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The Evidence that Demands to be Heard

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Introduction

In 1987 Colin Pitchfork became the first criminal in the world to be convicted by DNA profiling. He was found guilty of two rapes and murders three years apart in Leicestershire, England. The victims, Dawn Ashworth and Linda Mann were both schoolgirls. Police conducted a DNA sweep of the area, but Pitchfork persuaded a friend to take the test for him. Initially he evaded capture, but was caught out when his friend mentioned it in a pub and the police were informed. Pitchfork eventually gave a sample for DNA profiling and this was matched to both offenses. Prior to Pitchfork's arrest the prime suspect, Richard Buckland had been charged with both rapes and murders, even though he had only confessed to one of the murders, but vehemently denied the other. This puzzled the police. They turned to Professor Sir Alec Jeffreys and his then revolutionary technique of Multi-Locus Probe (MLP) DNA profiling to resolve the conundrum. The technique proved that Buckland was innocent of all of the offenses, but that they were indeed linked. Buckland was the first person to be eliminated by DNA profiling. It should be remembered that without the crime scene samples being available for testing Jeffreys could not have demonstrated the capabilities of his technique.

Professor Jeffreys' discovery revolutionized the fight against crime. DNA profiling would help to convict many criminals. It would also eliminate many more people from police inquiries. DNA profiling would become perhaps the most important weapon in the fight against crime. However, it is important to remember that it is just one of many techniques available to investigators. The increased use of DNA profiling, especially as advances were made in terms of discriminating power and sensitivity, resulted in greater understanding of the need to protect the integrity of crime scenes and samples obtained from them. DNA profiling is not the only technique to require the integrity of crime scenes to be guaranteed. Each and every development in forensic science depends upon meticulous respect for the integrity of the crime scene and careful observation and photographing of that scene before a single sample is collected. This includes establishing

environmental conditions – something of vital importance in forensic entomology. Careful attention must be paid during the collection of samples to prevent contamination of the evidence. It is necessary to scrupulously follow established procedures for collecting, packaging, storing and transportation of samples obtained from crime scenes. Observation of established procedures in such matters not only preserves the quality of the evidence, but can prevent accusations of malpractice. Respect for the integrity of crime scenes and the evidence obtained from them should be a fundamental tenet of any criminal justice system. Not only should there be stringent safeguards governing conduct at crime scenes, but the consequences for failing to meet these standards should be very high. The cases detailed below illustrate not only the problems that arise when crime scenes or samples obtained from them are not accorded the respect they deserve, but what is possible when they are treated with due respect.

Case Studies

1) Mahmood Mattan

In March 1952 Lily Volpert was the victim of a brutal murder at her shop in the Tiger Bay district of Cardiff. Her throat had been slit from ear to ear. The floor was heavily blood-stained. The priority for investigating officers was to check whether or not she was still alive. Consequently, they walked through the crime scene. This destroyed some evidence that may have helped tie the killer to his crime. Officers in 1952 were understandably not mindful of the wonders that forensic science would come to perform in cases such as this in the future. Nevertheless, lessons would be learned and crime scenes would come to be recognized as extremely important sources of evidence. South Wales Police would take over from the city police who investigated the murder of Lily Volpert and would develop a pioneering approach to crime scene evidence.

Mattan's case was very controversial. An entirely circumstantial case resulted in his execution – the last person to be hanged in Cardiff Prison in September 1952. An appeal, nearly fifty years later would reveal many causes for concern. By then, the evidence that may have tied the killer of Lily Volpert to his crime was irretrievably lost. Mattan's case is a graphic example, if one was needed, of the necessity for the highest standards at crime scenes. However, that is not the only necessity. Procedures to ensure the integrity of the evidence at crime scenes and to ensure the chain of custody of that evidence, is properly collected, packaged, transported and stored prior to testing is essential if the guilty are not to evade sanction for their crime and innocent people like Mahmood Mattan are not to be wrongfully convicted. While the Mattan case occurred over half a century ago, some crime scenes continue to cause concern decades later.

2) Gary Mills & Tony Poole

In January 1989 an incident occurred in an apartment at 34 Conduit Street, Gloucester. As a result, a young black man named Hensley Wiltshire would subsequently lose his life due to a complicated set of circumstances. Gary Mills and Tony Poole would serve fourteen years in prison for Wiltshire's murder. This was a very complicated case that involved many issues beyond the scope of this article. At least two altercations occurred at Conduit Street involving a knife and crowbar. Wiltshire was aggressive and attacked Mills. Wiltshire came off second best. Among the serious discrepancies in the medical evidence were ovoid injuries to Wiltshire's shins. These injuries were referred to as 'the mystery injuries' because it was never discovered what had caused them.

Although 34 Conduit Street was a crime scene, it was not properly sealed. A friend of the deceased gained access after it should have been sealed, and it has never been established whether any evidence was removed from the apartment or not. Had the scene been sealed the questions of what weapon had caused the mystery injuries and who had caused them might have been resolved unequivocally. The convictions of Mills and Poole were quashed by the appeal court last year. A policy of sealing all crime scenes as soon as they are identified as crime scenes would prevent recurrence of the problem that occurred in this case and would have avoided the uncertainty over whether the implement that caused the mystery injuries had ever been in that crime scene.

