



## Message from Claude Roux – National President

Dear ANZFSS Members,

It is an understatement to say that forensic science currently experiences interesting if not challenging times. In Australasia and overseas, different 'broad business models' are being developed, partly strategically, partly organically and by and large driven by economic considerations. Some organisations try to continue to provide full (or near-full) services in a traditional way, but slowly stop providing some types of examination. This occurs because low volume cases in particular are associated with increased Quality Assurance and various compliance costs. A common solution given for how best to deal with these cases is 'outsourcing'. In that sense, the development of 'Centres of Specialisation' may bring at least a partial answer to the latter challenge.

Other organisations are implementing what could be simplistically called the 'Pathology Laboratory Model'. The forensic science laboratory is increasingly seen as providing a simple analytical service where most of the critical genuine forensic science thinking and professional judgment and expertise are left to others who sometimes have no scientific background. This may be seen as efficient in terms of case throughput and the bottom line. However, many cases call on forensic science not only to solve source attribution questions, but also to reconstruct an event, or at least provide an expert opinion to assist the court to reach a conclusion about what happened. The question of who

is best able to provide this service, as well as inform the best course of forensic science action in the 'Pathology Laboratory Model', remains to be adequately answered.

In a third model being tried, silos resulting from specialism are removed as far as possible. The integration of services and competencies occurs as early as possible and there is a strong focus on intelligence. Forensic scientists actively inform investigations as early as possible. This is certainly a more efficient use of forensic science in terms of value. However, it is also recognised that, by blurring the boundaries between police and traditional forensic science activities, this model is not without challenges, especially in an adversarial system.

This description is of course simplistic and a number of middle road solutions may emerge in the future. Further, each model has its pros and cons. Regardless of the business model, the main questions remain:

- What is the place and the role of the scientist in investigations and court proceedings?
- Are forensic scientists 'simple' ad-hoc advice providers or should they be more systematically involved in a collective problem solving exercise at all steps of the process, from the start of an investigation to court as well as in decision making related to a whole range of tactical, strategic, operational and, dare I say, political questions related to security at large?

### Inside this Issue:

Message from National President	1-2
Merchandise	2
Who's Who in the Council	3-4
22 <sup>nd</sup> International Symposium	5
Branch Reports	
Qld	6-7
NSW	8-16

As a professional Society representing ALL the constituencies of forensic science in Australia and in New Zealand, the ANZFSS should engage in this debate and help provide constructive improvement to the benefit of our members and ultimately the whole system. Being a forensic scientist should mean something, no matter where you work and what your status - we are not a special breed of trained monkeys...

ANZFSS Symposia are the hallmark of our Society, and it is with great pleasure that I inform the members that the Hobart Symposium closed its books with a surplus of exactly \$152,835. Gerard Dutton and his team, along with Conference Design, are warmly congratulated on this fantastic result. This will allow the Tasmanian Branch to grow with confidence as well as enable the Society to offer significantly more scholarships to attend

the ANZFSS 2014 symposium in Adelaide. Better financial certainty also prompted us to organise national insurance cover and therefore reduce significant costs previously incurred by the branches.

On the topic of Adelaide, this issue of the Newsletter contains a report by David Eitzen, Symposium Chair. I urge every member to read it. You will see that the organization is progressing very well. It seems a long way to go, but we all know time flies. Please visit [www.anzfss2014.com.au](http://www.anzfss2014.com.au) regularly to keep abreast of any development. And of course, pencil the dates of 31 August to 4 September 2014 into your diaries!

Forensically yours,

Prof. Claude Roux

**Australian and New Zealand  
FORENSIC SCIENCE SOCIETY**



## Merchandise

The ANZFSS previously carried a range of merchandise to help promote the Society and also to assist the local branches in raising money for functions and awards.

The central purchase and distribution of this merchandise has been discontinued.

It might still be possible to purchase items from the previous merchandise range from your local branch, but supplies will be very limited.

Some branches might continue to offer their own range of merchandise in the future. Please refer to your local branch's website for more details.

## Who's Who in the Council?

### Continuing our series profiling members of the ANZFSS Council



#### **Dr Jim Pearson – President Vic Branch**

Dr Pearson has been employed at the Victoria Police Forensic Services Centre since late 1986, where his initial duties involved the investigation and examination of illicit drug laboratories. However, since 1989, in addition to maintaining an operational casework role, he has been responsible for coordinating research and development within the Chemistry Division, encompassing drugs, fires, explosion and chemical trace evidence examinations. In that role he has had extensive interaction and liaison with many academic institutions within Australia, and attended national and international conferences and workshops, where he has presented papers on drug analysis, illicit drug laboratory examinations, explosive residue methodology and policy and philosophical aspects of forensic science. His current role is R&D Manager

(Chemistry) within the Office of the Chief Forensic Scientist.

