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FORENSIC ARCHAEOLOGY AND FORENSIC TAPHONOMY EXPERIENCE IN THE UK: IMPLICATIONS FOR THE RECOVERY OF PHYSICAL EVIDENCE

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ABSTRACT

Forensic Archaeology is a relatively new discipline in the UK. Since the late 1980's it has been increasingly recognised by Senior Investigating Officers (SIO) that archaeologists have a contribution to make in the search and recovery for buried evidential material. Although this is usually thought of in terms of the recovery of buried human remains, it may also include other buried items such as weapons, ransom money, etc. Indeed, the forensic archaeologist may have a role to play in any scenario where there is evidential value in identifying a stratigraphic relationship between evidence, for instance a body and associated materials with soil, branches, or any other covering material that has been used to conceal it. Through the development of Forensic Taphonomy, using both information from cases and experiments involving pigs as human body analogues it has been possible to refine our understanding of factors that will promote and retard decomposition under both climatic and micro-climatic conditions encountered in the UK. This paper will review the development of Forensic Archaeology in the UK, experimental approaches to investigating the taphonomy of inhumation burials, and the implications they have had for search, recovery and interpretation of remains.

FORENSIC ARCHAEOLOGY IN UK

Forensic archaeology applies techniques of search and recovery that were originally developed to investigate actions in the distant past to the recent past in a legal context (Townley and Ede 2004: 365). A key skill that archaeologists bring to a forensic investigation is their knowledge of the mechanics of hole (grave) digging and backfilling, and how these processes relate to buried contents. In recent years UK police forces have acknowledged there are considerable advantages to employing a forensic archaeologist to search for and recover buried evidence, whether the target of interest is a body, concealed weapons, or valuables. Forensic archaeology as practiced in the UK is essentially a scene based discipline with a close working relationship between the archaeologists and other scene based...

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specialists, including: Crime Scene Investigators, Forensic Scientists, Forensic Entomologists, Forensic Botanists, etc. These specialists must be able to work together, and be aware of the implications of their actions/sampling procedures on each other’s work. In recent years the number of specialists needing access to a murder scene has increased, often resulting in a change to the pace of the proceedings. In the past the primary focus would have been removal of the body at the earliest opportunity for a post-mortem. With the increasing emphasis on scene-based evidence, more work is undertaken at the scene, often before removal of the body. Forensic archaeology is part of this trend, along with the rising importance of the Crime Scene Manager to co-ordinate specialists at major scenes (Pepper 2005: 111).

With the increased use of specialists, often in rapidly developing disciplines, it is essential that limits of competence are mutually recognised. While Forensic Archaeologists will have experience of handling human remains that are both fleshed and skeletonized, assessments of bone, e.g. to determine if the remains are human, then an appropriately qualified specialist should be called in, ideally a Forensic Anthropologist. In the UK the Council for the Registration of Forensic Practitioners (CRFP) has been set up to define levels of competency in a range of forensic disciplines, as well as to clearly demarcate spheres of expertise (Hunter and Cox 2005: 15). An individual practitioner’s registration is based on a combination of qualifications and more importantly direct case experience. It was a deliberate decision to distinguish between Forensic Archaeology and Forensic Anthropology, which in the UK have different formal training routes and post-training experience. While it is possible for an individual with the appropriate skill sets to register as both as an Archaeologist or an Anthropologist, with most specialists the role is clearly differentiated. Role differentiation is important as a number of recent cross discipline workshops and case reviews have identified potential pitfalls due to mission “creep” amongst forensic specialists (e.g. Geoforensics and Information Management and Crime Investigation network meeting, Aberdeen, May 2006). This is more than simply a case of not treading on colleagues toes, but rather ensuring that expert opinion is given by those whose qualifications and experience are appropriate and that evidence presented by them to a court will be accepted.

DEVELOPMENT OF FORENSIC ARCHAEOLOGY IN THE UK

Police teams have been digging up human remains since at least the early years of the 20th century. The investigation and interpretation of these remains throughout most of this period were made by the police at the scene and forensic pathologists at the post-mortem. In 1910 Hawley Harvey Crippen murdered his 2nd wife Cora Turner (AKA Bell Emmore) and buried her remains in the cellar of their house at 39 Hilldrop Crescent, Holloway, London. The remains were dug up by the investigating team and there are pictures of policemen in shirt sleeves with spades and a wheelbarrow, as well as the partially excavated grave site itself, in the Metropolitan Police archive. The remains of Cora Turner and the source of the poison were identified by the eminent London Pathologist Sir Bernard Spilsbury (Brown and Tullett 1952).