There were other crime scene related issues in this case. For example, crime scene photographs or a visit to the flat quickly establish that an alleged eye-witness, Paul White, could not have seen what he claimed to have seen. 34 Conduit Street is on an incline and cannot be seen into from street level. A visit to the crime scene clearly establishes that White had lied. In such circumstances the Crown Prosecution Service (CPS) ought to have used its powers to review the quality of this evidence and not relied on White as a witness of truth. It has the duty to present only evidence that can be safely relied upon. White ought to have failed that test, as he had been exposed by the crime scene as a deeply flawed witness at best. The appeal court would later dismiss him as an unreliable witness, deeming it unnecessary to present crime scene related evidence regarding sightlines to further demonstrate his unreliability. This raises the question of why prosecuting lawyers thought White reliable when they had access to the crime scene and photographs. It suggests that greater vigilance is required in applying the Code for Crown Prosecutors regarding the duty to ensure the quality of the witnesses to be relied on. The crime scene was impartial and accurate; White was neither. Witnesses can be mistaken or dishonest as in this case. Crime scenes and evidence obtained from them are likely to be both more accurate and impartial. As such they offer a better quality of evidence.

South Wales Police's Pioneering Approach

South Wales Police would eventually confront a series of high profile miscarriages of justice that occurred since the 1980s. These cases had eroded public confidence in the force. They were determined to adopt a pioneering approach that would regain public trust. Evidence obtained from crime scenes was a central tenet of their approach to these re-opened cases. The crime scene procedures practiced by original investigating officers enabled great progress to be made in historic cases which had been unsolved or resulted in miscarriages of justice that had been resolved on appeal. This was due to the collection and retention of samples obtained from crime scenes. Sadly this did not occur to that high a standard in all of the cases.

In May 1999 they established a new unit to investigate unsolved and unresolved homicides. Their approach was to review the original investigations to ensure that investigative opportunities had not been missed and to utilize developments in forensic science, especially the then novel DNA testing system known as Second Generation Multiplex Plus (SGM+)[1]. It was the first such unit in the whole of Britain and would secure one of the greatest triumphs of modern policing when it became the first police force in Britain to correctly resolve a murder inquiry after a miscarriage of justice had muddied the waters. That success owed much to the development of SGM+, but it also required original investigators to treat the crime scene with due respect. They did so. Sadly other cases are more difficult to resolve.

The South Wales Cases

1) The Phillip Saunders Inquiry

There are several issues in the case of the Newsagent's Three – Darren Hall, Michael O'Brien and Ellis Sherwood – that are worthy of comment, but irrelevant to the purpose of this article. In 1987 a newsagent, Phillip Saunders, was viciously attacked from behind with a weapon such as a shovel outside his home in the Canton district of Cardiff. It had been raining that night and consequently some evidence was lost. That was nobody's fault. Saunders was struck in the head and subsequently died in hospital without ever regaining consciousness. A shovel was neatly placed by the wall and a half empty whiskey bottle was also at the scene of the brutal attack. The postmortem examination determined that there was no alcohol in Saunders' system and that Saunders had been struck with a sharp implement such as a shovel. The shovel discovered at the scene could not be unequivocally tied to the attack. There was no scientific evidence against the Newsagent's Three at all.

This made the whiskey bottle a potentially vital clue. It was recovered, and tested for fingerprints; but no evidence relating to the bottle was presented at trial; and the bottle was subsequently discarded. There is no evidence that the bottle was tested for saliva and consequently for DNA from sloughed cells. This is unfortunate as is the failure to retain the whiskey bottle. South Wales Police had announced the establishment of their new unit while the Newsagent's Three were on bail pending the quashing of their convictions. Twelve years had elapsed since the crime. It is unclear exactly when the bottle was discarded, and it is unfortunate that new investigators were deprived of access to it. The crime scene was properly processed and relevant evidence from it was properly obtained and stored – at least initially. It should be remembered that DNA techniques were not as sophisticated in 1987 as they are today. The decision not to test the bottle then may well have proved a blessing in disguise as such testing in 1987 would probably have used up all of the available DNA, thereby preventing more sophisticated tests from being conducted later. Unfortunately, the bottle had been disposed of before DNA tests using today's sophisticated techniques could be conducted. The whiskey bottle could have offered vital clues as to the real perpetrator.

Sadly, with the exception of fingerprinting, it is unclear if any further tests were conducted on the whiskey bottle prior to it being thrown away. This is a compelling example of the need for accurate records of all samples, submitted for testing and the results of such tests to be kept both by the laboratory conducting the tests and by the force that referred the samples for testing. Had such practices been adopted by South Wales Police at the time, definitive answers could be provided to the question of what tests were conducted, if any, and equally importantly, whether the original samples were still available for testing now.