From 1995 to 2012 he also had responsibility for the oversight of Quality Management within the Chemistry Division, and was responsible for the management of all aspects of quality under the requirements of the Division's accreditation with NATA.

Over the past twenty years he has co-supervised BSc (Hons), MSc and PhD projects of numerous students at several universities, in diverse subject areas including drug analysis, clandestine drug manufacturing processes, and the evaluation and development of methodology applicable to the analysis of explosive residues. He has presented at both Bomb Scene Examination and Clandestine Laboratory training courses and workshops, at both State and National levels. He was one of the first members of the multi-agency Australian forensic team to arrive at the scene of the Bali bombings in 2002. Jim has been actively engaged over the past ten years in both the development and practice of the Victorian approach to suspicious powders and the participation of Victoria in the CWALN for chemical warfare agent analysis. He has co-authored several papers in the peer-reviewed forensic literature, and is a visiting lecturer to several current university courses incorporating analytical forensic chemistry.

In real life Jim has several (grown) children, is an active scout leader, and hopes to 'retire' to the rural lifestyle one day

#### **Gerard Dutton – President Tas Branch**



Gerard has worked in forensic firearms and toolmarks investigation for over 26 years. He started his forensic career with the NSW Police Ballistics Section in 1987 after two and half years in general duties. As a lifestyle move in early 1995, he laterally transferred to Tasmania Police as the Sergeant in charge of their Ballistics Section in Hobart.

An ANZFSS member since 2000, for some years he has held positions as President and Vice President of the Tasmanian Branch and he was Chairman of the ANZFSS Symposium in Hobart in September 2012. Gerard has also held positions in a number of other national and international working groups and committees relating to his discipline.

Gerard has authored over 80 papers on firearms and toolmarks in

over a dozen technical, forensic and police journals, with about half published in the peer reviewed quarterly Journal of the Association of Firearm and Toolmark Examiners (AFTE). A Distinguished Member of AFTE since 1997, he has given expert testimony in court on hundreds of occasions in NSW, Tasmania, New Zealand and Norway. He continues to present within Australia and internationally at numerous forensic symposia, to police and various other groups.

**Anna Kmon – President NT Branch**



After completing a Bachelor of Applied Science, Anna joined the NT Forensic Science Branch in 2003 and worked in the Biology Unit until 2010 when she took up the role of Quality and Training Manager. Her role now includes coordinating training and authorisations for members of the Forensic Science Branch in Darwin and Alice Springs as well as overseeing the maintenance of accreditation at the two sites.

**Preliminary Announcement**

**EFFICIENT FORENSIC SCIENCE**

**ARE WE USING OUR EXPERTS EFFECTIVELY?**

A conference for lawyers, forensic scientists,  
medical professionals and others

**24<sup>th</sup> – 25<sup>th</sup> August 2013**

SMC Conference and Function Centre  
66 Goulburn Street Sydney Australia

Hosted by the Australian Academy of Forensic Sciences

Sponsored by the National Centre for Forensic Studies, Canberra,  
and the Centre for Forensic Science, University of Technology, Sydney  
and supported by the Royal College of Pathologists (RCPA), Australia

Further details will be posted at <http://forensicacademy.org/site/>

## ANZFSS 22nd International Symposium - 2014

### Update June 2013

The committee and I have been working hard to secure some great plenary speakers for our meeting and I am pleased to announce, hot off the press, that Dr Max Houck from Washington DC and Dr Christophe Champod from Switzerland have both accepted our invitation to attend. Together with Mark Reynolds (WA), Bryan Found (Vic) and Sebastian Marino (NZ), we are building a formidable team of plenary speakers that I am sure will both educate and stimulate us with their presentations. It is early days and we are in discussions with more speakers that will only strengthen our high profile presenters. Stay tuned via the website for updates.



The other main task at the moment is securing sponsors and exhibitors. The 2014 committee is committed to giving sponsors and exhibitors maximum exposure in the lead up and during the meeting. These companies and stakeholders in the forensic sciences are the backbone of the industry and we want to ensure that they feel welcome and part of the mainstream scientific meeting.

Having the lead up over two financial years has made discussions difficult for some companies to commit just yet but negotiations are ongoing and many have submitted an expression of interest.

There are still opportunities for companies to come on board at the Principal, Gold and Silver Sponsor levels. We are delighted that Pathtech, AFP, Labware and Rofin are some of the companies who have agreed to be there showing their latest products and services on offer.

The call for abstracts will be soon, so start to put your project outline down on paper and document your research.