In July 1942 a workman who was helping to demolish a bombed Baptist church in Vauxhall Road, South London found a skeletonized body under a stone slab. There were remnants of flesh adhering to the bone, but pathologist Keith Simpson examined the body and ruled out the possibility it was a bomb victim for several reasons. Firstly, the slab had been set in the floor, not deposited by the explosion. Just as in modern scene the context of the body is important. Secondly, the body had been dismembered in a manner not consistent with blast injuries; of which a pathologist working in London during the height of the blitz would be very familiar. He also ruled out an ancient burial, although his reasoning might not stand up to modern experience—he identified a dried womb. Based on archaeological excavations of 18th and 19th century soil and crypt burials conducted from the 1980s onwards, we now know it is possible for soft tissues to preserve over considerably longer time frames (Molleson and Cox 1993; Reeve and Adams 1993; Janaway 1998).

Indeed, the problem of micro-climates outside the normal experience of forensic pathologists can still lead to inaccurately short post mortem interval estimations. The body of the woman found in the church was identified by her dentist as that of a 47 year old woman who had gone missing 15 months previously (Simpson 1980: 58-63).

A year later, John Reginald Halliday Christie buried the first of six bodies disposed of in the garden and house of 10 Rillington Place, London. The first two bodies were buried in the garden and were skeletonized by the time they were dug up 10 years later (Simpson 1980: 236). The other four had only been dead for a matter of months and hidden inside the house before they were found in 1953. Again the police recovered the remains and the examination largely fell to the pathologists.

Perhaps one of the largest investigations of the 20th century was the search for the bodies of at least four children abused, tortured and murdered by Ian Brady and Myra Hindley in the Manchester area of northern England during the 1960’s. The original search took place in 1965 on Saddleworth Moor, an area of bleak moorland on the Lancashire/Yorkshire border. The original search used large numbers of personnel with sticks to probe the soil then sniff for the smell of decomposition (Hunter and Cox 2005: 37). Two victims, Lesley Ann Downey and John Kilbride were found in 1965, while two, Pauline Reade and Keith Bennett, were not. A further major operation and review was conducted in the 1980’s (Topping 1989). The investigative team needed to predict what they were looking for given twenty more years of burial. When Lesley Ann Downey’s body had been discovered it had been buried in peat and was largely well preserved after 10 months. The exception was one arm that had been scavenged by animals. The body of John Kilbride was buried in a stream bed and his body was badly decomposed. The team sought expert advice from a number of sources including Professor Mike Green, a forensic pathologist, who predicted that since archaeological burials in peat can be well preserved it should be possible to find more recent ones (Topping 1989: 17).
In 1987 additional search advice was sought from David Hill, an archaeologist from Manchester University, and Bruno Frölich of the Smithsonian Institution, Washington DC. The body of Pauline Reade was recovered in July 1987. As Professor Green had predicted, despite a burial interval of 23 years that would have led to skeletalization and substantial degradation of natural fibre textiles in other soils, in this case both clothing and body were quite well preserved. Her body was largely intact, although the skin was darkened and dried, and her hands had separated into their component bones (Green and Garrett 1987). Like the wood component of her clothing, her hair was preserved. Wool and nylon are resistant to degradation under these burial conditions, while cotton and cotton/synthetic mixtures are much more vulnerable, even over short time frames (Janaway 2002). The majority of the internal organs were lost or in a badly degraded state, while, the bone marrow had formed adipocere. These findings are consistent with more recent experimental work in upland peat (Janaway et al. 2003).

