MUMMIES FROM THE 18TH -19TH CENTURY DOMINICAN CHURCH OF VÁC, HUNGARY

I. Pap[1], É. Susa[2] and L. Józsa[3]

[1] Department of Anthropology, Hungarian Natural History Museum, H-1062 Budapest, Bajza u. 39.;
[2] Forensic Institute, Budapest, H-1363 Budapest, P.O.B. 31, Hungary;
[3] Department of Morphology, National Institute of Traumatology, H-1430 Budapest. POB. 21, Hungary.

Abstract

A large series of well-documented, naturally mummified individuals came to light during reconstruction work at the Dominican Church in Vác, Hungary in 1994-95. 265 individuals were buried in the crypt, and the remains of approximately 40 individuals' were contained in the ossuary. Citizens of the flourishing small town of Vác and some clericals were buried here, a detailed register of them was kept in the rectory. The very poor, but continuous ventilation through two long, narrow tunnels, and the protection against humidity provided by coffins being stacked in layers helped to preserve the anthropological and ethnographic material of the crypt.

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

Introduction

A large series of well-documented, naturally mummified individuals came to light in Hungary recently. In 1994-95 reconstruction work was in progress at the Dominican Church in Vác. The Dominicans historically specialized in health care and built and ran a considerable number of hospitals throughout their history. The church is still active, though it has had no connection with the Dominicans for two centuries now.

The construction of the church started in 1699. It gained the name Church of the White after the colour of the Dominican cowl. The crypts situated in its undercroft were a later development. Though the church was consecrated in 1713, the crypts were utilized for burials continuously only from 1731 until 1838, i.e. for more than a century.

Citizens of the flourishing small town of Vác and also some clericals were buried here; a detailed register of them was kept in the rectory.

Description and exposure of the site

In the 1990s the crypts had to be reconstructed. During the reconstruction, the Diocese gave permission to the Tragor Ignác Municipal Museum in Vác to explore the contents of the crypt. Work started at the end of November, 1994 and was executed in two phases. The first phase ended in early February 1995, and the second phase was a 10-day period of work in May 1995. The team was based on the staff of the Tragor Ignác Municipal Museum and was led by two ethnographers, MÁRTA ZOMBORKA and EMIL RÁDULY (Open-Air Museum of Szentendre). One of the present authors, ÉVA SUSA (Forensic Institute, Budapest), was the anthropologist member of the team. Unfortunately, the team had no archaeologist and therefore could not benefit from the methodical and practical knowledge of an expert familiar with the discovery of findings under similar circumstances. This unfortunate situation was brought about by the traditional division of labour in Hungarian museums. Archaeologists deal with findings up to the end of the 17th century, and anything after that time is the responsibility of ethnographers.

The crypts were the traditional burial site for a number of middle-class families. Painted and ornamented coffins were placed in rows, and the next layer was then placed on the coffins in the floor layer. Three and sometimes four layers of coffins were built up in the sequence of burials. The place was quite frequently visited, probably on holidays, by living family members. At the end of the 18th century, the emperor, Josef the Second, introduced a torrent of enlightened reforms. He banned almost all monastic orders by virtue of their laziness and waste of human effort, but a further of his regulations concerned burial habits in detail. One of his regulations forbade the practice of crypt burials and prohibited any further visits to such sites by anyone. However, the locals adhered to their traditions and a good number of burials were carried out in this way in the following decades as well. Finally, the steps leading to this crypt were bricked up in 1838 and these crypts were gradually forgotten.

The first crypt comprised a sizeable hall approximately 8 m long by 10 m wide, with a regular ground plan. It is approximately 4 m deep. In the middle, there is a strong pillar supporting some finely arched brick ceiling elements. A small corridor leads to a cavity containing an ossuary. The cavity was closed, more or less sorrounded by Medieval wall remains that are older than the present church. The size and shape of the cavity are quite unusual: It is 5 m long by 1 m wide at one end, but only 80 cm wide at the other. A large wooden box was precisely tailored into this place to contain the ossuary remains.

The first crypt (crypt I) has two small tunnels with a rectangular cross-section slightly slanting towards the surface. One of them runs up to the present surface. The other one probably connected the crypt to another, smaller underground crypt hall (crypt II). During the second phase, 110 individuals were discovered in the smaller hall, as access to it was gained through a hole drilled into its ceiling. The present church did not preserve any doors or steps leading into this place. The purpose of the small tunnel connecting the two crypts is not evident yet.

The two tunnels never provided access to crypt II after it was closed off by a wall, as both tunnels measure 60 × 30 cm. The tunnel connecting the two halls was also filled in with sand. These tunnels never provided sufficient air exchange with the outside world. The excavation process was started from dismantling part of one of the outer walls of the church. Steps were revealed behind this wall and these provided access to the large crypt hall and hence to the ossuary. These steps must have been the original way into the crypt (ZOMBORKA, 1996).

Climatic examinations

Following the first phase of the excavation process, the Hungarian Natural History Museum asked the Meteorology Department of Eötvös Lóránd University, Budapest to establish the climatic conditions in the crypt. One aspect was to establish the original microclimate that preserved the mummies. The other aspect was a very practical one. We needed guide-lines for the preservation of the findings. Climatic measurements were taken days before the second phase of the excavation and they lasted for a week in May. It was concidered that the opening of the crypt could not bring about decisive changes in its microclimate after a hundred years of regular burials and visits. The door of the undercroft had stood open quite frequently in all seasons without any deteriorating effects. There is no significant difference in the degree of mummification of the early and late buried individuals. The temperature and humidity exhibited only negligible variations and there is no reason to suppose that another season could have produced different values. While the outside temperature changed by 20 degrees during that week, the air temperature inside the crypt was virtually constant. The humidity too failed to follow the changes in the outside humidity.