The Adelaide Convention Centre is undertaking a major upgrade and the ANZFSS Twenty 14 meeting will be one of the first major events to utilize the new technology and seating arrangements. The outlook over the Torrens River is quite spectacular; as I'm sure you will agree with me when we stand in the foyer together with a welcoming drink in hand.

Look forward to seeing you in Adelaide. Don't be bashful, tell your friends, colleagues and associates and let's mark it in our calendars.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'David Eitzen'.

David Eitzen  
Chair, Symposium Organising Committee

## Branch Reports

### ANZFSS Queensland Branch

The Queensland branch has had three very interesting speakers so far this year, summarised below. The meetings have been well attended, with the committee organising drinks and nibbles after each meeting to allow members to talk further with the invited speakers. Speakers planned for future branch meetings this year include a forensic odontologist, a forensic pathologist, and a forensic entomologist.

Branch membership has been increasing over the past year, with approximately 100 financial members to date. The committee thanks all those who support the branch and regularly attend our meetings.

#### Guest Speaker 21 February 2013: Dr Wayne Petherick, Associate Professor of Criminology at Bond University.



Wayne is Associate Professor of Criminology at Bond University where he teaches Criminal Profiling, Applied Crime Analysis, Criminal Motivations and Crime and Deviance. His research areas of interest include stalking, personality disorder and self-esteem and crime, and forensic victimology. Wayne has authored or co-authored texts on Serial Crime, Forensic Victimology and Forensic Criminology. In addition to his academic work and research, he also works on cases including risk and threat assessment, homicide, rape, and stalking.

#### Synopsis:

In the early morning hours of the 18th of October 2009, Richard John Vollmer stabbed his girlfriend, Alisa DeMonie, to death. Mr Vollmer was subsequently arrested for the offence, charged, and convicted and is currently serving a life sentence. To the jury it was a straightforward case - little to no evidence in Mr. Vollmer's favour was raised. Upon examination however, a wealth of evidence existed as to Ms. DeMonie's mental state and emotional disturbance - including chronic methamphetamine abuse - that may play a role in having the case re-examined.

#### Guest Speaker 18 April 2013: Dr Michael Logan, Queensland Fire and Rescue Service Scientific Branch

Dr Michael Logan is the Director of the Queensland Fire and Rescue Service Scientific Branch and has been involved in managing more than 1200 HAZMAT incidents across Queensland, Australia and internationally.

He has a PhD in physical chemistry from the University of New South Wales and has been a Post Doctoral Fellow at the University of British Columbia. He also has various emergency management qualifications and is a HAZMAT specialist (NFPA 472).



Michael has delivered many invited presentations within Australia and internationally across all spheres of emergency management particularly in HAZMAT or CBRN emergency management. He also authored a variety of publications including a CBRN awareness DVD that has generated more than 20,000 copies.

The Scientific Branch he leads provided training to more 500 fire-fighters every year, and responds to an incident on average every day. The Branch has also received more than \$1 million worth of research funding over the past five years particularly focused on fire-fighter exposure characterisation.

**Guest Speaker 16 May 2013: Professor Claude Roux, Professor of Forensic Science and the founding Director of the UTS Centre for Forensic Science (Research Strength).**



*Claude Roux with Jacqui Wilson, Qld branch President.*

Claude Roux is Professor of Forensic Science and the founding Director of the UTS Centre for Forensic Science (Research Strength). He obtained a BSc and a PhD from the University of Lausanne, Switzerland. He moved to Australia upon the completion of his PhD in 1996. Over the last 15 years, he has supervised and completed more than 60 forensic research projects, including 5 University medals. He has attracted \$5M in competitive research grants in the last 5 years, including ARC, other Government and industry funding. He has a long and established reputation for effective collaboration with forensic and other government agencies in Australia and overseas as well as with other academic partners.

Claude's research activities cover a broad spectrum of forensic science including trace evidence and chemical criminalistics, documents and fingerprints. His research has been largely driven by his vision of forensic science as a genuine academic and research-based discipline. In addition to the publication of over 100 refereed papers and 25 book chapters and a large number of conference presentations, Claude's research attracted significant media coverage and 20 awards.

Claude is a member of the editorial board of five scientific journals and of a number of working groups in Australia and overseas, and is the current President of the Australian & NZ Forensic Science Society.

Written by Julianne Farrell, Qld Branch vice president.

## ANZFSS NSW Branch

### NSW Branch Meeting REVIEW: “Forensic Taphonomy; Processes of Decomposition and Preservation” presented by Professor Shari Forbes (07/09/12).



Guest Speaker Professor Shari Forbes with NSW Branch President Alison Sears at the September 2012 branch meeting.  
Photo by Annalise Wrzeczycki.

