GENERAL INFORMATION ON FORENSIC SCIENCE

Introduction

The Forensic Services Department is located at:

- The Victoria Police Forensic Services Centre (VPFSC) at Macleod;
- The main Fingerprint office at the Police Complex, St Kilda Rd, Melbourne; and,
- 11 Victorian regional offices for Fingerprints and/or Crime Scene;

It is headed by the Director, Alastair Ross, who reports directly to the Chief Commissioner of Police.

The word “forensic” means pertaining to the Courts, so forensic science is not a particular branch of science but the application of science to legal purposes.

Forensic Pathology and Medicine

The Victorian Institute of Forensic Medicine (VIFM) is part of the Coronial Services Centre in South Melbourne. One function of the VIFM is to determine the medical cause of death, and it employs medical staff, toxicologists and biologists with this aim in mind. Autopsies are performed by doctors who have specialised in Pathology, and the scientists analyse samples taken from the body. VIFM also performs civil paternity testing for the courts and has medicos who specialise in clinical forensic medicine.

Contact details;
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What type of casework is performed at the Forensic Services Department?

The main casework types performed at Forensic Services Department are:

**Drug Analysis**: detection and identification of drugs and poisons in substances and determining the quantity of the drug

**Pharmacology**: determination of alcohol (and possibly drugs) in blood and urine samples (usually from motorists after an accident)

**Clandestine Laboratories**: Investigations of illegal drug laboratories

**Document Examination**: handwriting and signature comparisons, and examinations for alterations, obliterations and indentations

**Fire and Explosion Investigation**: investigation of fires or explosions by examining the effects, determining a cause and analysis of residues

**Chemical Trace Evidence**: identification and/or comparison of materials such as glass, paint, metals, soils, fibres, and firearm discharge residues

**Audio**: enhancement and analysis of audio and video recordings

**Biological Examination**: detection and identification of biological material such as blood, semen and hair, bloodstain pattern analysis

**DNA Science**: DNA profiling of samples and comparison of profiles from victims, suspects, and scenes, and operation of the DNA database

**Botany**: botanical identification of plant material including cannabis and opium poppies, and examination of trace botanical material from crimes

**Fingerprints**: development of latent prints and comparison to fingerprint database and to fingerprints taken from persons of interest

**Crime scene**: searching, recording of a scene and collection of relevant exhibits, examination, enhancement and comparison of shoe, tyre and tool impressions, photography and/or video recording of crime scenes, mapping of scenes

**Ballistics**: examination of scenes and exhibits related to firearms; firearms safety testing, striated toolmark comparison

**Vehicle Examination**: examination of suspect vehicles to establish original identity

**Photographic Processing**: development of films to negatives for all Victoria Police and production of prints for Court

**Disaster Victim Identification**: is performed in cases where there are a number of deceased and there is a question of identity to be determined by the Coroner
Is Forensic Science really like the television show CSI?

In Australia, the approach to crime investigation is not exactly as you see it on television. This may be because the duties are different in the USA or it may be artistic licence to make the show more entertaining.

Where is it similar?

Many of the scientific techniques shown are based on reality and many of the results obtained are also possible. The closeups of items shown are also usually realistic. Some of the types of examinations discussed are however not common (eg cholesterol level of piranha)

Where is it different?

The duties as shown on CSI are a combination of three different positions as performed in Victoria.

Role 1. Detective
A detective (not the crime scene examiner) is really the investigator in a case. The detective will be the first called to a scene. In many cases, the detective will process the scene by taking notes and photographs and then collecting any items for analysis and submitting them to the Forensic Services Department. Detectives also call out any services required. From the Forensic Services Department the callout services include:

- Crime Scene
- Firearms
- Gunshot Residue
- Fingerprints
- Video
- Clandestine Drug Laboratories
- Fire and Explosion Investigation
- Disaster Victim Identification

The detective is also the one responsible for the interviewing of suspects, victims and witnesses.

Role 2. Crime Scene Examiner
If the Crime Scene Examiner attends they record, search and possibly interpret the scene and collect items. The scene can be recorded using notes, sketches, photos and possibly plans and video.

Role 3. Forensic Scientist
At the laboratory, the items are then forwarded to each of the relevant specialist areas for examination and analysis and only a few (such as shoeprints) would be retained for examination by the Crime Scene Examiner.

The forensic scientists are specialists, not experts in every field, ie there are separate specialists for flammable liquid residues, DNA, Drug Analysis, Documents, Fingerprints, etc.

The analysis time is often longer that depicted on television and can require from hours to days. There are very few scientific instruments that give a result in 5 seconds as shown on television.

Conclusion

Television shows like CSI have raised the profile of forensic science and its use and importance in crime investigation. However (unfortunately!) there are no jobs available in Australia like those depicted on CSI. It shows a combination of duties performed by Crime Scene investigators, Forensic Scientists, detectives and others.
Forensic Science Evidence

The results of an examination can be used either to give intelligence to the investigators or it may become part of the evidence for Court. Sometimes the forensic science evidence is very strong or it may just be corroborative and form part of the case along with evidence of interviews and witnesses.

It can be perceived that forensic science is only to help police but in fact, the scientific results can give a more complete picture as to what may or may not have occurred. This often can exclude a suspect as being the source of the physical evidence.

