**Forensic Science History**

**The Early Years**

Without question, the field of forensic science has come a very long way since its recorded beginnings in the 700s, when the Chinese used fingerprints to establish the identity of documents and clay sculptures.

This field is one of the few areas of law enforcement where science, technology and crime-solving meet. This combination supports the Theory of Transfer: "When two objects meet, some evidence of that meeting can later be found and verified."

A few significant advances occurred in the years prior to 1800. In 1248, a book, *Hsi DuanYu (the Washing Away of Wrongs)* published by the Chinese, described how to distinguish drowning from strangulation. It was the first recorded application of medical knowledge to the solution of crime. In 1609, the first treatise on systematic document examination was published in France. Then in 1784, one of the first documented uses of physical matching saw an Englishman convicted of murder based on the torn edge of a wad of newspaper in a pistol that matched a piece remaining in his pocket.

**The 1800s**

In the 1800s the field of forensic science saw substantial progress. The decade saw:

* The first recorded use of questioned document analysis.
* The development of tests for the presence of blood in a forensic context.
* A bullet comparison used to catch a murderer.
* The first use of toxicology (arsenic detection) in a jury trial.
* The development of the first crystal test for hemoglobin using hemin crystals.
* The development of a presumptive test for blood.
* The first use of photography for the identification of criminals and documentation of evidence and crime scenes.
* The first recorded use of fingerprints to solve a crime.
* The development of the first microscope with a comparison bridge.

Forensic science was significantly applied in 1888, when doctors in London, England, were allowed to examine the victims of Jack the Ripper for wound patterns.

**The 1900s**

Early forensic specialists were self-taught. There were no special schools, university courses or formal training. The establishment of a forensic science curricula in 1902 by Swiss Professor R. A. Reiss at the University of Lausanne, Switzerland, was one of the first steps towards establishing forensic science as an academic discipline.

It wasn't until the early 1930s that universities began offering courses and degrees in criminalistics and police science. In 1950, the University of California at Berkeley established one of the first academic departments of criminology/criminalistics, and the American Academy of Forensic Science (AAFS) was formed in Chicago.

Almost every year in the 1900s recorded an advance in the field. This century saw the:

* Establishment of the popular practice of using the comparison microscope for bullet comparison in the 1920s.
* Development of the absorption-inhibition ABO blood typing technique in 1931.
* Invention of the first interference contrast microscope in 1935 by Dutch physicist Frits Zernike (for which he received the Nobel Prize in 1953).
* Development of the chemiluminescent reagent luminol as a presumptive test for blood.
* Study of voiceprint identification.
* Invention of the Breathalyzer for field sobriety tests.
* Use of the heated headspace sampling technique for collecting arson evidence.
* Development of the scanning electron microscope with electron dispersive X-ray technology.
* Identification of the polymorphic nature of red cells.
* Enactment of the Federal Rules of Evidence (1975).
* Evaluation of the gas chromatograph and the mass spectrometer for forensic purposes,.
* Development of the polymerase chain reaction (PCR) technique for clinical and forensic applications.

The 1980s ended with a few DNA firsts: the use of DNA to solve a crime and exonerate an innocent suspect, in 1986, and, in 1987, the introduction of DNA profiling in the U.S. A criminal court case in which the admissibility of DNA was seriously challenged set in motion a string of events that culminated in a call for certification, accreditation, standardization and quality control guidelines for both DNA laboratories and the general forensic community.

In 1994, the DNA Databank legislation was enacted. By the end of the decade, significant progress had been made in the utilization of DNA analyses in casework in the State Police Laboratory System.

**21st Century**

The science of forensics is now recognized as a critical ingredient in law enforcement and the solution of crimes. Protecting a crime scene from contamination and gathering and interpreting evidence accurately have become some of the most critical ingredients in crime-solving.

As a result, advances in technology are being applied to the finite and exacting field of forensic science, a field in which technical competency is achieved only by the synthesis of a number of factors, including training, experience, supervision, continuing education, proficiency and an appreciation of scientific methods and protocols projected against a background of stringent professional ethics.

Now that we are in the 21st century, forensic science must continue to develop and mature. In recent years, the blend of science and technology has enabled police to solve many crimes that once would have been considered beyond resolution.

The State Police Crime Laboratory System is at the forefront of efforts to develop new scientific crime-fighting capabilities and methods, including the use of databanks, high-tech equipment, tele-forensics and training involving the use of simulated crime scenes.