Dr Shari Forbes completed a Science degree in Applied Chemistry – Forensic Science and a PhD in Forensic Chemistry at UTS. She completed a postdoctoral fellowship at the Centre for Forensic Science at University of Western Australia, before accepting a position in 2005 as an Associate Professor at the University of Ontario Institute of Technology (UOIT) in Canada. Dr Forbes spent 7 years at UOIT where she held a Canadian Research Chair in Decomposition Chemistry. Dr Forbes also spent six months at Chaminade University of Honolulu in Hawaii assisting in the development of their Forensic Science program. She returned to UTS as an ARC Future Fellow and Professor in the Centre for Forensic Science and the NSW Branch of ANZFSS were lucky enough to have her present to our members at a recent branch meeting.

#### What is Forensic Taphonomy?

Dr Forbes defined the word *taphonomy* as coming from the word *taphos* meaning grave, burial and *-nomy* meaning system of processes, rules and knowledge. It is concerned with factors in the breaking down of human remains with incorporation of the elements. Processes include various environments, changes due to human and non-human agents and also dry and wet environments. Forensic taphonomy has developed within the disciplines of anthropology, archaeology, geology, soil science, entomology and decomposition chemistry.

The use of taphonomy aims to:

- Identify the deceased
- Determine the cause and manner of death
- Estimate post-mortem interval, and
- Locate clandestine graves.

#### Autolysis

Dr Forbes described the first process of decomposition, being *autolysis*, as the process of self destruction of cells by enzymatic digestion. Autolysis occurs first in the most metabolically active cells where there are high rates of ATP production which are more sensitive to anoxia. Hydrolytic enzymes previously contained in cellular compartments denature molecules and disrupt cellular membranes. With autolysis there is a general order in which tissues in the body decompose. Tissues, such as that in the pancreas (where cells have highest rates of ATP synthesis and membrane transport) shall decompose first. Gastric and pancreatic lipases, amylase and peptidases lead to rapid deterioration. Intestines, stomach, other organs of digestion and heart deteriorate rapidly.



## Decomposition

Decomposition commences around three minutes after death. The onset is governed by the processes of autolysis or self digestion. At this stage, cells have decreased oxygen levels and increased carbon dioxide levels. Cellular enzymes begin to destroy cells from the inside out. Hypostasis or lividity commences soon after death becoming fixed which is due to blood settling with gravity in the venous system along with rigor mortis forming. The time of onset of rigor mortis has many variables and is an inaccurate method of determining the time of death. The resolution of rigor mortis evidenced by secondary flaccidity is indication of putrefaction stages commencing.

## Putrefaction

Dr Forbes described the process of putrefaction being the post mortem destruction of tissues and organs by the action of bacteria and enzymes resulting in the formation of gases, liquids, salts and the complete absence of organs. The anaerobic environment results in the growth of bacteria and normal commensals, normally commencing in the iliac fossa region of the abdomen below the caecum evidenced by a green discolouration. This, along with lividity, can be confused initially as bruising by registrars approaching autopsies for the first time. The bowel has over 90% of the anaerobic bacteria; *Clostridium perfringens* being the dominant bacteria, with coliforms, diphtheroids and proteus species also present. Degradation of lipids, proteins, and carbohydrates to acids and gases results in bloating and distortion of body parts with the production of noxious odours. The elastic / lax tissues of the body such as the scrotum and breasts and soft facial tissues expand significantly with gases penetrating tissue planes, while protrusion of the tongue and purging of body fluids occurs due to gaseous pressure. Gases produced include methane, hydrogen, hydrogen sulphide and carbon dioxide. Enteric flora produces lactic acid, acetic acid, acetoacids and propionic acids leading to an acidic environment. Ethanol and acetone can affect post mortem ethanol levels in toxicology analysis.

Hydrogen sulphide produces a black precipitate called ferrous sulphide. Colour changes in the body are due to degradation of haemoglobin to bile pigments and precipitates of hydrogen sulphide in the vessels and tissues resulting in various colours known as *marbling*. Post mortem noxious odours are caused by the decarboxylation products *putrescine* and *cadaverine*, which are able to be absorbed by the skin and can be an issue in enclosed environments and detected by cadaver dogs. Putrefaction is influenced by:

- the habitat of the deceased
- the body build and amount of fat
- delays due to exsanguinations with lack of blood to channel bacteria
- congestive cardiac failure and oedematous tissue
- more rapid in children and slow in newborn unfed babies due to lack of commensal bacteria
- temperatures; increased temperature increases putrefaction
- heavy clothing traps heat and expedites the process
- external heating and use of electric blankets
- external injuries allowing exogenous bacteria facilitated with blood for bacterial growth.

