Non-scientific Archaeological Recovery of Human Remains from an Ancient Well in India: Challenges in their Identification

J. S. Sehrawat and R. K. Pathak
Panjab University, Chandigarh, India

Forensic archaeology is a scientific discipline that can expose past crime(s) against humanity by recovering the bodies of victims and meticulously documenting any proof of torture, trauma or human rights violations. Archaeological recovery of human remains deposited in pre-existing structures or features such as wells, potholes, natural ravines, roadside trenches, sewage systems etc., have been reported from many sites worldwide. In April, 2014, thousands of human bones, teeth as well as a number of personal effects including coins, medals and beaded armbands were unscientifically excavated from a well—presumably dating from the nineteenth century—located under a religious structure in the heart a North Indian town. Without the assistance of scientific expertise or local administration, locals excavated the remains to verify whether the well containing human bones was a result of an event which had been documented in the written records. The unscientific excavation by locals with no formal qualifications in archaeology or anthropology, resulted in the enhanced damage and commingling of human remains limiting information on the minimum number of individuals, age-at-death, sex, pathological conditions, trauma, etc. which may have assisted in identification and a stronger corroboration with the historical records. This paper aims to emphasize that if scientific protocols had been followed—including the participation of a multidisciplinary excavation team with experts from diverse scientific disciplines like forensic archaeology, anthropology, geology, skeletal biology, history, forensic medicine etc.—data and context would have been greatly enhanced and information may have been obtained about the deceased individuals and whether they were the victims of crimes dating to the nineteenth century.

Keywords: forensic archaeology, excavation, human remains, well, challenges
Introduction

Humanity has witnessed several epidemics, natural disasters, wars, conflicts, geno-
cides, terrorism, and other atrocities, resulting in the disappearance and deaths of
millions of people, and the discovery of thousands of unidentified bodies buried in
mass graves. Mass graves from war-related conflicts and/or crimes against humanity
have been reported from different parts of the world (Steadman and Haglund 2005;
Tuller and Duric 2006; Tuller et al. 2006; see also Groen et al. 2015). These have been
found in Bosnia (Berman 2003; Sterenberg 2009), Iraq (Human Rights Watch 2004;
Congram and Sterenberg 2009), Serbia (ICMP 2004), Kosovo (Jennings 2009), Guate-
mala (Flavel and Barker 2016), and in Latin America particularly with the start of the
work in Argentina in the 1980s onwards (Fonderbrider and Scheinsohn 2015).

Pre-existing features or structures such as abandoned wells, waterways, sewage
systems, potholes, caves, pits, natural ravines, roadside trenches, etc., have remained
amongst the preferred sites for clandestine disposal of human cadavers. Burial of
human remains at such sites have remained a common phenomenon throughout
human history as they serve as relatively easy, convenient and obvious sites for
deliberate burials; particularly in situations of war-related conflicts or crimes
(Human Rights Watch 2004; Manning 2000; Simmons 2002; Gómez-López and Patiño
Umaña 2007; Wright 2010; Etxeberria et al. 2014, 2015; Ceker and Stevens 2015).
Human remains recovered from sites including wells (Brothwell 1965; Robbins and
Louis 1986; Jessee and Skinner 2005; Juhl and Olsen 2006) have been found relatively
poorly preserved, badly damaged, commingled and, hence difficult to identify from
a forensic anthropological perspective (Esiyok et al. 2006; Slaus et al. 2007a). Levine
and colleagues (1984) were the first to publish a forensic anthropological case report
about excavation and recovery of a body from a well. Post-conflict recovery of human
remains from wells have been reported from a number of countries like Spain, Guate-
mala, Croatia, Kosovo and Iraq (Owsley et al. 1996; Slaus et al. 2007a, 2007b; Hirz
1999; Lecomte and Vorhauer 1999; Etxeberria et al. 2014, 2015; Flavel and Barker
2016), however, very few such sites have been reported from India, which witnessed
a number of wars and war-related conflicts throughout its history.

This article focuses on the recovery of human remains from a well beneath a reli-
gious structure in Ajnala (northern India). These remains date from the nineteenth
century, during British rule in India, and no others have been reported from any
part of the country. In this article, the authors report the discovery and unscientific
excavation of human remains from this well in Ajnala and provide preliminary infor-
mation on the remains themselves and future challenges in view of identification
and the limitations of the remains having been excavated in an unscientific manner.

