



Historical forensic pathology – a “new” discipline

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Those who fail to learn from history are doomed to repeat it.

Sir Winston Churchill (1874–1965)

One of the failings of modern forensic pathology is that there is often very little effort made to draw upon the rich history that has been endowed by previous generations of practitioners. For example, the complex analyses and academic discourse that distinguished nineteenth century European forensic practice still stand as gold standards in some areas, however, many of the major pathologists of that time have been forgotten, along with their considerable legacies. The same lack of engagement often applies to historical events where standard documentation and conclusions are accepted despite the fact that the application of modern techniques and review of primary sources may provide an opportunity to shed new light on what actually occurred, and/or give us an increased appreciation of the complexity of certain events. The following review of a short series of papers provides an insight into the range of historical questions and issues that can be explored and analyzed under the umbrella of historical forensic research.

One of the idiosyncrasies of modern day Australia is the belief that a group of nineteenth century criminals, known as “bushrangers”, were somehow noble individuals who resisted the oppressive yoke of colonial governments to act as surrogate “Robin Hoods” [1]. However, the truth is somewhat different as the legend of Robin Hood clearly did not specify stealing from the poor and keeping it for yourself. Reading

the infamous Jerildaree letter by one of the better known bushrangers, Ned Kelly, reveals passages such as this:” I would have scattered their blood and brains like rain. I would manure the Eleven Mile with their boated carcasses”, and elsewhere “... pegged on an ant bed with their bellies opened their fat taken out and rendered and poured down their throat boiling hot” [2]. With passages such as these is there any wonder that modern psychiatric assessment has concluded that he was a classical psychopath [3]?

Forensic pathology and ancillary techniques can, however, be used to clarify some of the historical records surrounding the bushrangers. For example, the shooting of Ben Hall by members of the New South Wales Constabulary on May 5 1865 at Billabong Creek outside the township of Forbes has been shrouded in controversy (Fig. 1). On one hand popular legend attests that the defenseless Hall was shot while sleeping, immortalized in the poignant words of the ballad “The Streets of Forbes”. This contrasts with the detailed police report of him being shot while trying to escape, after being told to surrender (Fig. 2). Analysis of a gun belt purportedly worn by Hall was recently undertaken to see if it held any clues that might throw some light on this issue [4]. Remarkably this examination revealed a nineteenth century gun belt with a hole surrounded by both projectile and primer residues, with dimensions that corresponded very well to the police account. This of course is not “proof”, but it is very good supportive evidence, of the veracity of the police record.

A LiDAR scanning system was utilized at the site of the Wantabagery siege where another bushranger, Captain Moonlite, was involved in a shootout between his gang and the police, which resulted in the death of Constable Webb-Bowen [5]. The LiDAR system captures millions of recorded points which can then be used to reconstruct scenes enabling the virtual exploration of a 3-dimensional model. By populating the “scene” with buildings and the protagonists (Fig. 3), and reviewing the constable’s autopsy findings, it was possible to finally determine who the shooter was after over 130 years; it was the youngest gang member, Gus Warneke, aged 15 years, who also died at the scene.

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Fig. 1 Ben Hall’s grave in the township of Forbes, New South Wales, Australia

Paddy Kenniff was hung on January 12 1903 and his brother Jimmy sentenced to life in prison for the murder of Constable Doyle in the remote Carnarvon Ranges of Central Queensland. Doyle’s burnt and fragmented remains were found with those of the local station manager, Albert Dahlke, in horse saddle bags at Lethbridge’s Pocket. One of the key points made by the prosecution was that the bodies of the two victims had been dismembered by the two “ghouls” before being burnt. A controlled experiment utilizing pig carcasses, however, demonstrated that dismembered remains virtually disappeared when left on a fire, compared to a whole carcass which closely resembled the material described in the saddle bags [6]. Although the reasons for the incineration and subsequent idiosyncratic “disposal” will probably never be determined, it appears most likely that post mortem dismemberment did not occur.