## Adipocere

Dr Forbes described *adipocere* as a post mortem change representing a form of arrested decay of post mortem tissue, which is also known as grave wax or corpse wax. Adipocere comes from the Latin words *adeps* (fat) and *cere* (wax). Fourcroy, as early as 1789, described and termed the word. His work involved exhumations in Paris. Dr Forbes explained that adipocere can lead to preservation of evidence. Presence of adipocere is marked by fatty acids. Experiments using porcine remains in Lake Ontario, Canada, submerged at depths of 10 to 30 feet, showed increases in unsaturated and saturated fatty

acids, salts of fatty acids and hydroxyl fatty acids. Adipocere was less in cold temperatures and can also form in dry environments, water submersion and cold sea water as well as coffined bodies.

### **Acidity and Alkalinity**

Dr Forbes discussed changes related to acidity and alkalinity in the body and externally with soils. Within the human remains, intracellular pH shifts and enzymatic activity slows as proteins denature. Degradation lowers pH with free hydrogen and organic acids liberated. Acids form due to fermentation of carbohydrates. Low soil pH enhances mycotic growth which invades remains, can infiltrate bone and is also seen in bodies stored in mortuaries, and anatomical specimens in chemicals such as formalin and methylated spirits. Dr Forbes stated bodies create an acidic environment in soils progressing to an alkaline state as proteins break down over weeks and months. Anaerobic conditions and bacteria in soil and the contents of the bowel lowers pH. Dr Forbes stated sphagnum produces humic acid and tannins which slow decomposition. Mention was also made of the Tollund Man, the peat bog body and also the Moor's Murders.

### **Bog Bodies**

Dr Forbes showed photos of the Tollund Man. Bodies buried in acidic and oxygen poor conditions allow a specific form of preservation to occur i.e. mummification. Such preservation requires remains to sink in water or be buried into the ground and covered quickly after death. Water must be cold in the winter or spring months. The Tollund Man lived in late 4<sup>th</sup> Century or early 5<sup>th</sup> Century and the mummified remains were exhumed in May 1950 when two Danish brothers saw the face of the man when cutting peat for the stove. Carbon-14 dating estimated Tollund Man died around 350 BC i.e. early Iron Age. A ligature was in situ around the neck with features well preserved.

### **Scavenging Activity**

Scavengers can accelerate decomposition and can be responsible for disarticulation, scattering and burial of remains. Scavengers may also consume parts of a corpse, as it becomes part of the food chain. Scavenging activities involve small or large carnivores that consume carrion and contribute to decomposition. The type of predation varies with the geography as described by Dr Forbes who discussed the type of animals specific to Canada. In Canada scavengers include black bears, raccoons, turkey vultures, the American crow and porcupines. Carnivores will attack soft tissue especially the face, hands, genitals and the spongy ends of long bones to access bone marrow. In Australia domestic animals like cats and dogs, indoor and outdoor vermin such as rats, cockroaches and ants, have post mortem effects on degradation of remains and tissues. Fish, leeches and octopus etc consume victims of water-related deaths. Rodents cause extensive damage to hands, feet and ocular areas, leaving a distinct incisor pattern to be detected at post mortem. The reviewer remembers a lost bush walker's lower limbs were eaten by a goanna that was nearby! In the bush other animals include red foxes, ravens and brush-tail possums. Scavenger post mortem artifacts can be challenging for the inexperienced pathology registrar to identify, where they may be mistaken for signs of weapon use or assault to the deceased.

### **Entomology Effects**

Dr Forbes explained the role of forensic entomology in decomposition and determining time of death. Forensic entomology provides biological inferences regarding the circumstances surrounding a death and length of time since death. Approaches to forensic entomology include analysis of colonisation of the remains, and determination of the life stage of the insects observed, usually flies. Maggots at different stages of development, pupae and eggs are collected to develop an invertebrate colony to determine the Post Mortem Interval (PMI) taking into consideration variables such as season, temperature, shade, trace evidence, etc.

Issues forensic entomology can resolve include time of death, season of death, geographic locations, movement and storage of remains, sites of trauma on the body, origins of contraband, and use of drugs. Important is providing adequate sized ventilated containers with sustenance for maggots during transport to the Entomologist, in addition to specimens at different growth stages in ethanol. Other invertebrates such as beetles should also be collected. Dr Forbes discussed Canadian conditions in Ontario where she worked. She stated temperatures can be 30 degrees with high humidity in summer with skeletonisation after 18 days, with winter's day temperatures being -20 to -30 degrees with no changes in post mortem degradation even after 47 days. Dr Forbes stated autolysis and decomposition took longer depending on the freeze/thaw cycle. Decomposition of bodies buried below the ground depends on the depth of the graves, soil temperature, water and drainage with the water table, as well as permeability of the coffin. It was noted that different coffin material e.g. particle board, allowed different rates of decomposition. Air restriction, clay soils and deep burial retard decomposition while bodies in contaminated water with faecal coliforms enhance decomposition.