Thus the mid to late 1980's was a key time for a cross over between archaeological science and forensic science (Boddington et al. 1987). Cross collaboration both in the UK and, more importantly, in the United States of America led to the vibrant new discipline of Forensic Taphonomy (Haglund and Sorg 1997; Haglund and Sorg 2002). In the late 1980's a key meeting was convened by John Hunter at the University of Bradford (which specialises in the excavation and scientific study of human remains) with representatives of local regional police forces. It was resolved that the next appropriate case would test the possibility of more direct archaeological involvement at the crime scene. A matter of days later Dr. Hunter was contacted by West Yorkshire Police investigating the discovery of a skeletonized body found by a dog walker in woods near Cleckheaton West Yorkshire. Professor Hunter was able to demonstrate that the remains (that of a young boy) had been deliberately concealed under stones adjacent to a wall. Careful archaeological excavation, recording, and recovery were able to demonstrate that while some of the upper stones had fallen, the lower stones had been deliberately placed over the boy's body, which was wrapped in a sack. It was subsequently established that the remains were those of three year old Stephen Jennings, who had been reported missing in 1962. The police suspected the boy's father, who was traced and brought to trial. This was the first time that archaeological evidence was used in a Crown Court in the UK and resulted in a successful conviction.

Throughout the 1990's and early years of this century organizational support grew with the need to deploy multidisciplinary teams at major crime scenes. In 1991 NecroSearch International was founded in the USA to promote multidisciplinary approaches to the search and recovery of human remains. In the UK the Forensic Search Advisory Group (FSAG) was set up in 1996. Modelled on NecroSearch International, it represents a consortium of individuals with expertise in the location of buried or hidden remains. Through the FSAG police investigation teams can gain advice on complex, multi technique, multi-agency search strategies. The group members have direct experience of crime scene from a variety of backgrounds including Archaeology, Taphonomy, Pathology, Police Search Advisers (POLSA), Geophysics, Aerial Imagery, and the use of cadaver dogs. The group and its aims have been recognised by the Association of Chief Police Officers (ACPO) Crime, Scientific Support Sub-Committee. In 1993, the Royal Commission of Justice Report examined the role of "expert evidence". Out of this review came a government-supported regulatory council, The Council for the Registration of Forensic Practitioners (CRFP). Included within the remit was Forensic Archaeology.

FORENSIC TAPHONOMY AND THE NATURE OF CLANDESTINE GRAVES

Whether conducting a search or maximising the evidence recovered during an excavation, a key aspect of forensic archaeology is to understand the mechanisms of digging a grave and the behaviour of the soil once it has been backfilled, and how the body will affect the burial environment during active decomposition. Both case examples and research have been utilized to clarify the nature of these relationships. The Anthropological Research Facility at Knoxville, Tennessee was founded by Dr. W. M. Bass specifically to conduct decomposition studies on human cadavers. However, it should be emphasised that despite the excellent, groundbreaking work done at this facility (Rodriguez and Bass 1985; Vass et al. 1992; Bass 1997; Vass et al. 2002), it is difficult to apply the results to casework in northern England. For this reason the University of Bradford has been conducting experiments using domestic pigs (Sus scrofa) as human body analogues since the 1970's. Early experiments were used to develop geophysical prospection techniques (Lynam 1970; Bray 1996; Threader 1997), which helped to define current practices that takes into account the nature of the soil, the cut of the grave, and the decomposition of the body to locate clandestine burials (Cheetham 2005). More recently, experimental fieldwork at Bradford has sought to focus on understanding and specifically their effect on the decomposition of hair and textile fabric (Janaway et al. 2003; Wilson et al. in press).

One of the difficulties encountered by forensic archaeology students, even those with a reasonable amount of conventional archaeological experience, is the simple fact that most clandestine graves are harder to delineate than conventional archaeological cut and fill features. This is due to a number of issues. Firstly, grave depths are often quite shallow, and thus rarely deeply penetrate subsoil that is radically different from the topsoil. Secondly, we are required to excavate these relatively shallow features from the top, which includes the surface root zone. Finally, the very nature of this sort of grave involves the perpetrator digging a hole, placing the body or other object inside, and immediately back filling it. The net result is that the fill is often not radically different from the substrate into which it is cut. The main differences are often subtle inclusions of weathered bedrock, or perhaps lighter clay from lower down and differences in compaction that may require a much practiced excavator to detect. In addition, many clandestine graves
are dug into already mixed, disturbed substrate found in cultivated gardens, adjacent to buildings and civil engineering works such as road embankments.