This raises the vexed issue of how long samples should be retained. Policies vary from force to force. Some retain samples for as long as twenty-five years. South Wales Police appear to have no fixed policy. The new unit has resolved cases from as far back as the early 1970s. That would not have been possible if the samples obtained from the crime scenes had not been retained. Although that occurred in an unsolved case – the suspect linked to the murders is now deceased – the police have closed the inquiries as a result. It is unfortunate that such a policy was not adopted in all cases. With the full benefit of hindsight, we now know that there were a series of miscarriages of justice that could have benefited from similar foresight. It is also important to note that the

miscarriages of justice that have been corrected ought to have the same status as unsolved crimes now. The case of the Newsagent's Three was not acknowledged as a miscarriage of justice for twelve years. While some cases are obvious candidates as a miscarriage of justice – the Cardiff Three for example (see below) – others are not. Consequently, the best approach to retention of samples may be to treat all cases as unsolved and retain samples accordingly. Had that policy been adopted by South Wales police the whiskey bottle would still be available.

2) The Sandra Phillips Inquiry

Another South Wales case illustrates the consequences of the failure to retain evidence obtained from crime scenes even more graphically. The whiskey bottle may or may not have implicated the murderer of Phillip Saunders. We will almost certainly never know. However, the case of Paul and Wayne Darvell is different; there is no doubt that evidence from the crime scene would have implicated the real culprit. The Darvell brothers were convicted of the 1985 murder of Swansea sex shop manageress, Sandra Phillips, in 1986. They served seven years in prison before having their convictions overturned. There are several issues of concern in that case, which do not impact upon this article. However, there are very serious crime scene issues that need to be addressed. The victim had been bludgeoned with a telephone receiver, and the killer's subsequent blood-stained palm-print was on a wall. It soon emerged that it did not implicate either of the brothers. Yet, the prosecution continued and all work on the print was ordered to stop. The negative and photograph taken of the print were also destroyed. This should never have been allowed to occur. This evidence ought to have been allowed to speak, however inconvenient that was to the case against the Darvell brothers. The consequences of this decision may prevent the real murderer of Sandra Phillips ever being brought to justice. Nevertheless, current procedures would never tolerate such practices, especially regarding samples of such obvious importance.

Both the Phillip Saunders Inquiry and the Sandra Phillips Inquiry are among the cases being investigated by the unit referred to above. To date both cases remain unresolved. To some extent the practices of the original investigation towards evidence obtained from the crime scenes has hindered the current investigations by depriving them of evidence that may have resolved these crimes correctly. A clearer policy on retention of samples in controversial cases may have assisted them. While not everyone who claims to be the victim of a miscarriage of justice actually is, some have proved true. A balance needs to be struck between providing closure and allowing those claiming to be innocent reasonable opportunity to prove it. The work of South Wales Police's unit graphically illustrates both such a need and the problems to be faced in the future where a miscarriage of justice is proved, but vital samples are no longer available. Perhaps a new independent review body, consisting of both prosecution and defence lawyers, forensic scientists and representatives of the police and victims of miscarriages of justice could be established to resolve such issues, especially in controversial cases such as those referred to previously.

3) The Second Lynette White Inquiry

The Lynette White Inquiry, which I wrote a book about (see footnote)[2], was both the most horrific murder and dubious conviction in Welsh history; yet it was also to prove exceptional in that many years after the event forensic science was able to name the killer beyond any doubt.

In the early hours of Saint Valentine's Day 1988 Lynette was about to entertain a client. For some reason he snapped. Her throat had been slit, as had her wrists. She sustained over fifty stab wounds, some of which were inflicted as she was dying, or even later. This was a truly appalling

crime. The murderer had cut himself and he had moved the body within the flat. There was a plethora of scientific evidence to work with. This included blood that did not originate from Lynette and much more besides. None of the scientific evidence found in the flat tied any of the five men who stood trial in 1990 to the murder.

The original investigation of the murder of Lynette White was a monument to the old tactics: bash, bludgeon and bluster. After the longest murder trial in British history, the cousins John and Ronnie Actie were acquitted, but Yusef Abdullahi, Stephen Miller and Tony Paris (the Cardiff Three) were convicted. All five were and are undoubtedly innocent – a fact now accepted by South Wales Police. An investigation into possible criminal conduct by anyone involved in the original inquiry is currently proceeding. In order to avoid the possibility of prejudicing that investigation I think it would be inappropriate to detail how the miscarriage of justice that befell the Cardiff Three occurred. While the faults of the original inquiry were legion there was one area where they deserve praise: their treatment of the crime scene and of most of the samples obtained from it.

The police gathered numerous items from the crime scene, among them a piece of cellophane that donated the murderer's nickname – 'Cellophane Man'. Several of the items were tested, though none of the results, then or later, implicated the Cardiff Three, although foreign blood staining was discovered on Lynette's jeans, her sock, and in the flat.