### **Mummification**

In mummification, tissue has survived active decay. Mummification is formed by dehydration and desiccation of tissue. A leathery parchment-type tissue remains, eventually reducing to bone. Dry heat with low humidity leads to mummification. This typically occurs in deserts and arctic regions, and in residences sealed off with high internal temperatures and low humidity without exposure to flies.

### **Exhumed RCMP Dog and Casket Burial**

Dr Forbes illustrated a below ground burial and preservation by discussing the exhumation of Canada's most famous police dog, *Cloud 11*. Cloud's remains were located with ground penetrating radar (GPR) and exhumed after being buried for 36 years at the North Bay detachment of the Ontario Provincial Police in October 2011. The deceased police dog was being relocated to the General Police Headquarters. Cloud's handler, Constable Ray Carson (retired) now aged 76 years was present at the exhumation with his son. Both handler and dog captured 123 fugitives and found many missing children and lost hunters. Cloud had been buried in a sleeping bag in a deep plywood casket with concrete. Dr Forbes stated the dog's body was well preserved with only minor adipocere present and decomposition of the head. Dr Forbes said plastic inhibits decomposition preventing access to micro-organisms and promotes adipocere formation.

### **Clothing and Decomposition**

Flies tend to lay eggs in seams of clothing and creases of a corpse. Maggots in their thousands can shift clothing and especially internal foreign bodies such as projectiles and broken ends of knives. The presence of clothing delays decomposition and accelerates desiccation leading to mummification. Homeless victims can have many layers of clothing, affecting decomposition rates. Research has shown clothing retards the process of decomposition in Spring and Summer. Clothing was found not to be a significant factor in Winter.

### **Lime and Decomposition**

Dr Forbes has conducted research into the effects of lime on decomposition. The effects of lime and its different types remains poorly understood with conflicting information available. Lime is the general term for quicklime i.e. calcium oxide. Hydrated lime is calcium hydroxide. If calcium carbonate is burned at high temperatures carbon dioxide is evolved with production of calcium oxide. Adding water produces calcium hydroxide. Lime is very alkaline with a pH of 12-13, while the optimal pH for soils' normal bacterial growth is between pH 4-10. Where lime is present, for example, at a gravesite, this departure from the optimal pH retards bacterial growth thus decreasing insect activity and decomposition.

Dr Forbes gave an interesting presentation on the effects of decomposition and putrefaction on human remains based on her extensive research. She shared stories and photos from her time researching in Ontario and Hawaii. Information on the use of porcine models in research and the role of entomology, as well as the effects of scavenging on remains and soil composition with preservation was most fascinating and our members followed up with some thoughtful questions.

### **References**

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EM.J. Schotsmans *et.al.* ***Effects of hydrated lime and quicklime on the decay of buried human remains using pig cadavers as human body analogues.*** Forensic Science International Vol 217; 10 April 2012, Issues 1-3, pp 50-59.

National Post. November 3, 2011. **Legendary police dog getting a new final resting place.** Tristin Hopper.

Image of Tollund Man courtesy of <http://www.silkeborgmuseum.dk/en/tollund.html>

- **Review by Glenn Wilcher. Edited by Annalise Wrzeczycki (NSW Branch, ANZFSS).**

**ANZFSS NSW Branch News continued on next page**

The Scientific Working Group for Forensic Toxicology (SWGTOX) has published a new standard titled *SWGTOX Standard Practices for Method Validation in Forensic Toxicology*. It can be viewed at <http://www.swgtox.org/documents/Validation3.pdf>. Please visit the SWGTOX website at [www.swgtox.org](http://www.swgtox.org) to keep abreast of SWGTOX activities.

The mission of SWGTOX is to develop and disseminate consensus standards for the practice of forensic toxicology. Objectives of SWGTOX include establishing standards for the practice of forensic toxicology, including standards, practice, protocols, quality assurance and quality control, education and training requirements for those practicing forensic toxicology, accreditation of forensic toxicology laboratories and certification of those practicing forensic toxicology. Additionally, SWGTOX has provided guidance for the development of a Code of Professional Conduct for forensic toxicologists and laboratories, has identified general areas of research and development needs in the field of forensic toxicology, and will promote public awareness of the field of forensic toxicology

## NSW Branch Annual Dinner REVIEW: “Strike Force Tuno” presented by Detective Inspector Gary Jubelin (NSWPF). Friday 23 November 2012.



