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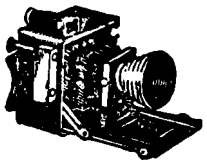

Judge Reverses Fingerprint Decision

(This article is reprinted from the March 14, 2002 issue of The Los Angeles Times.)

By **STEVE BERRY**

A federal judge who stunned the legal community earlier this year by forbidding the use of a fingerprint expert's opinion in a Philadelphia murder trial reversed his decision Wednesday .

Noting that a three-day hearing two weeks ago provided new information, U.S. District Judge Louis Pollak said, "I have changed my mind."

The 59-page ruling is a major setback for lawyers across the country who have been raising a series of legal challenges to fingerprint evidence. The challenges began emerging because of U.S. Supreme Court rulings in recent years that have imposed more rigorous standards for the admission of scientific and expert testimony.

Until Pollak's initial ruling Jan. 7 in their favor, challengers had suffered one defeat after another.

Opponents of fingerprint evidence considered the ruling a turning point that would become the basis for successful challenges in other courtrooms.

"It definitely throws a wet blanket on their hopes," said David Faigman, a professor at the Hastings School of Law in San Francisco.

U.S. Atty. Patrick Meehan, whose office is prosecuting a murder trial in which fingerprints are key evidence, called the decision a major victory.

"It is certainly an important conclusion for law enforcement," he said.

In his earlier ruling, Pollak said fingerprint comparison techniques have not been adequately validated through research, that they don't incorporate a means of determining how often examiners err and that they don't use objective standards for determining whether two prints match.

As a result, Pollak said in January, an expert would be allowed to identify matching details of prints but could not specifically say that a defendant's print matched those found at the scene.

In his ruling Wednesday, Pollak reversed one of his major findings: that the subjectivity of fingerprint comparisons meant that the techniques for matching crime scene prints with known prints was not governed by any describable set of standards.

"On further reflection, I disagree with myself," wrote Pollak, a former dean of Yale Law School.

While continuing to maintain that fingerprint examiners' opinions are subjective, Pollak concluded Wednesday that they are no more subjective than many other

forensic science opinions accepted by courts. Moreover, he said fingerprint techniques allow for less subjectivity than many other fields of expertise.

Pollak held to his earlier opinion that the reliability of fingerprint methods has not been subjected to scientific testing and said such tests "would clearly aid in measuring [the techniques'] reliability."

But he said defense lawyers in the case have not shown that the FBI, which did the fingerprint analysis, has a high error rate.

"With those findings in mind, I am not persuaded that the courts should defer admission of testimony on fingerprinting -- until academic investigators -- have made substantial headway on a verification and validation research agenda."

Although Pollak accepted the reliability of the FBl's examiners in this case, he clearly was unimpressed with the proficiency tests it gives to its examiners to check their error rates.

He accepted the defense arguments that the tests were too simple and did not adequately test real fingerprint comparisons.

"On the record before me, the FBI examiners got very high proficiency grades, but the tests they took did not," he said.

Pollak also held firm to his January opinion that fingerprinting is not a science, a claim that experts in the field continue to maintain. But he said the Supreme Court rulings do not require that expert testimony be scientific testimony.

Robert Epstein, a federal public defender in Philadelphia who has been a leader in the challenges, said he was disappointed. But he said Pollak's ruling still recognizes that fingerprint technology fails to meet some important reliability standards, such as the lack of testing.

Epstein said Pollak was wrong to accept the FBI's expertise simply because the defense didn't show that the agency had never made mistakes when matching fingerprints.

"The burden of proof is on the prosecution to show the reliability of their expert testimony," Epstein said. "Ultimately, the court of appeals is going to resolve this issue, either in this case or some other case."

The rulings mean that the murder trial in which it came will resume Monday. The three defendants are charged with operating a drug ring and are linked to four killings. A jury was picked earlier this year .

(Judge Pollack's reversal can be downloaded from the internet at www.usao-edpa.com/Invest/Mitchell-Llera/usvllera-plaza_jpollak_3_13_02.pdf).

Pointing the Finger at Scots Justice

(The following article was downloaded from www.theherald.co.uk May 3, 2002.)

By **IAIN WILSON**

More than 100 forensic scientists from across the world yesterday condemned the Scottish justice system.

They warned that the system will be further undermined unless Jim Wallace, the justice minister, takes swift action to restore the credibility of fingerprint evidence and the Scottish Criminal Records Office (SCRO) in particular.

It follows the debacle surrounding Shirley McKie, the former Strathclyde detective who lost her career after her fingerprints were wrongly identified at a crime scene.