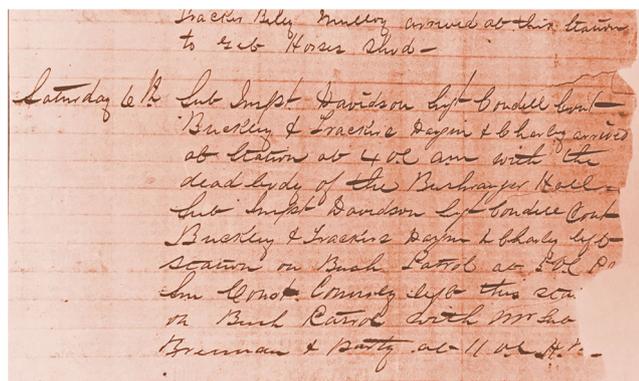


Fig. 2 Original documents detailing the return of Sub-Inspector Davidson with Ben Hall’s body at 0400 on Saturday 6th May 1865 (Forbes Historical Society)

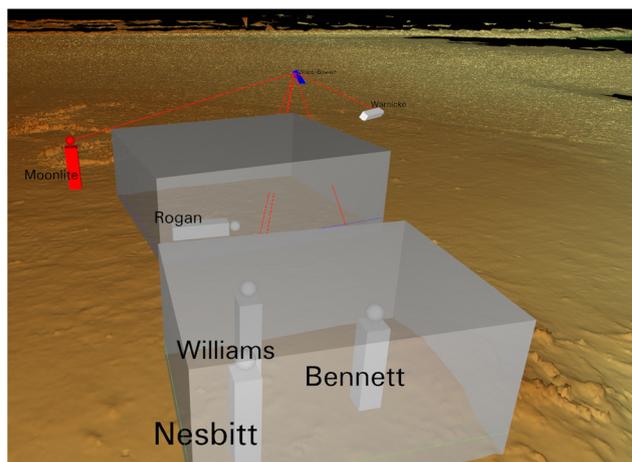


Fig. 3 Using a LiDAR-derived digital terrain model at the Monash University “CAVE2” facility with removal of vegetation and addition of buildings enables lines of fire to be established for the Wantabagery siege (Monash Immersive Visualization Platform, Melbourne, Australia)

Review of the 522 volumes of the Tasmanian Convict Department from 1803 to 1893 held by the Tasmanian Archive and Heritage Office (TAHO) (Fig. 4) provides an interesting insight into the British colonial prison system [7]. Upon arrival convicts were allocated to work for settlers or in probation stations around the island (Fig. 5) and had relatively low death rates, in part due to improved access to medical care [8]. Of particular forensic interest, however, has been an analysis of some of events which occurred at the remote Sarah Island penitentiary in Macquarie Harbour on the west coast of the island. The island was known for the extreme harshness of both the environment and punishments, and so prisoners resorted to a variety of different methods of escape. One such method involved a lottery whereby straws were drawn to see who would be killed, who would perform the act, and who



Fig. 4 A collection of some of the volumes containing detailed records of convicts who were transported to Van Diemen’s Land in the nineteenth century (Tasmanian Archive and Heritage Office, TAHO, Hobart, Australia)



Fig. 5 The ruins of the convict barracks at Highfield in the far North West of the state were part of the Van Diemen’s Land Company holdings

would act as witnesses, thereby ensuring that members of the group would leave the island either permanently, or for some time to attend the trial in Hobart Town. Using the system in this manner ensured that the death of the perpetrator by execution would inevitably occur, and so represents a variation on the modern “death by cop”, a type of nineteenth century “death by gallows” or judicial murder–suicide [9]. An alternative strategy was used by Alexander Pearce in two separate escape attempts from the island when he killed and ate his fellow escapees. This constitutes a very rare form of anthropophagy, that of serial opportunistic cannibalism [10].