*Guest Speaker Detective Inspector Gary Jubelin with NSW Branch President Alison Sears at the 2012 Annual Dinner, held at UTS's Aerial Function Centre. Photo by Annalise Wrzeczycki.*

Detective Inspector Gary Jubelin joined the NSW Police Force in 1985 and has 25 years of continuous experience as a criminal investigator. He performed criminal investigation duties at Local Area Commands (LACs) for four years before transferring to Major Crime where he performed duties at the Armed Hold-up and Organised Crime Units before specialising in Homicide Investigations. In 2004 he was promoted to Detective Inspector and performed duties as the North

Shore LAC Crime Manager, where he continued to lead a number of major investigations. In 2007 Detective Inspector Jubelin was transferred to the Gang Squad then seconded to Homicide to lead Strike Force TUNO-2 and is currently attached to the Unsolved Homicide Squad. Investigations led by Detective Inspector Jubelin include the shooting murder of housewife Barbara Saunders in Normanhurst, the murder of two year old Jayden March at Sutherland, the organised crime murder of car dealer Bob Lubjic who was thrown off The Gap and the re-investigation into the serial murders

of three Aboriginal children at Bowraville in the early 1990's which is still ongoing. Detective Inspector Jubelin also led Strike Force TUNO – 2; one of the largest murder investigations in the state's history, first becoming involved in this investigation in 2001 when he led Strike Force TUNO set up to investigate the abduction and murder of prisoner Terry Falconer. Due to evidence uncovered, the terms of reference were expanded to include eight unsolved murders, numerous shootings and attempted murders. This Strike Force and subsequent investigation has resulted in the arrest, charging and conviction of 14 offenders for multiple offences including murder, attempted murder, shootings and kidnappings.

Detective Inspector Jubelin was our special guest speaker at this year's NSW Branch ANZFSS Annual Dinner. His presentation commenced with him recognising the various disciplines in forensic science and describing the scientists role as being a 'big stick' knowing that evidence provided by the forensic sciences added confidence to the investigation, particularly in cases where DNA evidence is able to lead to an arrest and charges. Strike Force TUNO, upon which the television series Underbelly: BADNESS was based, involved the abduction and murder of Terry Falconer. Inspector Jubelin mentioned the humorous history behind the word “badness” and how he had used the word only to find it later utilised for the television series (whilst not actually being in the dictionary!)

Fifty two year old Falconer was working at a smash repair business in the south west Sydney suburb of Ingleburn on day release from Silverwater Prison. Inspector Jubelin described how three men impersonating undercover police and driving a blue Commodore modified to look like an unmarked police vehicle, arrived at the premises and searched Falconer, hand-cuffed him and pushed him inside the vehicle. Whilst in the vehicle, Falconer's face was covered with a cloth doused in chloroform. Unconscious, he was driven to where a van was parked, dragged out of the vehicle and placed in a large metal box, then transferred to the van. The three men separated with one driving with Falconer to a house in North Turrumurra, where two men Anthony Perish and Matthew Lawton were waiting. They would later open the metal box and confirm the abductee was Falconer. The metal box was

secured with Falconer inside and driven to the town of Girvan on the mid-north coast of NSW where the box was opened and they discovered Falconer was dead. Anthony Perish and Matthew Lawton then proceeded to hoist Falconer's body up with a block and tackle and dismembered the body. Sean Laurence Waygood, an Army Reservist who worked as a security guard at pubs and nightspots in Sydney, and who would plead guilty to kidnapping Falconer, told Police that Anthony Perish had removed Falconer's teeth. Inspector Jubelin said that the teeth were smashed using a ball hammer. The Inspector also described how the remains of the dismemberment were placed into six plastic bags, which were wrapped in chicken wire and weighed down, then dumped in the Hastings River in Northern NSW. Inspector Jubelin said DNA which assisted in the investigation, was found at the property at Girvan where the body was cut up in the shed. One motive for the abduction and murder of Terry Falconer was the shooting of Anthony and Andrew Perish's grandparents in 1993 in the suburb of Leppington, which remains unsolved.



*Open source photos of Anthony Perish & Sean Waygood's arsenal and a photo taken during their arrest in January 2009.*

#### Background of brothers and family

The Perish brothers grew up in Leppington as grandchildren of Croatian Immigrants. Their father ran a family egg business. In 1993 the grandparents Albert and Frances Perish were shot dead in their home. Anthony, at age 23, was on the run for amphetamine supply, being manufactured on the family property. He spent years hiding out at

Turrumurra, the property at Girvan and in South Australia. He was known to have contact with the Gypsy Jokers motorcycle gang and disgraced solicitor Justin Hill. His brother, Andrew Perish, was a member of the Rebels outlaw motorcycle gang and had drug convictions.

