Technology at work

Forensic science drives many advances in technology. Crime-fighters today have at their disposal a huge range of ingenious and powerful techniques. Some are used in everyday crime investigations. Others have their place in forensic laboratories.

▲ A forensic scientist uses a comparison microscope and a computer database called Bulletproof to match the markings on a fired bullet with one held in the records.

Bullet proof

In order to combat the rise of gun crime in many countries there have been a number of major technological developments. For example, Kevlar, a material used in protective body armour which prevents a bullet from reaching the skin, has saved many lives. In the laboratory, bullets can be analyzed and quickly matched with a particular firearm.

Keeping watch

Close observation of suspects, or surveillance, plays a key role in crime-fighting. Some law-enforcement agencies can apply for the right to put suspects under surveillance using electronic taps of their telephone and monitoring their emails. In some cases, they bug a suspect's home or workplace with tiny, hidden cameras and microphones.

▼ A laser beam (red) can map with great accuracy the path of a bullet, or its trajectory. This technique can pinpoint the exact location from where a gun was fired.

◄ This close-up of a scanning electron microscope (SEM) shows where a sample is placed and bombarded with electrons. SEMs can magnify objects up to 10,000 times.

Seeing the invisible

Forensic scientists use powerful instruments to find and investigate the smallest traces of tell-tale evidence. Scanning electron microscopes (SEMs) are powerful microscopes that send out a beam of electrons. SEMs allow users to study the tiniest details on the surface of a substance such as a pollen grain or gunshot residue.

▲ This SEM shows the shell of a dermestid beetle that was found in the hair of a dead body. This beetle feeds on bodies about two months after death. The study of these insects can give valuable clues about the time of death.