

Field and Technical Report

THE TULI MUMMY: A PRELIMINARY REPORT FROM NORTHEASTERN BOTSWANA

MORONGWA N. MOSOTHWANE

Department of Anatomy, University of Pretoria, P.O. Box 2034, Pretoria, 0001, South Africa
E-mail: nancy.mosothwane@up.ac.za

(Received May 2011. Revised November 2011)

INTRODUCTION

In October 2008, remains of what is now Botswana's first and currently the only mummified human remains were rescued from below the Cut Line Rock that separates the Loensa Property from the Tuli Game Lodge (TGL), Bobirwa District (Fig. 1). The remains came as chance discovery when the patrol staff at TGL stumbled upon what they thought was a buried animal killed by poachers (Mosothwane 2008). They went back to the site for further investigations and realised that they were dealing with a human grave and not a wild animal. The TGL management duly informed the Botswana National Museum. Fortunately, the site remained tightly secured while TGL was still sorting the logistics for the rescue operations and hence no further damage was caused to the remains. The game rangers concluded that since the grave was very shallow, some scavengers must have sniffed the remains and dug them out. Interviews with those present at the time of the discovery indicate that there were no features to indicate the presence of a grave.

The site is located in the eastern part of Botswana within the Northern Tuli Safari Game Range (NTSGR), between Nokalodi Bush Camp and the Tuli Safari Lodge Staff Camp. This area is about 20 km west of the Shashe-Limpopo confluence where numerous Stone Age and Iron Age sites have been documented. The confluence is also a point of demarcation between Botswana, South Africa and Zimbabwe. The site is located at the base of a more than 10 m high cliff which protects

it from direct sunlight and provides relatively stable conditions of humidity and temperature.

Some graffiti was noted almost directly above the grave indicating some previous visits to the site by members of present-day communities living within or just outside the game range. As a matter of fact, one of the employees of the Tuli Game Lodge who also comes from the neighbouring village of Motlhabaneng indicated that as children, they used to rest at the base of the very same cliff on their way back from school or herding animals. Despite the presence of graffiti on the rocks, it seems unlikely that anyone had known about the existence of the burial. It is therefore unclear why the grave was suddenly exposed after so many years.

A mummy is defined as animal or human tissue that partially or completely escapes the processes of decay after death (Aufderheide 2003; Rühli *et al.* 2004). The process of mummification can occur naturally or through intentional embalming of the body (e.g. Egyptian mummies). Desiccation is the drying up of tissue, especially skin, which survives active decay (Vaas 2001; Aufderheide 2003). Desiccation occurs in environments characterised by dry heat or very low humidity. Such conditions have to be extreme and stable over long periods of time. Remains preserved under these conditions can remain intact for hundreds of years.

In South Africa, where thousands of human graves spanning from the Holocene to present have been reported; only a handful are mummified. Examples include, individuals from

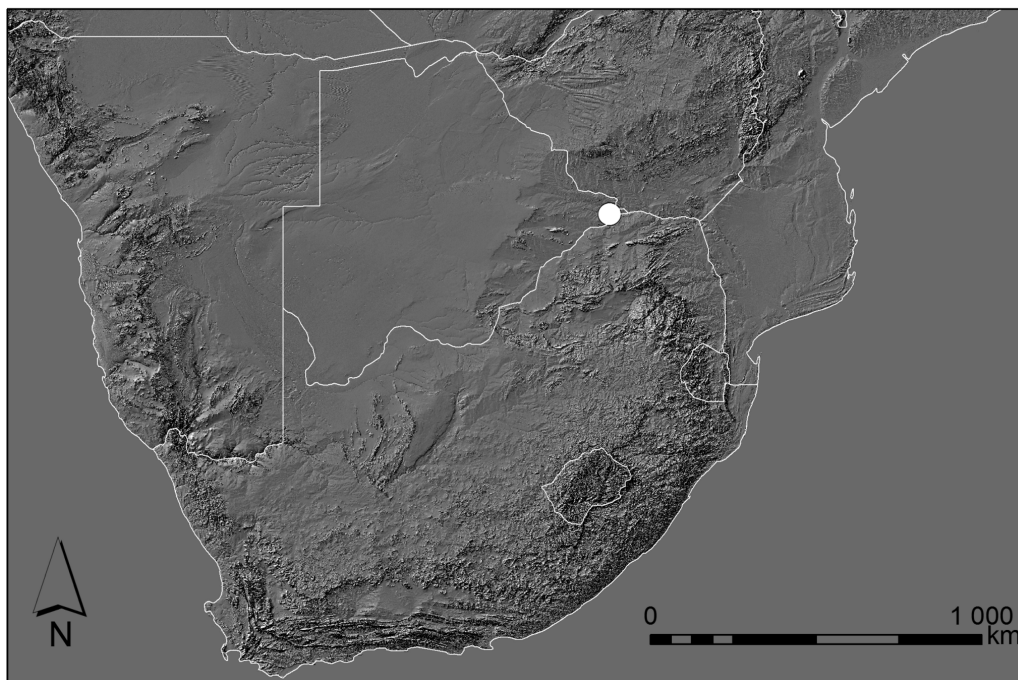


FIG. 1. Map of southern Africa marking the Cut Line Rock site.