Educational Requirements

Unsworn Police positions
Unsworn members of Victoria Police are employed as public service staff and are not required to attend the Police Academy and join Victoria Police as sworn members. The number in brackets is the approximate number of current employees and gives an idea as to the job opportunities in these areas

Scientists (60 staff)
FSD usually employs qualified scientists (i.e. they have completed at least a three year degree in science at a tertiary institution) and once employed they are given a training program with the Forensic Services Department so that they can apply their general scientific knowledge to specialised forensic examinations and analyses. Most of the positions at FSD require a degree with a major in chemistry/biochemistry or molecular biology/genetics and there are limited positions for scientists with botany, materials science or other specialties in their degree.

Scientists are employed at FSD to work in a particular team and therefore the advertised position will specify the major study required in the science degree. e.g. for Drug Analysis a Chemistry major is required, for DNA Science, a major in Molecular Biology/ Genetics or similar is required.

Audio Engineers (3 staff)
FSD employs Audio Engineers or Scientists (with a major in acoustics) for enhancement and analysis of audio and video tapes.

Vehicle Examiners (5 staff)
Motor mechanics are employed to perform examinations on vehicles of questioned identity ie where it is suspected the identifying features have been altered.

Fingerprint staff (40 unsworn staff)
The staff member must complete the Certificate IV of Applied Science (Forensic Investigation). This may be commenced prior to employment, although, more commonly, it is completed as part of the training provided by FSD. Although no other qualification is required, there are usually so many applicants for a position; successful applicants usually have some form of technical background. All commence duties as Fingerprint Finders (attending minor scenes to dust and lift latent prints) and may, after some years, progress to become Fingerprint Experts and compare fingerprints from scenes and exhibits to those from suspects.

Technical Support staff (10 staff)
FSD (like most scientific employers) also has support staff including photographic processing staff. These people may have some scientific qualification (such as a Certificate) or may have been trained on the job.
Sworn Police positions (30 staff)

Positions for sworn Police are available in Crime Scene Examination and Firearms and Toolmark Examination. The positions are for Senior Constables, which in Victoria Police requires both about 4 years experience at normal operational duties (ie at a Police Station) and passing the Senior Constable exam. Extra qualifications such as a science degree are not required.

Courses in Forensic Science

Currently, as far as we know, there are five courses in Forensic Science available in Victoria.

1. Certificate IV in Forensic Science Investigation at Swinburne University of Technology.
2. Diploma of Applied Science (Forensic Investigation) at Swinburne University of Technology, (available only to employees of Victoria Police).
3. Post graduate Diploma in Forensic Science at La Trobe University.
4. Bachelor of Forensic Science at Deakin University (Geelong Campus).
5. Bachelor of Science-Medical, Forensic and Analytical Chemistry at Victoria University of Technology (Werribee Campus).

However, when employing a scientist at FSD, the first requirement is that they have the appropriate major study in their science degree for the position. After this, other aspects are considered, such as completion of the above courses, communication skills and job experience.

All the courses have a limited intake of students each year, and completion or enrolment in any of these courses does not lead automatically to a job at the FSD. Also in any one year, there are more graduates from these courses than the number of vacancies at FSD and VIFM.

Career Advice

It must be understood that Forensic Science is a very small area of specialisation that may be available after selecting and qualifying in your desired profession. The two professions that lead to Forensic Science are Scientist and Police Officer. It is important to understand that employment in this field is limited; the possibility of having to obtain work in other areas in your profession needs to be considered as an option.

If you are more interested in coordinating the overall investigation, interviewing people, following leads and collecting all the evidence for court, then these are more the tasks of a sworn Police member. There is also a VicPol project to train and use Senior Constables as Regional Crime Scene Officers (RCSO) to attend property offences such as burglaries and to process the scene with photos, fingerprint lifts, and DNA swabbing. These duties are performed for the Region and the RCSOs are not employees of Forensic Services Department.

Victoria Police Recruiting generally advises applicants to not focus on one particular area of interest, but look at an overall career in Policing. There are over 500 different types of positions within Victoria Police. Further information can be obtained from Police Recruiting, by telephoning 13 2001.
Employment Opportunities

Unsworn staff
The employment opportunities are limited as, there are only about 80 professional forensic scientists employed in the State of Victoria, with vacancies usually occurring as a result of resignation (perhaps 4 to 6 in a year). Two or three vacancies occur in fingerprints. For each vacancy advertised, there are many interested applicants.

Sworn staff
Two or three vacancies are advertised each year, usually in the Crime Scene area.

Further Information

Further information is also to be found in the Victorian Job Guide (available through your secondary school) under “Forensic Scientist”, “Laboratory Technician”, “Police Officer” and in the general category of Scientific Jobs.

Some useful sites on the Web:

   Located at 283 Queen St., Melbourne, Victoria, NIFS was established as a National Common Police Service and commenced operations in 1992. Their web site consists of a brief overview of NIFS, its history, goals, and personnel. A comprehensive list of forensic links is included.

2. Victorian Institute of Forensic Medicine www.vifm.org
   The VIFM site contains information about the Institute, with information for families, the community, students and other links.

FSD vacancies are advertised in:

   Public Service Positions  www.jobs.vic.gov.au
   All Victorian Public Service positions are advertised here. Interested persons can also register to be notified if a position of interested is posted.

   The Age  www.mycareer.com.au
   The Melbourne daily newspaper advertises FSD public service vacancies under “Forensic Officer”.

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