Figures 1-3 are used to illustrate some key issues associated with the digging and weathering of a clandestine grave. In figure 1, a simulated clandestine grave is being dug in peat moor-land, northern England in winter. The "perpetrator" has selected an area of a natural peat scar to dig as this is easier than cutting through the roots of the moor grass and heather. The depth of the grave is limited by the energy of the digger and the depth of soil that is easy to dig. In this case depth is effectively limited to about 50cm without the use of picks, mattocks etc. Of course in more organized disposals the use of motorized equipment will considerably change the potential for the size, depth of the hole, but these are limited by the perpetrator's access to such equipment and access of equipment to the disposal site. The experience and background of the perpetrator will also affect the efficiency of digging the hole. This includes the use of suitable tools for the job, correct spade type as well as selection of area, and in this case the use of a plastic sheet for the spoil. The other important issue is that this "grave" is being dug in daylight. Control of spoil etc. is much harder without light.

Figure 2 shows the completed grave, the cut has penetrated through the peat and cuts down into the yellow clay subsoil before coming down onto weathered Millstone Grit, which is the parent rock. The spoil that has been dug out and placed to one side is now a mixture of rock fragments, clay lumps and peat. Figure 3 shows the grave after the "body" has been placed in it and it is backfilled. Due to both the lack of compaction of the fill and the volume of the body, there is now more spoil than is needed to fill the hole. This has led to a slightly domed appearance of the "grave". Also note that the top of the fill is a mix of peat, yellow clay, and rock fragments. In the process of digging and backfilling the hole, rock and subsoil clods have been trampled into the peat surface. After this "grave" has been left to weather for 8 months, including rain during the winter and spring, the rock fragments in the top of the fill are still obvious to the trained eye (Figure 4). On the top of the exposed peat, plant re-colonization of the disturbed area is slow. Under pasture this can be more rapid. In one case in a very nutrient poor environment, grass covering coastal blown sand in the northeast of England, the presence of a body, providing moisture and plant nutrients during active decomposition, promoted active plant growth yielding a patch of longer, greener grass. Figure 5 shows a "grave" that has been dug in fertile agricultural land with rough grass cover. The hole has been backfilled for only two months and the plant re-colonization of the fill is not as dense as the established plants. The rate of plant growth on the disturbed surface is a complex combination of plant species available, season, and growing conditions. While such plant re-growth, or lack of it, can be used as a tool during a search, detailed interpretation of timescale to estimate the time since burial requires the expert testimony of a forensic botanist.

An inhumation grave is clearly more than a simple hole that has been backfilled. During a period of active decomposition the grave environment will be dominated
by soft tissue decomposition. While the general principles of progressive liquefaction of tissue is well understood (Garland and Janaway 1989; Janaway 1996), the implications of microbial activity levels and the subsequent pH and redox shifts on associated materials is just starting to be fully appreciated (Janaway 2002; Wilson et al. in press). In a recent set of experiments conducted by the University of Bradford (Wilson et al. in press), pigs were buried at three contrasting field sites (meadow pasture, moorland, and deciduous woodland) in order to document change to the burial environment and the cadaver. The burials were monitored using manual and automated temperature measurements and water table levels at the moorland site were measured using piezometers. Replicate pig and control graves were excavated after 6, 12 and 24 months burial (Figure 6). Soft tissue decomposition was recorded and samples of fat and soil were collected for analysis. While it is not the purpose of this review to present these data in detail (see Wilson et al. in press) some general issues can be outlined:

**Different Burial Conditions at these three Sites had a Marked Effect on the Rate of Decomposition**

Decomposition rates were slower in the moorland site than at the better drained woodland or pasture site. The former was subject to a much higher fluctuating
Decomposition Variation within the Grave

During decomposition the depositional environment is not static. Seasonal changes in soil temperature and moisture, and fluctuation in watertable levels contribute to differential decomposition according to depth and/or position within the grave. In addition, a buried body will greatly modify the microenvironment of the surrounding deposits as it decomposes, contributing an increased microbial load, as well as liquid and gaseous by-products of decomposition (Jenaway 1996). During active decomposition the conditions in the base of the grave are dominated by the chemistry and biology of liquefying decomposition products (Jenaway 2002). In particular, the area under the body is subject to strongly reducing conditions that produced marked differences between the rate of decay of textile materials and the corrosion of metals buried on top and under the pigs.
decomposition of buried bodies. Although only based on three contrasting depositional locations in West Yorkshire these experiments have considerably aided our understanding of decomposition rates under conditions relevant to local police work.