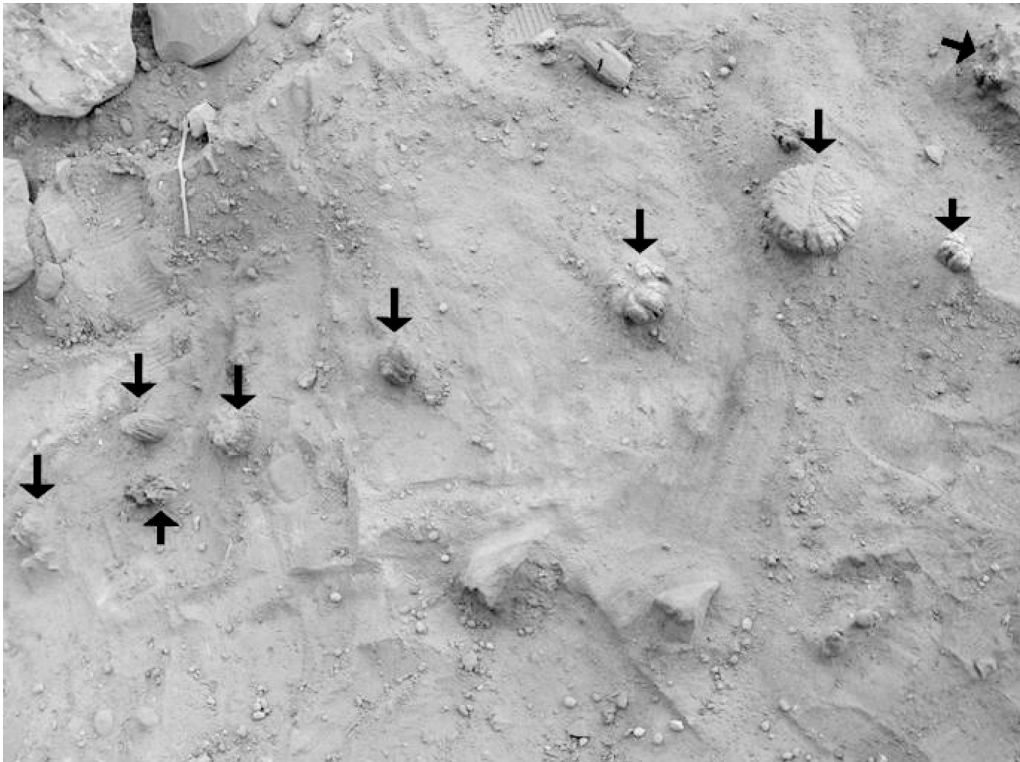


FIG. 2. Some well-preserved poles from a granary or house found at the site. The diameter of the largest is about 20 cm.

Faraoskop rock shelter (Manhire 1993), Steenbokfontein Cave (Jerardino *et al.* 2000), Eland Cave (Sealy *et al.* 2000), Kouga Mountains (Binneman 1999; Steyn *et al.* 2007) the Historic Cave in Makapan Valley (Esterhuysen 2006; Esterhuysen *et al.* 2009) as well a forensic case in which only the brain was mummified (Eklektos *et al.* 2006). Except for the forensic case, the most important common element shared by these cases is that the remains are from either rock shelters or caves which provide long-term stable conditions under which desiccation occurs.

THE ARCHAEOLOGICAL CONTEXT

Several archaeological sites ranging in dates from the Stone Age to Iron Age have been recorded within and just outside the NTSGR. However, very few have been surveyed and/or excavated and even fewer have been published. In general, archaeological research in the Tuli area has been limited compared to other parts of the country. The site presented here has since been named 'Cut Line Rock, Loensa Property.' It had not been identified prior to the discovery of the mummy. Therefore, the archaeological description of the site given below is limited to observations made on a rather brief visit to the site to rescue the remains.

Grass cover is generally sparse within this locality but it was observed that the site itself had no vegetation at all. The site was identified as an open patch of land covered with fine grey soil. It measured about 15 m in length and 10 m in width. The grave suggests that the cultural deposits are shallow, at most 50 cm thick. The site itself is on a fairly flat piece of land but it is likely that erosion and disturbance by animals have impacted negatively on the original horizontal and vertical dimensions of the site.

The soil is generally fine, ashy and loose and thus with good drainage. This is a good condition for preservation. On some parts of the site the soil appears reddish in colour but also very fine and loose. There are currently no temperature and humidity records for the site, but the general area is known to be dry and hot. Summer temperatures can be as high as 37°C.