Despite this, the extensive evidence collected and retained by the original team, facilitated the resolution of the crime; though the treatment of some items fell below these high standards. Some of the samples of blood-staining were poorly stored in a locked property cupboard, after they had been treated with ninhydrin. This could have had dire consequences as ninhydrin degrades DNA. Thankfully, degradation of these samples would eventually prove not to be the obstacle it once was and such samples will not be stored in such a fashion now. After the release of the Cardiff Three, a senior officer in a re-investigation, 1995-98, reserved the right to use the entire DNA if he thought it necessary, and the samples could have been tested to destruction. Luckily, at the request of Peggy Pesticcio, Lynette's mother, testing was suspended pending further advances in DNA testing systems. In 1999, following a significant advance in DNA testing systems the Lynette White Inquiry was re-opened again. Several items were subjected to DNA profiling, using the novel techniques. These included both items that had been tested using less sophisticated DNA testing systems and ones that had never been tested previously. To date the scientists who conducted the novel DNA tests and the officers who investigated Lynette's murder this time have taken all the plaudits. Undoubtedly they deserve to be commended for a job very well done, but Dave Barclay, a scientist/ investigator at the National Crime Faculty (NCF), made an immense contribution which has been unjustly overlooked – one that relates directly to crime scenes and offers valuable lessons for other inquiries.

Barclay visited Flat One, 7 James Street[3], where the murder took place. Although it had been decorated since, Barclay went through the apartment blind-folded, trying to replicate the moves of a murderer in the dark: the crime had occurred at night. Every place he touched was observed and noted, and subsequently tested. When the layers of paint were removed, blood was found. Close examination of the original crime scene photographs by Barclay suggested that one particular blood spot on the wall was likely to have been cast off, suggesting the offender had cut himself. This was backed up by minute contact smears which got heavier away from the body along the exit route – the opposite of what would be expected if it were Lynette's blood. Barclay also suggested that as some blood on the wall was likely to have dripped, the skirting board be removed, and more

blood was recovered from between the wall and the skirting board. When this blood was tested with the remaining samples from the clothing and the items that had not been tested yet, they revealed the same DNA profile.

Following novel investigations of certain alleles in the profile on the National DNA Database Detective Constable Paul Williams was able to identify a DNA profile of interest belonging to a fourteen-year-old boy who was a close relative of the real killer of Lynette White. Cellophane Man was finally identified as Jeffrey Gafoor fourteen years after the event. Had it not been for the cooperation of the occupant of the flat in allowing police access to the crime scene the evidence Barclay located could not have been obtained. Access to crime scenes is a matter we shall return to below.

On July 4th 2003 legal history was made in Britain when Jeffrey Gafoor pleaded guilty to the murder of Lynette White. South Wales Police became the first police force in the United Kingdom to resolve a notorious miscarriage of justice with the conviction of the real murderer. Correct treatment of the crime scene and dedication of those involved to ensuring that evidence that had been silenced for fourteen years finally got the opportunity to speak contributed greatly to this historic outcome.

The contribution of Dave Barclay in solving the murder of Lynette White has been sadly overlooked. It was an integral part in making legal history in Britain and one that offers lessons for many other inquiries and police forces. The methods used by South Wales Police in this inquiry have been shared with other police forces. They are already being used in other inquiries. That is a development to be welcomed.

Had these items, which ultimately unmasked Gafoor as Lynette's real murderer, been treated in the same manner that the blood-stained palm-print or whiskey bottle had been treated in previous cases, it is unlikely the murderer would have ever been identified. That demonstrates the need for a clearly defined policy regarding retention of crime scene samples in such cases. It also raises another issue, the preservation of the crime scene itself. 7 James Street was made available to investigators in the second Lynette White Inquiry. It was a decision that assisted them considerably and enabled them to collect vitally important evidence fourteen years after the murder, but other crime scenes have been destroyed even though the cases remain unresolved.

4) The Diane Jones & Shauna and Sarah Jayne Hibberd Inquiry

62 Marigold Close in Merthyr Tydfil, South Wales, for example, was the site of a fire that cost a young mother, Diane Jones, and her two infant children, Shauna and Sarah Jayne Hibberd, their lives. Three women – Annette Hewins, Donna Clarke and Denise Sullivan – were convicted of offences related to the fire. Hewins and Clarke were to have their convictions quashed, although a retrial was ordered in Clarke's case. After legal argument the charges were ordered to lie on the file. The murders of Diane Jones and her daughters Shauna and Sarah Jayne remain unsolved to this day.

After the successful appeals, the scene of that crime was destroyed after a forensic scientist had visited the site and taken samples. Though the house had become an eyesore that offended the local community, it potentially still contained evidence that could one day resolve the crime. Now, any evidence that had yet to be recovered has been irretrievably lost, and any new technique discovered in the future will not be capable of performing to its potential. What would have

happened if 7 James Street had met the same fate before Barclay had demonstrated his skills so ably?