PRINCIPLES OF ARCHAEOLOGY APPLIED TO THE EXCAVATION AND RECOVERY OF FORENSIC BURIALS

The bulk of police enquiries that are liable to involve a forensic archaeologist fall roughly into two categories: either the police have intelligence that a body has been buried at a location and they need to conduct a search; or human remains have been disturbed by landscape gardening, building work or dog up by animals etc. In many cases where remains have been discovered by the general public they are often found by pet dogs, or children.

Search

In the occurrence of a deliberate police search much will depend on the quality of the intelligence, the terrain type, the target and how long it has been buried. With buried human remains the degree of putrefactive change expected may influence which search techniques may be most applicable. In general there is seldom a single “magic bullet” that can be used and it is a question of applying a suite of techniques suitable to both the terrain and the target type (Killam 1990; Hunter and Cox 2005: 27-61). In general, the principle is to operate the techniques in a set sequence starting with the least invasive to the more invasive. For instance, patterns or changes to vegetation growing at the scene need to be examined before a large number of feet have passed over the search area. The powerful but basic technique of field-craft, that examines the ground looking for subtle changes or things out of place, may indicate a concealed burial. Indicative features can include change in slope, evidence of crumbling or compaction within the grave, loose spoil from digging, or evidence of sub-soil lying on the surface. In recent years both geophysical survey and the use of specially trained cadaver search dogs have been very effective (Komar 1999; Cheetham 2005; see also Skowronek this issue). In the UK police dogs and their handlers are regulated by national standards approved by the Association of Chief Police Officers (ACPO) requiring them to be licensed in order to be operational. In 2006 there was a review of best practice with regard to all aspects of search from the National Centre for Policing Excellence. This included Strategic and Management issues, Assets (dogs, air support NCPE specialist advisors etc.) Specialist Groups (forensic specialist, fire service, coastguard, military assets etc.) as well as consideration of different search terrain (including open areas, motorways, railways and crime scenes). This report forms ACPO guidance to the police service. Again it is important that forensic archaeologists, and for that matter other specialists, have a firm understanding of where they fit in “the bigger picture”.

When an archaeologist has been called in to work on a search for buried remains, some common sense does need to prevail when contemplating the expenditure of time and resources on technology based search techniques. The reality is that every positive indication with the equipment will have to be tested by excavation. If the area is small enough, for instance a small back garden it may be just as quick and cost effective to have the archaeologist excavate it in its entirety. This is especially the case with geophysical techniques that are being employed in marginal conditions often due to soil type or contamination, for instance magnetometry which is badly affected by metal debris. Of course where intelligence has indicated a much wider search area there is a need to screen areas and prioritize search areas. Prioritizing can be based on opportunity, for instance, it may not be physically possible to dig a grave in certain locations due to soil depth and underlying bedrock. Techniques of offender profiling can assist in raising the priority of certain search areas over others (Boudreaux et al. 1999; Morton and Lord 2002). The Centralised Analytical Team Collating Homicide Expertise and Management (CATCHEM) at the Derbyshire Constabulary has been collating central statistics on aspects of body disposal that are relevant to the search for concealed bodies, including information on distance travelled between the murder site and disposal site based on the profile of the victim and the perpetrator. This data is used by NCPE specialist search advisors to formulate search strategies.

Excavation

Every crime scene and every forensic archaeological excavation will be different, yet certain basic principles pertain to most cases. The archaeologist’s approach will be governed to some extent - whether they are dealing with a series of “hot spots” indicated by a cadaver dog/geophysical survey, or are working from some partially exposed remains, perhaps from animal disturbance of a potential grave. Before the archaeologist starts work it is important to check with the Crime Scene Manager to determine what other searches or observations need to be made prior to disturbance by excavation. It is also prudent at this stage to agree how the work is to be recorded; does the SIO want continuous video? Who is responsible for producing the definitive plan– will it be the forensic archaeologist or force plotter? In the UK archaeologists will be responsible for their own specialist recording, while the police will take and exhibit the photographs. The precise nature of the records taken will depend on the complexity of the scene, the brief from the SIO and any constraints due to time or health and safety considerations. All this should be agreed at the start of the work and the actions logged.