The discovery and excavation of human remains in the Anjala well

The written records (Cooper et al. 1858) and oral history of human burials in the well
under a religious structure in Ajnala ignited the ethical conscience of some local peo-
ple inspired them to excavate the remains in an attempt to corroborate or nullify the
crime against humanity as mentioned in a book by Cooper et al. (1858). The book men-
tioned that some “Poorbeah” soldiers (belonging to Bengal, Bihar and Uttar Pradesh)
had revolted against their British commanders in July 1857. The day after the revolt, about 282 of these soldiers were captured and most of them executed and their bodies buried in a nearby abandoned well. Socio-political sensitivity of the incident as well as sanitary concerns were the reasons cited for immediate disposal of cadavers in the well. A religious structure was built over the well but was moved prior to the start of excavation. Seemingly, due to the reluctant response from the local administration, the entire excavation was executed by amateur archaeologists in a very short period of time; resulting in heaps of badly damaged and commingled bones from a number of individuals.

Some historians believe that the recovered human remains belong to the individuals killed during Indo-Pakistan partition conflicts in 1947 when India and Pakistan received their independence from British rule. Others believed that a number of human cadavers were dropped into the well prior to or after the mentioned incident or even before the partition genocides of 1947. Huge media coverage and public opinion raised the need to analyse these remains in order to answer the basic question of “to whom do these remains belong.” Thus, the most immediate reason to excavate the remains from the well was to scrutinize the veracity of the written record. Forensic anthropological examination of these remains (including their personal effects) was expected to help in the geographical provenance of the individuals, the establishment of biological identity and the cause and manner of death by utilizing various available scientific methods and techniques.

During the first visit to the site, the authors found that the badly damaged and commingled human remains were contained in wooden boxes covered with sliding glass lids. Due to the prolonged exposure to heat, humidity and wet weather at the site, the bones became significantly weathered and more fragile. The teeth and intact skeletal elements were segregated out, properly packed in airtight boxes (cushioned with cotton and thermacon sheets) along with the objects and personal effects, which included coins, medals and bracelets which were packed separately in airtight steel boxes. All the material were carefully transported to the laboratory at Panjab University, Chandigarh (India) for further anthropological analyses.

Analysis of the site and the recovered human remains

Figure 1 shows the morphology of the bricked well before and after its excavation, showing its sand-filled peripheral surface (A), the height and thickness of the sandy layer removed from its periphery (B) and its boundary walls (C), the latter allegedly damaged during the disposal of the bodies into the well. The boundary wall was found damaged particularly in its north-eastern and eastern sides from where the dead bodies were allegedly dropped as reported in the book by Frederick Cooper (1858). The presence of the well below the demolished structure and its damaged walls somehow confirm the written records. The size of the boundary wall bricks reflect the historical date of the well. The actual boundary surface of the well, which is more than 14 feet wide, became visible when a sandy layer of about 11 feet thick was removed from underneath the floor of the religious structure which was built over it. The first human remains appeared when the well was dug approximately 8
Figure 1. Geomorphology of the well (before and after the excavation).
feet down from the original surface level and a nearly complete skeleton was uncovered. Seven more skeletons (in a vertical standing position) were found by the feet of this first skeleton. The recovery of the remains continued up to a depth of 14.2 feet, a depth where the sterile layer of soil was reached. Similar wells have been found in Spain and Guatemala where multiple bodies were found deposited during Spanish civil war and post-war conflicts, respectively (Etxeberria et al. 2014, 2015; Flavel and Barker 2016).

Figure 2 shows the human remains of multiple individuals found in-situ. The commingled nature of the skeletons, positioned in a haphazardous manner can be interpreted as a deposition in one single event and an unceremonial mass burial. The overlapping, disorganized and diverse positioning and orientation of individual skeletons and their straitigraphic sequence reemphasize a burial during one single event.

The recovery of the human remains, the majority of which were well preserved and in particular the teeth, has the potential to provide much information on who these individuals were. Unfortunately, the potential is limited as the excavation was not done to a scientific standard and without the presence of anthropologists. Figure 3 shows the outcome of the unscientific excavation of human remains from the well. The heaps of damaged human remains discouraged the ultimate purpose of their excavation, which would have been understanding the context and history in which these remains had been disposed and a general understanding the identify of those individuals buried in the well. The excavation would have also benefited from forensic archaeologists, especially those with experience in mass
graves, who have the expertise to carry out effective stratigraphic exhumation of human skeletal remains from most challenging depositional environments, even with limited resources as was the issue in the present case (Flavel and Barker 2016). It would also have ensured any possible chain of custody which may have been necessary in the identification of the deceased.