A soil acidity test has not been carried out on this site. It was also noted that the base of the rock cliff where the remains were found never got exposed to direct sunlight as the rock itself provides shade.

Remains of what may have been a granary or a house were preserved on the ground about 10 m from the grave. These were in the form of poles embedded on the ground (Fig. 2) in a semi-circular shape. The poles are very well preserved as is expected on a site where natural mummification has been proved. The poles are a few metres from the cliff. Their preservation confirms that the cliff was instrumental in preserving the human remains.

In addition, a handful of small fragments of pottery as well as beads were found on the surface (Fig. 3). Most of the pot sherds were neither decorated nor diagnostic. The decorated sherds are comparable with those of the Khami facies of the Late Iron Age (Huffman 2007). Based on a very small ceramic assemblage recovered, the site was probably occupied between AD 1500 and 1800.

Fairly large-sized ostrich eggshell beads and a blue/green glass bead were also recovered within a few metres of the grave.

DESCRIPTION OF THE GRAVE AND THE REMAINS

The individual was interred in a fairly shallow grave (50 cm deep), about 2 m from the rock cliff. He had been placed in a horizontally flexed position with the head oriented to the east. The body had been wrapped in a black/brown animal skin, most probably a cow skin (Fig. 4). A long plant fibre was then used to tie the remains into what might have been deemed a portable bundle for burial. The animal skin had been turned inside-out so that the fur part was in direct contact with the human body. Though torn off and lost in some portions, the animal skin was also very well preserved.

Except for the right femur and some phalanges which were evidently removed by scavenging animals, the skeleton was complete. The phalanges were recovered a few metres from the

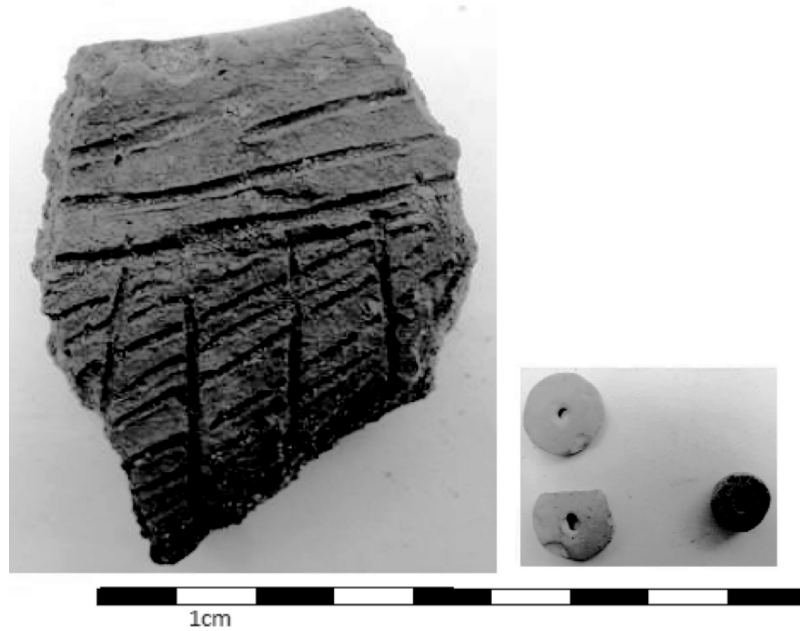


FIG. 3. A decorated potsherd and some beads from the site.

grave. Much of the skin was preserved and adhered to the bones. Some tendons were also noted. Hair and nails were also present. The hands are clamped together making it difficult to observe the palms but toe prints are still clearly visible (Fig. 5). The plant fibre rope used to tie the remains was also very well preserved. A well-preserved insect larva (probably *mophane* or related species) was recovered within the grave context.

Teeth show signs of moderate dental wear. In addition, there are small osteophytes on the lumbar vertebrae. The degree of dental wear and vertebral osteophytes noted on this individual are associated with adults aged 40–60 years (Krogman & İşcan 1986; Buikstra & Ubelaker 1994). These age indicators are limited but other methods such as rib phase analysis could not be used as they would mean disarticulating and damaging the

remains. Sex of the individual was determined from a partially exposed *os coxa* and facial hair. Its greater sciatic notch is narrow and deep and hence indicating the individual was a male. The beard and side burns around the chin and face also indicate a male individual. The kinky black head hair and beard is conclusively indicative of an individual of black African origin. Due to the complex nature of the burial position and preservation, it was not possible to measure any of the long bones in order to calculate the stature of the individual.

CONCLUSION

The mummy is of an adult black male aged between 40 and 60 years old at the time of death. The individual had been placed in a flexed position and was wrapped with a brown cow



FIG. 4. Mummified human remains from Cut Line Rock, Loensa Property, in situ.