There are certain key differences in archaeological practice between the UK and other countries such as USA. It is my general principle to bag and seize all excavated spoil, so there is the option of putting it through a sieving/screening system later. I am not in favour of on-site dry sieving, as practiced by a number of overseas colleagues. For one thing it does not really work efficiently except on the driest of soils, which are not normally encountered in the UK. Usually it is necessary to wet screen, with all the logistical implications that this entails. Secondly there are
potential risks of contamination and confusion if the work is done on site, and finally doing this work under controlled conditions is simply preferable.

Cross contamination at and between scenes is an important consideration for forensic practitioners. Archaeologists will be expected to wear Tyvek suits, gloves, overshoes, etc. as directed by the CSM. In addition the archaeologist needs to consider issues of contamination via specialist tools. For special, high profile work the CSM may insist on new tools being brought in. In this instance the archaeologist will have to ensure that the correct tools are bought. The other option is to ensure that all equipment is cleaned to a forensic standard between scenes, including agents to prevent cross contamination of genetic material. This procedure must be recorded in a cleaning log.

A typical approach adopted by forensic archaeologists is to clean back loose soil (backfill halo) and surface vegetation, and attempt to identify a potential grave through differences between the fill and the deposit that it is cut into. A hand towel is needed for this process because the only distinction in some cases may be compaction. Once a potential fill (grave) has been identified it is necessary to define the edge of the cut, again this may be clear by differences in colour but most often it is a case of feel. It is at this point where experience comes into play. The next stage is usually to bisect the grave and excavate a half section using normal methods of stratigraphic excavation. The bisect method results in a real section of the fill profile that can be photographed, and enables a rapid assessment as to whether this is a forensic case or an animal burial. Once this is done and the grave is recorded and mapped, the remaining fill can be excavated.

Archaeological excavation has the potential to recover the stratigraphic relationship of each unit that makes up the grave, maximise the recovery of small, fragmentary evidence, and can be used to reconstruct the sequence of events. A key objective is to be able to reconstruct the way in which the hole was dug and backfilled. Where one dug feature intersects another, e.g. grave and building service trench, it may be possible to define the chronology of events based on the stratigraphic evidence. Based on archaeological principles, this type of excavation can clearly associate evidence, such as cartridge cases, food wrappers, cigarette ends, etc. from within the fill of the grave or from the loose spoil (backfill halo) created by digging the hole. It is also possible to recover tool-shaped clogs of earth from the fill, tool marks from the edge of the cut, and footwear prints from the base of grave.

In the instance of a series of “hot spots” and where there are no other indications of the potential location of a backfilled hole, the archaeologist and police team will need to agree on which area to investigate. In the case of remains found on the surface, it is also important to determine if they have come from a burial or are part of a surface scatter. For this reason it is critical that the archaeologist is able to examine the remains in situ. It may for instance be relatively simple from the burial context to ascertain whether the remains are of forensic interest or part of a legitimate ancient burial.

Forensic Archaeology and Forensic Taphonomy Experience in the UK:

Case Study

Forensic archaeologists can save valuable police time and resources by determining a potential burial is of no forensic interest. In 2005 a forensic archaeologist was contacted by the police to attend a scene where a human skull was struck by a builder’s pickaxe during landscaping (Figure 7). Unfortunately, most of the maxilla and mandible were destroyed. Some soil had been removed from site prior to arrival of the police and it was not possible to recover all the teeth. The excavation was largely constrained by the massive soil overburden which dated to at least the mid-19th century AD. The excavation was further constrained by the boundary fence on a further side and a dump of builder’s materials and debris. Due to these constraints it was not possible to conduct a classic, “clean off the surface and pick up the cut of the grave”. It was decided to extend the builder’s trench on the open side to pick up the extent of the burial where practicable. A key stratigraphic issue was whether the soil overburden sealed the grave, or was there evidence that the grave had been inserted through it. Although most of the key deposits had already been dug away by the builders, from what remained there was no indication of insertion of the burial. An excavation was carried out and the rest of the skeleton uncovered (Figure 8). While no modern materials were found in the grave, neither were any ancient grave goods. The loss of the teeth meant that an anthropologist or odontologist could not evaluate dental wear or dental work, which in the case of adult burials in the UK can be used as one of the indicators of recent remains. However, based on the depth, context, orientation, and stratigraphy, the archaeologist could report that in his expert opinion the burial was unlikely to be recent (of police interest) and was most probably pre-medieval in date. This opinion was accepted by the coroner.