The Merthyr case is one that was waiting to be reviewed and investigated by the same unit that solved the Lynette White Inquiry when the decision to allow the house to be destroyed was taken. The review has been completed. However, the case is still awaiting active investigation. While there is clearly a need to strike a balance between the wishes of the local community who wanted it destroyed and those of the women wrongfully convicted, especially Hewins, it is somewhat strange that 62 Marigold Close was destroyed while an investigation was still pending. It may be impractical to preserve crime scenes indefinitely, but this one should not have been destroyed until after the review of the original investigation and any subsequent investigation necessitated by that review had been completed. Should such a situation arise again there should be a policy that no destruction of a crime scene will occur until after the review and reinvestigation have been completed.

5) The Power Family Inquiry

After the collapse of the Merthyr Tydfil case another infamous case grabbed the headlines in South Wales. Three generations of a Clydach family were bludgeoned to death. The target was clearly Mandy Power, but her mother and children also lost their lives. Unlike the Merthyr case South Wales Police ensured that they would not lose crime scene evidence during their investigation by purchasing the house where this tragedy occurred. It was subsequently sold. However, the decision to purchase the house preserved the crime scene and enabled evidence to be obtained from it. David Morris was eventually convicted of the murders. He protests his innocence. The case has raised an interesting precedent regarding the preservation of crime scenes – one that other forces would do well to adopt.

The Russell Crookes Inquiry and the case of Neil Sayers

1) Background

Another case worthy of mention is that of Neil Sayers. My article on the entomological aspects of this case can be seen in the forensic entomology special (see footnote)[4]. Sayers is currently in prison, protesting his innocence. Both he and co-accused Graham Wallis were students at Hadlow Agricultural College in Kent in May 1998, as was the victim, Russell Crookes. The three were said to be friends, and during the night of May 13th Crookes, Sayers and Wallis went to woods near Hadlow College, as they had done many times before to 'hang out' together. Sayers insists that they all returned to their accommodation at the college at about 4.00 a.m. He saw the light go on in Crookes' room and that was the last time that he saw Crookes alive. Two days later, Crookes was reported missing by his family and a missing person's inquiry was started. Both Sayers and Wallis made appeals for Crookes' safe return, participated in searches, and made statements to the missing person's inquiry. Sayers' account has not deviated in six years. The same can not be said for Wallis' account. His 'confession' was more an accusation against Sayers than an admission of his own guilt, but it was the crucial evidence in this case – one that could and perhaps should have been vigorously tested.

The Police relied on Wallis' account uncritically. They are allowed that option in law, which does not require them to test a confession. The CPS followed suit. It too could have demanded further

evidence, but it also chose to rely uncritically on Wallis' account. Yet there was extensive physical evidence available that could have confirmed or refuted Wallis' account. It still can.

2) The Entomological Evidence

The pathologist who collected the maggots from the cadaver, Dr. Michael Heath is currently awaiting a disciplinary hearing that could result in his Home Office status being revoked. In the Sayers case, he failed to take relevant temperatures recommended by forensic entomologists, failed to take samples from all areas of maggot infestation, and failed to guarantee that he had collected the largest maggots.

A sample of the maggots was fixed and given to a Scene of Crime Officer by Heath along with a live sample. The latter were taken to a police station and kept in the fridge, and not surprisingly died there following a lack of regular observation. Even then they were not examined by a forensic entomologist, and the best chance to establish the post-mortem-interval had been lost. The collection and chain of custody of the entomological evidence in this case reveal problems with the treatment of such evidence from the point of collection onwards. This indicates that some pathologists could benefit from better training of how to treat entomological evidence. While it may not be of assistance in many cases, there are some cases, such as this, where it could be of considerable assistance. In such cases it is essential that pathologists and scene of crime officers are fully conversant with best practices. Such advice is easily accessible. Nevertheless, specific training should be made available to all professionals working within the criminal justice system to ensure that investigative opportunities afforded by maggots are not missed, especially due to lack of familiarity with the quality of evidence that they could provide. It is also necessary to ensure that such evidence was not overlooked due to financial constraints. Even now cases where forensic entomology could be of use are comparatively rare. Sayers' case is one case where it may well have been of considerable assistance. It is unfortunate that the police chose not to utilize its potential, but that is their right.

While the police may not have thought it necessary to their case to pursue the entomological evidence due to financial considerations or simply because they did not believe it could assist, the same cannot be said of Sayers' defence at trial. Inexplicably, Sayers' original defense lawyers failed to instruct a forensic entomologist to try to obtain this information in 1998, and when in January 2003 the maggots were examined by Dr. Martin Hall and Dr. Mark Benecke they were in an extremely poor state. The species was established as the bluebottle Calliphora Vomitoria, but as the fixed sample had been thrown away, Hall and Benecke could not establish the size the maggots had attained upon discovery of the body. None of the grave-site photographs or photos of the post-mortem examination could resolve this issue accurately, and estimates were the best that could be achieved in these circumstances.