The shape, size, degree of skeletal maturity of the different skeletal elements show that the remains belong to adult individuals. Only intact skeletal remains and teeth were segregated to maximize the chances of forensic anthropological identification of these remains. Only teeth have been found in fairly good conditions and available after the non-scientific recovery and handling of the remains which, in turn, are expected to facilitate potential information with regard to geographic origin, disease and health status, dietary habits, minimum number of individuals and a lot of potential for molecular and other chemical analyses (Meier-Augenstein 2012; Zinni and Crowley 2013).

Figure 4 shows that all the skulls have damage to the frontal bone with fracture lines radiating towards the left orbit. Pending further study, this may be interpreted as blunt force peri-mortem trauma. Associative projectile evidence in the form of cone-shaped stone bullets was also found with the remains. Some stone bullets were found still embedded in the frontal and temporal portion of some of the broken cranial segments. The detailed evaluations and interpretations of such cranial traumatic injuries (microscopic examinations) are expected to reveal the peri-mortem fate of the victims or the post-mortem taphonomic factors which have caused this damage, including any damage during excavation. The gross anatomical features of some intact skulls (as shown in Figure 4) are distinctly different and supposedly belong to individuals of different sex, age or racial group. No definite opinion can be given at
this juncture about the sex of the victims, merely on the basis of some morphological cranial or skeletal features as the pelvic bones were not available for study (the recovered crania are very few in number and it is very difficult to opine about sex of individuals on the basis of the badly damaged skeletal elements, since not a single complete pelvic bone is available for this purpose).

Numerous personal artifacts like copper and iron wrist bracelets, jewellary items, pocket knives, gold necklace pieces, coins and medals (indented with the Queen’s portrait and the year), beaded arm-bands etc., were also recovered associated with the human remains inside the well (Figure 5). The coins and other personal artifacts were contemporary to the reported incident. A few artifacts, like beaded arm bands or wrist bracelets indicated their affiliation to the individuals from Bengal, Bihar and Uttar Pradesh as most of these articles are commonly used by people from these Indian states even today. Some hand and foot phalanges still had corroded copper and iron rings. These personal effects are expected to help reach some valid conclusions about the identification and date of the remains.

In total, more than 6000 teeth were recovered. No sign of dental treatment works (like fillings or restorations) were noticed in any tooth (displaced or still intact in jaws). Pulp cavities of many teeth were found intact as can be seen in the radiographs (Figure 6A), and are therefore suitable for extraction of DNA. Blackish-brown and reddish-brown stains present extraneously on very few teeth indicated the use of...
tobacco or betel-nut or “pan masala” chewing by some of the victims (Nelson et al. 1999) (Figure 6B).

Future challenges in identification

Forensic anthropologists can significantly contribute to the recovery, analysis and identification of archaeological human remains by following an osteo-bio anthropological approach for estimating the age-at-death, sex, ancestry, stature, pathology, ante-mortem or peri-mortem trauma, surgical interventions etc., of such remains to provide information on the identity and possible manner and cause of death. The use of archaeological techniques and archaeological application and interpretation of stratigraphy might have helped a more successful recovery of the remains from the well and thus, recreate the deposition event(s).

There are certain challenges in establishing the identity of the remains:

1. Unscientific excavation by local people resulted in heaps of badly damaged skeletal remains. The majority of important bones for biological profile including the pelvis and the skull were found missing or badly damaged. If the human remains were excavated in a scientific manner under expert guidance and supervision by trained archaeologists and/or forensic anthropologists the information would have been maximized and the possible identity of the individuals facilitated. Only teeth and few intact skulls are available to provide some clues about the identity of the victims.
2. Non-availability of any biogenic or documented ante-mortem information about the victims remain as the main hurdle in establishing the biological identity of the exhumed human remains from the well.

3. A preliminary minimum number of individuals (MNI) estimate calculated from the available dentition and a number of skeletal elements doesn’t correspond to the circa 200 figure mentioned in the written records. A more thorough analysis may provide a better calculation of the MNI, but the numbers are still large and not too far the original estimate.

4. There is no way to confirm whether some bodies were deposited in the well prior to or after the disposals of the bodies reported in the 1857 AD incident.

5. Given the lack of scientific input in the recovery of the remains, the assessment of peri-mortem trauma (vs post-mortem trauma) may be furthered challenged (Konecna et al. 2012).