Examining records archived by universities may also shed light on historical events. For example, documents in the pathology archives of The University of Adelaide relate to the Egyptian Expeditionary Force which operated in the Middle East in World War I. A large number of young Australian men served in both Middle Eastern and European theatres of war during the conflict (Fig. 6). Examination of the University records reveals the very high rate of infectious disease amongst the troops and shows very clearly the significance of illness in terms of support staff, logistical needs and loss of active fighting troops compared to injuries and deaths from enemy engagements [11].

Contemporary toxicological and DNA analyses can also be applied to historical remedies. For example, analyses of two potions prepared by an early twentieth century Afghan herbalist, Mohamet Allum, revealed only herbal components such as wheat, nettles, passion flower and bear berry. There was no evidence of adulteration with drugs such as cocaine, cannabis and opium that were commonly used in more main-stream pharmaceutical preparations of the time [12].

The development and refinement of modern scientific techniques has enabled very sophisticated analyses to be undertaken. A good example of this occurred during the examination of skeletal remains that were found in 2012 at the site of

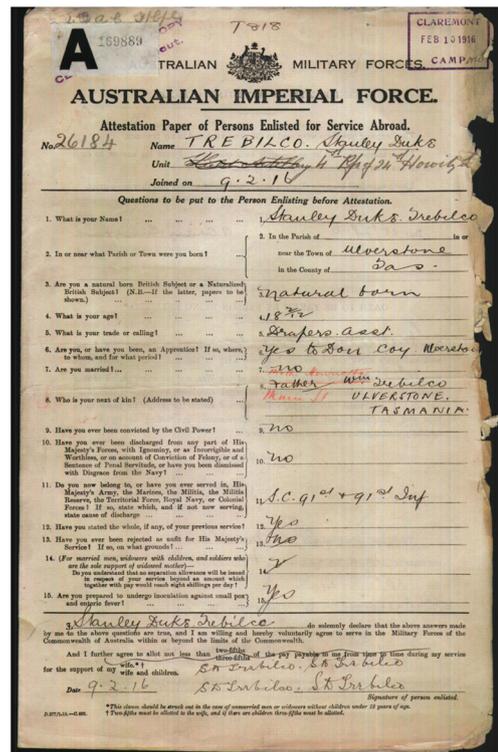


Fig. 6 The original enlistment paper for Stanley Duke Trebilco, an Australian soldier who saw service on the Western Front in World War I

the former Church of the Greyfriars in Leicester, United Kingdom. Use of modelled radiocarbon dating determined that the remains were from 1456 to 1530 and ancient and modern DNA analyses confirmed that the skeleton was indeed



Fig. 7 A portrait of Richard III the last Plantagenet King of England (Society of Antiquaries, London)

that of the last Plantagenet King, Richard III [13] (Fig. 7). Further examination of the bones with high-resolution micro-CT imaging of injuries provided a precise overview of the injuries that the king had sustained, with lethal blows occurring to the head which had apparently not been protected by a helmet [14].

Perhaps further investigations could now be undertaken of the bones of two children discovered in the Tower of London in 1678 which were assumed to be the remains of Edward V and Richard, Duke of York, the nephews of Richard III. Legend has it that they were dispatched by their uncle to facilitate his path to the crown. Although an examination of the bones in 1933 concluded that they were indeed the princes [15], modern DNA technology could greatly assist in determining whether this conclusion was correct [13]. Another interesting historical question involves the remains of General Custer's men who died at Little Big Horn in June 1876 [16]. Questions that have been raised concerning the manner of death of these troops [17] could be resolved by examination of the remains for black powder residues [18].

Thus, re-examination of archival material, records, remains and data, with use of modern analytic techniques, may serve to clarify many more questions that have been handed down from previous times. Churchill in stating that "history will be kind to me as I intend to write it" very clearly demonstrated the truly subjective nature of many of our historical records. Objective scientific review and testing with modern forensic techniques may, therefore, be very useful adjuncts to more traditional historical methodology.

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