The examination of the remnants of the maggots was further complicated by the poor quality of environmental data established at the time. Hall and Benecke had to work with the average of average temperatures from the nearest meteorological office, because the necessary temperatures at the scene were not recorded. It would not have been difficult to establish a far more accurate estimate of the actual temperatures and relative humidity experienced by the cadaver, by using data-loggers over a given period and comparing the data collected with that recorded from the same meteorological office for the same period. By establishing the relationship between data from the burial scene and the office one could estimate more accurate data covering the period of the

victim's disappearance than that obtained from the office alone. Such field experiments are routinely conducted to assist forensic entomologists calculate the rate of development of maggots in the body and ultimately estimate the postmortem-interval to a greater degree of accuracy than relying solely on data obtained from the nearest meteorological office.

It would appear that there was not a fixed policy to discard such evidence after a specified time as some maggots were retained while others were not. It is unfortunate that both samples of those maggots were not retained. Given the willingness to retain the maggots, it should become force policy that both sets of samples taken from crime scenes be retained. Had that occurred in this case the entomological evidence may have been able to resolve some of the issues in this case. Guidelines are easily accessible on how to treat entomological samples in order to obtain the most accurate results. However, greater awareness of what such evidence is capable of would be desirable.

While police officers cannot be expected to fully understand all existing techniques there are resources such as the National Crime Faculty that are available to them to ensure that investigative opportunities such as this are not lost. The NCF was established in 1995 and was available to investigators in this case. It was established to prevent repetition of the failings in the Yorkshire Ripper case. The resources were available to investigators in this case, but were not used. It should be force policy to consult the NCF in cases such as this. Had that occurred in this case, the maggots would have been treated in accordance with best practice, even if police subsequently decided that forensic entomology was not necessary. This is especially desirable as defense lawyers and experts have no choice but to rely on the evidence from crime scenes such as this being properly treated by those attending crime scenes. In this case Sayers had no input into the treatment of the maggots, but his experts were severely hindered by decisions taken by the police, pathologist and scene of crime officers.

The evidence that the maggots could have given if properly treated has been lost. Sayers had no input into that at all, but he alone pays the price. As defendants and their representatives are affected by decisions taken by investigators at crime scenes a more equitable solution on what should be done in cases such as this needs to be found. Perhaps the interpretation of such evidence most favorable to the defendant should be adopted if through no fault of his own he cannot test such evidence adequately. However, by far the best solution would be to ensure that anyone handling entomological evidence is properly trained for such a task and can ensure that such evidence is treated in accordance with best practice. Ideally such evidence should always be handled by an experienced forensic entomologist. However, that might not always be practical due to time constraints or expert availability. In such cases it should be force policy to consult with resources such as the NCF to ensure that those handling the entomological samples are knowledgeable enough to ensure that the tasks are still conducted to the highest standards. If that is adopted as force policy defendants will face no disadvantage by not having immediate access to such crime scenes.

When a body is discovered, such as occurred in this case on May 26th 1998 it could not have been known if the case would be solved or if a confession would be obtained subsequently. Consequently, nobody could have known whether the entomological evidence would be required or not. Policy should be introduced to ensure that anyone collecting entomological samples is fully conversant with best practice and follows recommended procedures carefully. Training should be provided to any scene of crime officer and pathologist who attend such scenes to ensure that such

samples are properly collected, transported and stored and that environmental data is also obtained to optimum efficiency. Requisite funding for such purposes should be made available. The entomological evidence was not the only crime scene related issue in this case.

3) Fire-related Issues

The body of Russell Crookes had been partially burned, but little or nothing was established about the fire itself. Several items of debris were collected from the site where his body was partially burned. These included charred lumps which could have been identified by morphological analysis and if necessary chemical analysis of its constituents. This was not attempted. Again the police cannot be compelled to have this done. Nevertheless, it may have proved useful. However, there was an attempt to link Sayers to the crime by comparing the lumps with the result of burning some fuel tablets recovered from his college room, including hexamine. This experiment determined that these charred lumps had not originated from Sayers' room; it did not establish what they were. Neither the police nor Sayers' defense saw a need to do so; but, as different types of fuel (woods) burn differently, establishing what these lumps had been may have assisted in reconstructing the fire, which would have greatly assisted in testing Wallis' account on a number of issues. While the police and the Crown saw no need to do this, Sayers' defense should have done. As will be shown below, fire-related issues offered potentially useful lines of inquiry to challenge Wallis' veracity.

Numerous other items recovered from the murder scene, where the body was burnt, were tested for the presence of accelerants, in an attempt to link Sayers to the crime. No trace was found. However, Patricia Rapley, the forensic scientist instructed by the police, opined that it could have been used but burned off, though the findings were also consistent with no accelerant having been used. There was no scientific evidence at all to confirm or refute the use of an accelerant; yet Wallis' account that Pagan brand barbecue lighter fluid had been used was taken at face value. The real question is whether the accelerant would have been detected had it been used?

Somewhat surprisingly, Sayers' defense lawyers did not instruct a fire expert to consider any of these issues. Such an expert could have contributed to reconstructing the fire which could have enabled Wallis' account of the fire to be tested against the scientific evidence. The police and Sayers' defense did not consult a forensic pathologist with experience of fire damage. Nor did they consult a forensic anthropologist. It would even have been possible to estimate wind speed at the fire-site at the relevant time through experiments at the site in a similar manner to data-logging experiments. None of this was done at the time. It could still be done. Had this been done it would have assisted in reconstructing the fire.