The air temperature was measured at six sites in the empty crypt. The humidity was sampled at three sites, and the air pressure and air movement at one site each. Instruments were set up and the entrance was then bricked up again to establish conditions similar to the original ones. Traditional instruments (rotary termograph, hygrograph and barograph), and high-performance instruments (Rustrak humidity and temperature register and Dantec thermoanemometer) were used. All the instruments underwent calibration checks before the experiment.

The following climatic parameters were determined:

The temperature varied between 8 and 11 °C and there was no connection with the height of the measurement. The average 10 °C was practically constant, and falls into the range for most known caves and large underground cavities in Hungary. As the crypt had been closed down so long, it must have assumed the average underground temperature of its surroundings, as spring-water and natural caves do. This average for the 90 known natural caves in Hungary is 10 °C.

The relative humidity was found to be 90%.

This high humidity was very surprising. At such a humidity, fast decay might have been expected and not mummification.

The conditions in the crypt were determined by the complicated interaction of a number of factors. As the coffins were stacked in 3 and 4 layers, this layering prevented the formation of a unified microclimate and restricted humidity and local air motion changes. As most of the humidity originated from the soil, the coffins in the higher layers were subjected to much less humidity. The individuals in the higher coffins therefore were much better preserved.

Speleologists recently postulated the occurance of negative ionization in underground spaces, which might promote disinfection of the air in such places.

The air pressure reflected the outside air pressure: 991-1009 hPa.

The air motion was slight. Its average value was negligible.

Overall, it may be stated that the very poor, but continuous ventilation through the long, narrow tunnel, and the protection against humidity provided by the coffins being stacked in layers, helped to preserve the anthropological and ethnographic material in the crypt.

Conservation process

In work with mummies, it is always necessary to pay attention to fungi and other microorganisms.

Contact with mummies was restricted to that most necessary before fungial analyses were carried out. Breath-protection masks and gloves were used as a routine.

Microbiological samples were taken from the surfaces of the bodies. Their investigation did not demonstrate any sign of bacterial or fungial contaminations. Only the presence of some *Clostridium* sp., aerosporatic bacteria and ordinary mildew were found.

As no poisonous fungi were present, 3-minute X-ray (4.5 mA 75 kV/90 kV) doses were applied (SUSA et al., 1996).

The remains associated with each coffin number were stored in paper wrapping within wooden storage crates. After unpacking, all remains were superficially cleaned by vacuum cleaner.

Surfaces were rubbed with pure alcohol.

Anthropological material

The remains were naturally mummified. No trace of any artificial mummification technique could be found on any of the individuals.

They were all intact, with mummified intestines. Traces of medical dissectioning were evident in some individuals. One of them was a 10-year-old girl, (with a Y-shaped cut on her chest and an X-shaped cut on her abdominal region. The other was a young adult man (20 years old); his skull had been opened by the regular medical method. He

also had a cross-shaped cut on his chest, that has been sewn up later, during the sectioning process. Both of these cases provide evidence of 18th-century medical practices, none of which have anything to do with mummification.

Seventy per cent of all those buried were more or less mummified, while a number of the buried individuals were skeletalized.

Distribution of individuals buried in the crypt

265 individuals were buried in the crypt and the ossuary contained the remains of approximately 40 individuals.

There were 71 males and 77 females (148 altogether) whose ages at the time of death were known. There were 55 individuals of known sex, but unknown age. There were 24 individuals of known age but unknown sex. There were 38 individuals of unknown age and sex.

The age varied between 0 and 94 years.

The coffins bore many written data, including names, ages, and date of death. These, combined with the church register and/or with all the dresses, provided a database for establishment of the names, and of course the sex and ages of the individuals.

As no anthropological estimation of sex and age has been carried out yet, this distribution was based only on the register of the excavation process. Although 265 individuals is not a large sample, and they represented only some of the wealthier families, we believe that they reflect a more or less random sample of the Vác population. The crypts pose a great challenge as concerns the establishment of demographic patterns.

The men had a life expectancy of 44.62 years at birth, and the women an expectancy of 38.84 years. In 1900, the national average of the life expectancy at birth for males and females was 40 years. Life expectancy at the age of 20 was almost the same for both sexes: 33-34 years. In 1900, the national average of these values, for males and females, was 45 years in Hungary.

These data are of interest as concerns the advances in medicine and infant and maternal mortality that are held so dear nowadays. It seems that the low level of urbanization, and the slow but continuous economic growth in the 18th century, produced much better life expectancies than in modern times. This is all the stranger if we remember that Hungary participated in the continuous wars with the Prussia of Frederick the Great and later in twenty years of wars with revolutionary France and Napoleon.

References

SUSA, É., PAP, I. and JÓZSA, L. (1996): A váci múmiák antropológiai vizsgálata (Mummies from the 18th-19th Century, Hungary). – Magyar Múzeumok *2(1)*, 14-16.

ZOMBORKA, M. (1996): Vác, "Fehérek temploma" kriptafeltárás 1994-95 (The Exposure of the Dominic Crypt in Vác, the initial stages of the restoration). – Magyar Múzeumok *2(1)*, 3-7.