FIG. 5. Toe prints and toenails preserved on the mummy.

skin. The skin and rope used to tie the body are in excellent preservation status. Interviews with village elders and owners of the Loensa Property and the Tuli Safari Lodge have all ruled out the possibility that the grave is recent. Evidence from the site indicates that the burial is probably associated with the Khami facies of the Late Iron Age. Thus, the site was probably occupied around AD 1500 to 1800. Further scientific analysis of the remains which would include radiographic and isotopic analysis will, hopefully, be conducted in the near future.

On any given day one cannot drive along the main roads of Botswana and not pass animals killed by collisions with motor vehicles. These road kills often display varying degrees of decomposition. Among these would be desiccated remains which in Setswana are known as *sekôkô* (singular). Thus, in general, the climate of Botswana favours desiccation of animal remains even in the open. However, these are often short-lived as subsequent decay of the skin sets in within a few days or weeks. This is due to the fact that long-term preservation of desiccated remains requires very stable conditions. The fact that the human remains, wood, animal skin, insect larva and other organic material survived for hundreds of years at this site can only be attributed to exceptional and very stable dry heat and good soil conditions.

The rescued remains are currently housed at the Botswana National Museum in Gaborone, in humidity-, light- and temperature-controlled storage facility. Since relocation to this facility, the remains have not shown any signs of deterioration.

ACKNOWLEDGEMENTS

My sincere gratitude goes to the management and staff of the Tuli Safari Lodge who engaged me in the rescue mission of this mummy. I also pass my gratitude to *dikgosi* and elders of Motlhabaneng who were willing to share all the history they knew of the area. Lastly, I would like to thank the Botswana National Museum for issuing the necessary documents to enable me to work on the rescue project. I am equally grateful to the reviewers of the manuscript whose comments have helped improve this paper.

REFERENCES

- Aufderheide, A.C. 2003. *The Scientific Study of Mummies*. Cambridge: Cambridge University Press.
- Binneman, J.N.F. 1999. Mummified human remains from the Kouga Mountains, Eastern Cape. *The Digging Stick* 16: 1–2.
- Buikstra, J.E. & Ubelaker, D.H. (eds) 1994. *Standards for Data Collection from Human Skeletal Remains*. Arkansas Archaeological Survey Research Series No. 44. Fayetteville: Arkansas Archeological Survey.
- Eklektos, N., Dayal M. & Manger, P.R. 2006. A forensic case study of a naturally mummified brain from the bushveld of South Africa. *Journal of Forensic Science* 51: 498–503.
- Esterhuysen, A.B. 2006. Let the ancestors speak: an archaeological excavation and re-evaluation of events prior and pertaining to the 1854 Siege of Mugombane, Limpopo Province, South Africa. Unpublished PhD thesis. Johannesburg: University of the Witwatersrand.
- Esterhuysen, A.B., Sanders, V.M. & Smith, J.M. 2009. Human skeletal and mummified remains from the AD 1854 siege of Mugombane, Limpopo South Africa. *Journal of Archaeological Science* 36: 1038–1049.
- Huffman, T.N. 2007. *Handbook of the Iron Age: The Archaeology of Pre-Colonial Farming Societies in Southern Africa*. Pietermaritzburg: University of KwaZulu-Natal Press.
- Jerardino, A., Sealy, J. & Pfeiffer, S. 2000. An infant burial from Steenbokfontein Cave, West Coast, South Africa: its archaeological, nutritional and anatomical context. *South African Archaeological Bulletin* 55: 44–48.
- Krogman, W.M. & İşcan, M.Y. 1986. *The Human Skeleton in Forensic Medicine*. Springfield: Charles C. Thomas.
- Manhire, A. 1993. A report on the excavations at Faraoskop rock shelter in the Graafwater district of the south-western Cape. *Southern African Field Archaeology* 2: 3–23.
- Mosothwane, M.N. 2008. Report on mummified human remains from Tuli Game Lodge. Report submitted to the Botswana National Museum, Gaborone.
- Rühli, F.J., Chhem, R.K. & Böni, T. 2004. Diagnostic paleoradiology of mummified tissue: interpretation and pitfalls. *Canadian Association of Radiologists Journal* 55(4): 218–227.
- Sealy, J., Pfeiffer, S., Yates, R., Willmore, K., Manhire, A., Maggs, T. & Lanham, J. 2000. Hunter-gatherer child burials from the Pakhuis Mountains, Western Cape: growth, diet and burial practices in the Late Holocene. *South African Archaeological Bulletin* 55: 32–43.
- Steyn, M., Binneman, J. & Loots, M. 2007. The Kouga mummified human remains. *South African Archaeological Bulletin* 62: 3–8.
- Vass, A.A. 2001. Beyond the grave: understanding human decomposition. *Microbiology Today* 28: 190–192.