Wallis gave more than one account of the duration of the fire. The discrepancy was never resolved. He also gave conflicting accounts of the measurements of the pyre or bonfire. One version of its dimensions was quoted by Rapley as being 1.5m in length, with the height of the wood used about 60cm tall, and the flames reaching another 60 cm higher. This suggests a fire of considerable intensity, yet the crime scene evidence and photographs are not consistent with such an account.

The scorch-pattern tails off. No actual measurements of the length and width of the scorch-pattern were taken. Nevertheless, the account quoted by Rapley implied a high temperature fire of over a couple of hours' duration. This was accepted by Sayers' lawyers without instructing an expert to consider these issues, even though Wallis' description of other events gives a duration of three hours and ten minutes, and the fire-site suggests a completely different story. Had they consulted a forensic anthropologist with requisite experience they would have discovered that the crime scene

photographs told a completely different story. The scorch-pattern does not indicate a high temperature fire, and nor does the damage to the body. Nor does it indicate a fire of more than two hours duration. Had the fire been built to the parameters indicated by Wallis the damage sustained by the cadaver should have been far greater. This suggests that Sayers' defence in particular missed a golden opportunity to allow the evidence obtained from the crime scene to test the veracity of Wallis' claims. In these circumstances a reconstruction of the fire based on the evidence recovered from both the burn-site and the body itself could have provided an excellent method for testing Wallis' account regarding the timing of the events and other fire-related issues.

The issue of when the fire occurred is of central importance to this case. If Wallis lied about that his whole time-line is wrong as well. Wallis' account is that it began minutes after the murder. His account is uncorroborated. However, there is evidence to suggest that it occurred days later. This issue has never been resolved, even though there is a scientific technique that could have done so at the time, or even now. A forensic botanist could have been instructed to consider the issue of post-fire plant regeneration or colonization of the scorch-pattern. Identification of the plants at the scene and observation of their growth habits could have assisted investigators to establish when the fire took place. A forensic anthropologist could have been instructed to consider the extent of damage observed to the body and the parameters of the pyre. It could even have been a part of reconstruction experiments. Unfortunately, Sayers' defense did not see the value of a reconstruction. Nevertheless, the fire can still be reconstructed even now. Such experiments and analysis by experts with relevant expertise and experience appear very likely to have provided fruitful lines of inquiry for Sayers' defense. Suffice to say the crime scene in this case was rich with opportunities to test Wallis' account – opportunities that were not taken. Police were not obliged to do so, nor can they be compelled to. They may not have had the resources to do so either. They collected sufficient evidence to put before a jury and secured Sayers' conviction. That is all that is required of them.

4) Missed Opportunities An Inadequate Defense

The performance of Sayers' defense lawyers at trial is harder to understand. There were several opportunities presented to them by the crime scene and samples obtained from it. The decision not to instruct a fire expert in such circumstances is baffling, especially as the Crown had instructed one. Had they instructed a forensic anthropologist and/or a forensic pathologist with experience of burned bodies they would have discovered a potentially devastating line of inquiry: that Wallis' descriptions of the fire is contradicted by evidence obtained from the crime scene. Furthermore, had they instructed a forensic entomologist and forensic botanist with relevant expertise and experience, they may have discovered evidence indicating that the fire occurred much later than Wallis claimed. The failure of Sayers' defense lawyers to do any of this indicates that they too are not fully conversant with the opportunities afforded to them by crime scenes.

Consequently, it would appear that defense lawyers could also benefit from training on crime scene issues. Such training should be provided and resources such as the NCF should also be available to defense lawyers, or a separate independent organization should be established to ensure that investigative opportunities that could assist defendants are not missed by lawyers unaware of potentially useful techniques.

5) Soil-related Issues

Soil samples were also collected from the excavation site as was entirely proper, though they were only used to make a comparison with soil samples that Sayers had in his room in another attempt to link him to the crime scenes. Analysis only served to establish that the soil in Sayers' possession had not come from the excavation site. Sadly the soil samples were not used to best effect. They were not examined for exoskeletons; nor were the clothing and footwear of Sayers and Wallis examined for traces of this soil, even though such analysis could have indicated whether either man had been inside the grave. No soil samples were collected from the fire-site, even though this could have assisted in determining when the fire occurred.

Despite collecting some spades, these items were never tested for traces of soil from the grave or tissue from the deceased. This is particularly important in the context of the failure to establish what implement had caused the mutilation. Had this been done at the time it may have been possible to tie that implement to the perpetrator or perpetrators. Wallis never gives a coherent account of how, why and when the mutilation occurs. Despite having possible weapons of mutilation in their possession police chose not to test them as was their right. Sayers' defense also declined to do so when it might have made a difference, although there was no guarantee that such a line of inquiry would have proved useful. Consequently, it may have proved difficult to obtain legal funding to pursue such a speculative line of inquiry. That would justify their decision not to pursue this line of inquiry.