Conclusions

The role of a physical anthropologist during excavation of human remains is crucial (Ubelaker 1989, 2009). The excavation team must also comprise historians, archae-
ologists, anthropologists and at times forensic pathologists in order to obtain an integrated and comprehensive assessment of the remains from a number of different perspectives. The knowledge about the exact position, location and orientation of the bones and their associated artifacts could have revealed the sequence of events and further assist the identity of the victims and their cause of death. Improper excavation techniques or collection procedures made it very difficult, if not impossible, to reconstruct perimortem events. Better results could have been expected through preserving the scene by limiting accessibility, improving documentation, recovery, packaging of the remains and skilled interpretation of the excavated physical evidence. An interdisciplinary team including the valuable presence of forensic archaeologists during the excavation would have highlighted the importance of archaeology in verifying executions, minimum number of individuals within the well, and obtaining evidence for human rights violations. Due to the intrinsic difficulties associated with the recovery process from such complex sites and the relatively poor or fragmentary preservation of the remains, the information is much lower than otherwise could have been retrieved (Slaus et al. 2007a, 2007b). Who the individuals were and how they got there remains a mystery even after preliminary forensic anthropological analyses, but may be partly answered with further analyses, budget and resources permitting.

From the preliminary analyses of all the available evidences it cannot be ruled out that some bodies might have been already present in the well (fallen accidentally or thrown deliberately) or disposed of after the reported incident in 1857 AD, after which the well would have been backfilled with sand and covered by a religious structure.

**Objectives to be fulfilled**

Future work is necessary on these remains, taking into account (forensic) anthropological input as well as the study of artifacts where possible. Although the majority of remains have been disposed of in the river Ganges for the sake of performing last rites for the victims, some have been retained—such as the dentition—for further study. The objective of the study would be to establish as much as possible the identity of the victims in the well and whether their fate relates to the 1857 AD events. In particular, questions to address are the following:

1. To establish the identity/provenance of the human remains from the available dental and skeletal material.
2. To identify any traumatic injuries or taphonomic damage to the recovered human remains.
3. To suggest the minimum or most likely number of individuals based on available dental and skeletal evidence.
4. To extract, quantify and amplify mtDNA from teeth and compare with present day DNA databases of different Indian population groups.
5. To opine about the geographic origin, health and disease conditions, lifetime nutritional or dietary status of the victims from macroscopic and stable isotope analysis of the teeth and bones.
These objectives are expected to address the identification, manner and cause of death, living conditions and geographic affiliations of the victims in an attempt to clarify:

1. The date of the remains.
2. The (minimum) number of individuals interred in the well.
3. Whether the remains belong to North Indians (local area of site) or the individuals of Bengal, Bihar and Uttar Pradesh as reported by written records.
4. The demographic profile and physical features of the deceased.
5. Whether any trauma to the remains may be relevant to crimes against humanity.

It may be made clear that the artifacts, in particular the coins and medals found associated with the remains, have mint dates prior to 1857, and no other physical evidence was available to the authors that may support any claim of them dating after 1857. Certainly, all the coins and medals had portraits of Queen Victoria and the year they were made implying that these personal effects were dated to British Empire in India. However, it cannot be verified whether these coins and medals were possessed by the victims at the time of their death or whether they were thrown into the well prior to the reported incident. It cannot be ruled out that artifacts may have been thrown into the well much before or after the disposal of the bodies. As the well was reportedly used as an existing structure well before the disposal of human cadavers; the dating of the well (probably from bricks) is not expected to help in the identification of the deceased. The authors do not aim to provide names to the victims or designate them as soldiers or otherwise. Keeping in mind the commingled nature of the remains; non-availability of demographic credentials of missing persons and the absence of direct descendants; the positive identification of the victims seems a distant possibility even with DNA analyses.

Conflict of interest

The authors declare that there is no conflict of interest with regard to publication of this article. Permissions have already been obtained from the concerned government department for publications of preliminary results vide letter no. ARCH/DCAM/2014/5241/dated:27.7.2014 and 3846/dated: 07/6/2016; and the same has been duly acknowledged in the manuscript.

Acknowledgements

The authors are very grateful to the state government for entrusting them with the biological identification of the remains excavated from this well. We also gratefully acknowledge the university authorities, particularly Prof. Arun Kumar Grover, Vice-Chancellor, Panjab University, Chandigarh, for providing space and available facilities to us to undertake this sensitive research of national importance. The financial supports provided in the form of “BSR-Start-Up Grant” by UGC, New Delhi vide Grant No. F.30-54/2014 (BSR) helped the first author in the preparation of this article.
References


Cooper, F. 1858. The Crisis in the Punjab: From 10th of May Until the Fall of Delhi. London: Smith Elders & Co.


ICMP. 2004. “Summary report on the forensic monitoring activities relating to the excavation and recovery of human remains from several related features located at Batajnica, Serbia and Montenegro. August to December 2002.”


Non-scientific Archaeological Recovery of Human Remains from an Ancient Well in India


© Equinox Publishing Ltd. 2017


