.	male	IV	26-45
21.	male	IV	26-45
22.	male	IV	26-45
23.	female	IV	27-49
24.	female	III	23-39
25.	female	-	?
26.	female	III	23-39
27.	female	III	17-22
28.	female	-	?
29.	female	II	20-30
30.	female	I	17-22
31.	male	-	?

Ten percent of the bones of individuals buried secondarily in the ossuary were lacking post mortem. In almost all cases, mummified remains of soft tissues could be observed on the surfaces of the bones. Dried soft tissue was found in the skull. Dark hair remains were sometimes present.

The mummification process was more advanced for the skulls of children.

Number of individuals; distributions according to sex and age

From the separate examination of the different sorts of bones, it was estimated that the remains of at least 31 adults and 15 subadults were buried in the ossuary. The frequencies of disarticulated bones in the ossuary are shown in Table 1. The maximum number of individuals was indicated by the number of pelvises. The minimum number of individuals, 22, was indicated by the skull remains. Besides 16 skulls, 6 separate mandibles were also found.

As concerns the 10 children (2 of perinatal age, 8 of Infans I age), postcranial skeletons were found in addition to skulls (Table 2). Five subadults (3 of Infans I, and 2 of Infans II age) yielded only postcranial skeletons.

The skulls suggested the following sex distribution: 9 males and 7 females. Two-thirds of them belonged to the mature age group. Examinations of the pelvises indicated 13 males and 18 females. The ages estimated by the SUCHEY-BROOKS method are given in Table 3, together with the sex distribution.

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