6) Further Investigative Opportunities

Nevertheless, there were several opportunities to pursue realistic lines of inquiry from evidence obtained from the crime scenes in this case that were not pursued. Some of these techniques can still be used even now, more than six years later. The fire can be reconstructed. Data-logging and similar experiments at the fire-site and excavation site would allow experts to estimate the environmental conditions experienced by the body. Professor José Alfredo Piera y Pelliçer, a forensic entomologist at the University of Valencia has developed a revolutionary technique of artificially controlled maggot regeneration in a reconstruction chamber. Professor Piera has kindly offered to reconstruct the entomological evidence in the Sayers case. Professor Piera's technique is not the only possibility for obtaining scientific evidence to test the veracity of Wallis' account. Forensic botany may also have a telling contribution to make in this case. As with Piera's technique, the novel use of forensic botany requires accurate data on environmental conditions experienced by the cadaver. Both techniques need the most accurate data available on temperature, relative humidity, rainfall and light intensity, among other data. Both require the fire to be reconstructed, which means that accurate data on wind-speed at the relevant times would be needed. All of this data is obtainable even now. It will not be exactly the same as that experienced by the body, but it would be estimates that are based on scientifically validated techniques that have been accepted in courts of law. However, these techniques require access to the burn-site and excavation site. Permission to conduct the experiments on those sites was recently sought from the landowners, who happen to be Hadlow Agricultural College. Unfortunately, they refused to cooperate without a court order, which cannot be obtained solely to seek evidence.

Refusal of permission to conduct such experiments which would have been conducted discreetly is a rare occurrence, but cooperation cannot be compelled. However, if the tenant of Flat One, 7 James Street had a similar attitude to the Board of Governors of Hadlow Agricultural College, much of the evidence which ultimately secured the conviction of Jeffrey Gafoor could not have been obtained, a

particularly brutal murderer may still have been at liberty and five undoubtedly innocent men would continue to have to endure a thoroughly unjustifiable whispering campaign.

Conclusion

It is not enough to painstakingly collect evidence from crime scenes; once collected it must be stored under optimum conditions and be retained. Anyone investigating such cases must have complete unfettered access to all the evidence that may assist in solving these crimes. Before any samples are discarded or destroyed an independent review panel consisting of lawyers, forensic scientists, victims of miscarriages of justice and police should consider whether it is likely that any further useful evidence could still be obtained from such samples. After all, a seemingly open and shut case may turn out to be a miscarriage of justice.

The failure to realize these high standards in the Phillip Saunders Inquiry has cost current investigators a potentially important line of inquiry, depriving them of the chance to utilize the opportunities offered by advances in forensic science techniques that may have helped to solve the sixteen-and-an-half year old mystery of who killed Phillip Saunders. The Darvell brothers' case is clearer still. The most promising line of inquiry, the photograph and negative of the blood-stained palm-print was thrown away -- literally. That must never occur again.

The destruction of crime scenes as occurred in the Merthyr Tydfil case should never occur while investigations are still ongoing. Any decision to destroy a crime scene should only be taken by an independent review panel such as the one described above in order to ensure that the interests of all concerned are fully protected. The failure to utilize the crime scene to maximum effect in the Hadlow case by his own lawyers has deprived Sayers of the possibility to use forensic science to test the veracity of Graham Wallis' claims to maximum effect. It is also a matter of deep regret that the refusal of the Board of Governors of Hadlow Agricultural College to give permission to conduct data-logging experiments on its land, has not only deprived Sayers of the possibility of proving his innocence, but has hindered the testing of a revolutionary new technique in forensic science. Ironically an agricultural college is hindering the development of a new technique in the science of forensic botany!

Justice demands that evidence be allowed to speak, however inconvenient that may be to police or defendants. Crime scenes and the evidence obtained from them are and must remain impartial. The highest standards of treatment of crime scenes and preservation of evidence obtained from them must become the norm in all cases. Nothing less will suffice.

Notes

1. SGM+ STR typing was developed by the Forensic Science Service (FSS). It tests at ten genes or loci as well as amelogenin which detects the Y-chromosome. It was considerably more sensitive than its predecessor, which tested at six genes and amelogenin. SGM+ offers a random match statistic of 1:1000m.
2. Click here for a review of my book ***Fitted In: The Cardiff Three and the Lynette White Inquiry*** by the forensic pathologist Dr. Gyan Fernando http://www.geradts.com/~anil/ij/vol_003_no_002/reviews/pb/page006.html and an update of subsequent events in the Lynette White Inquiry http://www.geradts.com/~anil/ij/vol_003_no_002/reviews/pb/page006a.html by myself.

3. This murder took place in the district of Cardiff known as Butetown. Previously it had been called Tiger Bay.
4. Please click on the following link http://www.geradts.com/~anil/ij/vol_005_no_001/main.html to take you to the Forensic Entomology Special edited by Dr. Mark Benecke.