Waygood and a man named Keith Payne committed a number of armed robberies. Other crimes were also committed with Michael Christiansen and Jeremy Postleweight. It has been reported that the activities of Waygood and Anthony Perish involved intimidation, murder and debt collecting of monies. In 2001 Waygood wounded Gary Mack who owed money, shooting him outside the Peakhurst Inn, hitting him in the back. This was established at the sentencing of Waygood, as reported in the Sydney Morning Herald.

#### Mistaken Identity

Waygood in 2002, aided by Christiansen attempted to murder a Bandido's member at a pub in Haymarket. This incident had originated from an assault that had occurred at a nightclub. The intended targets were Felix Lyle and Dallas Fitzgerald who were Bandido members. At the bar Christiansen pointed out a target to Waygood who shot at the person eight times but the wrong person had been identified. Sean Waygood pleaded guilty to the shooting of Ranieri Puketapu, who apparently looked similar in appearance to the real target, and admitted to conspiring to murder the Bandido's members. After the shooting, Waygood set fire to the stolen van he used which had the outer clothing he had worn it in. Inspector Jubelin stated that NSW police obtained DNA from that crime scene (and specifically from some of the burnt material) and matched it with a DNA sample provided by the Queensland Police Service which had been collected at a murder scene (also involving burnt clothing in a vehicle); a commendable example of interstate police intelligence cooperation.

Waygood and others, had committed armed robberies and also an Aggravated Break & Enter to obtain chemicals for drug manufacture. A number of the persons charged by SF TUNO were convicted.

## Properties under surveillance in Mudgee and Girvan

Inspector Jubelin mentioned that extensive covert surveillance was conducted over the course of the Strike Force TUNO investigations; criminals would talk in code which the police were able to decipher. In 2008, police discovered a property at Mudgee which was linked to persons under investigation and the matter in which the shed was set up at that property lead police to believe it would be utilised for future criminal activities. This property therefore held particular investigative significance to members of Strike Force TUNO and considerable covert surveillance was conducted at this property. The perimeter of the property itself had camera surveillance linked to a control centre inside the house.

Anthony Perish had a slab poured on the property at Mudgee. Inspector Jubelin showed aerial photographs of the property. A basement had been built under the slab for use as a clandestine drug manufacturing laboratory. Inspector Jubelin described how they conducted surveillance and checked motels in Mudgee. Police also discovered during their investigation how the property at Girvan had been set up with 'booby traps', including remote-controlled detonation devices and automatic firearms.

## Paul Elliot Murder

Inspector Jubelin provided an overview of the murder investigation of Melbourne underworld figure, Paul Elliot. Having driven a rental car from Melbourne with his girlfriend, Paul Elliot arrived in Sydney to deal with a drug issue relating to poor quality drugs. His intention was to recover monies after a bad drug deal. He advised his girlfriend "if this doesn't go well you might not see me again". Two days later, after he hadn't returned, the girlfriend flew back to Melbourne, not saying anything. Inspector Jubelin stated that Elliot's body was placed in a toolbox with holes in it at Birkenhead Point, Sydney and thrown overboard into the ocean at Sydney Heads, 130 meters deep (refer to SMH article, 2009).

The Inspector said metal shavings were found in the boat which forensically matched the toolbox. Elliot's rental car was later found burnt out at Redfern. The criminals had a storage unit which was under surveillance by police. The police located Elliot's bag and wallet; exhibits which would be forensically tested.

Detective Inspector Jubelin provided a synopsis of the significant results for Strike Force TUNO;

- 6 offenders involved in the Falconer murder have been convicted
- 2 offenders involved in the shooting of Gary Mack convicted
- 2 offenders convicted for attempted murder of Raniera Puketapu
- 4 offenders involved in the murder of Paul Elliot have been convicted
- 2 offenders involved with conspiring to murder Felix Lyle and Dallas Fitzgerald have been convicted
- Interstate arrest warrant issued against an offender for the murder of Michael Davies on the Gold Coast

The presentation by Detective Inspector Jubelin was very informative, entertaining and provided an amazing insight into the criminal world. He illustrated the dangers associated with investigations and covert surveillance operations and the effects on police personally in their private lives over many years of such strike force operations.

The NSW Branch of the ANZFSS extends thanks to Detective Inspector Jubelin for generously donating his time to present at the 2012 Annual Dinner.

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**Review by Glenn Wilcher. Edited by Annalise Wrzeczycki (NSW Branch, ANZFSS).**

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