Case Study

While a forensic archaeologist will usually be requested to attend a scene where the remains have been concealed by burial this is not always the case. In 2005 Cleveland Police in the northeast of England asked for a forensic archaeologist to attend the scene of a body dumped in woodland. Dog walkers reported finding a body partially covered by sticks and branches lying against the inside of a metal boundary fence. On finding the body they had moved one of the overlying sticks and then reported their discovery to the police. Police officers visited the scene, which was difficult to access except via a single path that had probably been used by the perpetrator. Reluctantly this had to be used as a common access path (CAP) and metal stepping plates were used. I was requested to assist in removing overlying material in a controlled manner, prior to the body being physically recovered for a post-mortem and to comment on whether this could have been a rough sleeping shelter that had collapsed, or material that had been placed on top of the body after it was immobile. A forensic ecologist required simultaneous access to the scene in order to observe biological material pertinent to her expert testimony. The overlying material was jointly removed and recorded.
The body was lying on its left hand side, adjacent to, and facing, the interior face of the boundary fence, a denim jacket was partly covering the head. A number of branches were on top of the body, mainly parallel to its axis. In addition there were four large stones. From my initial observations it was clear that two of the stones were placed on top of part of the denim jacket and a third was resting up against the lower back/buttocks. This last stone was both overlying and overlain by a number of branches. From the position of the moss and the soil stains on the stones it was apparent that they had been recently moved from a semi-buried position. The branches, many of which were soft and rotten were in a condition consistent with having been gathered from the woodland floor. Again the position of growing moss and algae on the branch surfaces indicated they had been moved recently. Twigs with leaves also covered the body. The leaves were still green but limp with wilt. This is consistent with having been removed from a living tree and placed over the body recently. It was critical to have the ecologist present to evaluate and later give expert testimony on this aspect, as different plants respond to stress, shading, or damage to different degrees.

There was no direct indication of digging activity, and although some bare earth was exposed close to the body, this was compact, and consistent with recent exposure due to scuffing away the leaf litter and other woodland floor debris during activity around the disposal site. Although not a burial, the material used to cover the body conformed to stratigraphic principles that coupled with the botanical evidence gave a clear picture of the circumstance and methods of disposal, as well as an indicative timescale.

CONCLUSION

It is important to keep the role of the forensic archaeologist in the UK in proportion. Between 2000 and 2005 there were 850-891 cases of murder, manslaughter and infanticide per year in England and Wales (Crime in England and Wales 2004/2005). The vast bulk of these do not involve deliberate concealment of the body. It is difficult to estimate the total number of deliberate burials of murder victims each year, partly because we only know of the unsuccessful concealments, and also due to the way the statistics are collected centrally. However a commonly accepted estimate is 15% of the total homicides (Hunter and Cox 2005: 4). This rate may vary regionally within the UK where there are different patterns of population density and landscape, providing different opportunities for body disposal. However studies in the north of England have shown that only the minority of known homicides involve transport and concealment of the body, and that the majority of these involve surface dumps of the body rather than burial.

The discipline of Forensic Archaeology continues to grow in the UK, yet the number of archaeologists who have been called upon to assist the police is probably no more than 30, with perhaps less than 10 who regularly attend scene. (Hunter and Cox 2005: 16-17). There is provision for specific forensic archaeological postgraduate training at a number of universities including Bournemouth University.
FORENSIC ARCHAEOLOGY AND FORENSIC TAPHONOMY EXPERIENCE IN THE UK

4. This excludes 2002/3 when 1043 deaths are recorded in the statistics due to the discovery of the crimes of Doctor Howard Shipman who murdered large numbers of his elderly patients over a number of years, and thus distort the statistics (Whittle and Ritchie 2001).

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