In a strongly-worded letter to Mr. Wallace, the experts from 13 countries ridicule the SCRO's defence that fingerprint evidence is only "an opinion".

Notable signatories include scientists serving with police forces and the United Nations chief of forensics involved in the harrowing task of identifying victims of the Kosovar conflict.

Their letter coincides with Mike Russell, the nationalist MSP for South of Scotland, securing a parliamentary debate on issues arising from Ms. McKie making legal history. She was cleared of perjury after four fingerprint officers from the SCRO had alleged her fingerprints were found at a murder scene.

The Crown Office later announced that no legal proceedings would be taken against the officers whose evidence led to her arrest and trial.

However, 130 people among the world's foremost authorities in identification yesterday insisted that was not good enough.

They argued that "any qualified expert or even unqualified trainee" would have concluded a latent print of a left thumb did not come from Ms. McKie. They also said a gross mistake was made.

Their letter continues: "We are deeply concerned fingerprint techniques that have proved dependable for so many years, and have served the judicial process so well in finding the truth for over a century, have now been badly tainted.

"We are also concerned that the victim was a police officer acting in the line of duty; that her accusers were expert witnesses working for the Crown Office, and that such an injustice could happen again."

The letter warns that unless the situation is corrected: "It will further undermine fingerprint evidence, the Scottish justice system, and the position and credibility of the SCRO.

"We appeal to you to use your authority and power to correct this mistake, stop injustice and prevent such a situation ever arising again."

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Message from the SWGFAST Chair

On April 29 and 30, 2002, I participated in a "Fingerprint Forum", which was hosted by West Virginia University in conjunction with the International Association for Identification. It was chaired by Joe Polski, Chief Operations Officer of the International Association for Identification and Chair of the Consortium of Forensic Science Organizations. The intent of the forum was to identify research topics that would expand the foundations of friction ridge analysis, and to encourage the funding of such research projects.

The following agencies and organizations were represented: National Institute of Standards and Technologies (Office of Law Enforcement Standards, Office of Science and Technology, and Investigation and Forensic Science Division), National Forensic Science Technology Center, Forensic Science Program at West Virginia University, National Academies (Technology and the Law Program), Federal Judicial Center (Scientific Evidence Project), Technical Support Working Group (Investigative and Forensic Science Unit), University of Missouri (School of Law), American Academy of Forensic Sciences (Jurisprudence Section), American Society of Crime Lab Directors, United States Secret Service, Orange County Sheriff's Department, and Federal Bureau of Investigation (Criminal Justice Information Services and Laboratory Divisions). A professor of statistics (University of Chicago), several attorneys, a retired judge, Richard Fahy (President of the International Association of Identification), and several latent print examiners who have been involved in recent Daubert hearings (Steve Meagher, Ed German, and Ken Smith) also participated. Additionally, two representatives from the Canadian Identification Society and the editor of Fingerprint Whorld contributed international perspectives.

The development of a *Sourcebook* on friction ridge analysis was identified as one area for research. The *Sourcebook* would provide practitioners and researchers with source information pertaining to fingerprint matters. Another research topic that was discussed was an evaluative/critical review of the state of the science and its data. These initial research projects would expand the foundation of friction ridge analysis and could provide support and guidance for further research.

The forum encouraged SWGFAST to continue to compile and to promulgate consensus guidelines[1] and to continue to develop standards in cooperation with the international community. Recommendations were made regarding education and training. It was also recommended that examiners should be made aware of the education and training standards advocated by SWGFAST and TWGED. (TWGED documents should be available for distribution in the near future). Examiners should be encouraged to meet or to exceed those standards. The need to encourage funding to support the certification of all eligible latent print examiners was also identified. The actual documents that will be submitted to possible funding sources will be completed and made available in the near future. It is anticipated that, through the collective influence of the agencies and organizations represented, support for these and future projects can be initiated.

Alan McRoberts, Chair

[1] SWGFAST guidelines and materials were published in the May/June 2002 issue of the Journal of Forensic Identification. They are also available on the internet at www.swgfast.org.

Pointing the Finger at Scots Justice - continued from pg 2

Allan Bayle, former New Scotland Yard fingerprint expert and now training lecturer at the Metropolitan Police's scientific support college, is among the signatories. Others include David Schulz, chief of the UN forensic mission in Kosovo, and Andre Moenssens, a US-based professor who has written more than a dozen books on fingerprint techniques.

They have gone on record in protest at what they regard as "shameful fabrications" in the McKie case. They stressed not one examiner agreed with the "opinions" offered by the SCRO experts, and now "stand with mouths agape" at recent events.

First, a police inspectorate report criticised the SCRO as "not fully effective and efficient" - raising questions over fingerprint evidence. Second, a government inquiry led to changes to the verification system, with identification now being triple-checked.

However, the Crown Office said no action would be taken against the officers who said a fingerprint at a Kilmarnock murder scene was "definitely" Ms. McKie's.

Mr. Russell's debate will be heard on May 15, three years and one day after her acquittal. He said: "I want the damage done to the Scottish justice system addressed, and ensure it does not happen again. There have been blatant attempts to justify the unjustifiable. I hope Jim Wallace will finish this once and for all."

Iain McKie, Shirley's father, said: "We are grateful so many experts have stressed the SCRO got it badly wrong. We also welcome the debate in parliament."

Advantages of a Cooled-chip Scientific Digital Camera

(This article is reprinted with permission from the April 2002 issue, pp 120 - 127, of Law Enforcement Technology.)

By **STEVE SCARBOROUGH**
Las Vegas Metropolitan Police Department

There is a quiet revolution occurring in laboratories throughout the United States. Technology previously reserved for NASA, astronomers and biomedical scientists has become the technology of choice for forensic scientists and analytical chemists.

Scientific-grade cooled-chip digital (CCD) camera technology is based on the same technology developed by the Jet Propulsion Laboratories and NASA to record galaxies and take pictures on space missions. It is currently being used on satellites for its high sensitivity. Astronomers take advantage of the scientific-grade camera's low noise and low light capability. Scientists involved in biomedical imaging utilize the technology because it provides a wide dynamic range of color/gray levels and a high resolution image.

Forensic scientists; latent print, document and firearms examiners; and criminalists specializing in serology, chemistry and DNA analysis can benefit from the CCD's high sensitivity, high resolution and increased gray scale levels as well.

Advantages over other cameras

There are several important advantages of a scientific-grade CCD camera over typical video and commercial digital cameras.

Present technologies such as video and standard digital cameras have a limited spectral response. Normally, CCD cameras are designed to imitate the human eye and produce images close to what the human eye sees. Most digital cameras were developed for commercial graphic artists or to replace film-based photography. Scientific-grade cameras were not designed with these parameters and therefore are not limited in areas of the spectrum as the far blue or ultraviolet. Many of these cameras were developed within the framework of highly specific government projects. They evolved as specifications required high-resolution images in low light conditions using high magnification or a microscope.

A video-only digital imaging system has the advantage of a live image but lacks the high resolution of a CCD camera. Live picture allows for item adjustment and lighting adjustment, much like a single lens reflex (SLR) camera. Typical video, however, is limited to an 8-bit 720-pixel by 480 pixel image. Video cameras offer a low lux rating from 10 lux down to 0.5 lux for high-end units. Scientific-grade CCDs can provide true color images down to 100 microlux.

The standard digital camera, depending upon the chip, has the capability of high-resolution image capture. Most professional digital cameras produce images around 1,280 pixels by 1,024 pixels but higher quality chips can produce images up to 2,000 pixels by 2,000 pixels at 10 and 12 bits. Just having a digital camera does not guarantee high resolution. Images produced by a high-quality scientific-grade CCD camera can range up to 4,000-pixel by 4,000-pixel resolution in 12 and 16 bit images.

The difference in detail in a captured image from a scientific-grade camera and that seen by the eye can be quite dramatic. "We are seeing things that we never saw before under the microscope," says Sergio Adamo, vice president of Imaging Systems at Integrated Scientific Imaging Systems (ISI) in Santa Barbara, California. "The CCD cameras can actually improve the image over the normal capacity of the human eye."

The readout noise of a CCD chip is an important factor in its sensitivity. Scientific-grade cooled-chip cameras have readout noise levels as low as one electron per gain value. Within limits, the lower the CCD temperature, the lower the leakage of current and the higher the sensitivity.

Although the scientific camera is relatively expensive ($8,000 to $25,000), it has the capabilities of being the best of both worlds. While having the appearance of a video camera and the high resolution of a digital camera, the scientific camera is small and maneuverable, and can ensure that the field of view obtained in the setup mode is exactly that captured at the highest resolution. The best system will have a scientific-grade camera partnered with a handheld digital camera for the most versatility.

Forensic applications

CCDs are perfect for fluorescent photography of latent fingerprints, which requires photography (imaging) of treated latents under the ALS (alternate light source). Some scientific cameras have built-in filter wheels, such as ISI's CCD1600, designed for the differing wavelengths of an ALS. The filter wheels can have customized filters installed, and for the specific wavelengths of an ALS, filters are rotated through the use of the camera's software. Of course, all final images are limited by the input of the original image data. The better the imaging input, the better the eventual enhanced image.

Because some scientific CCD cameras are capable of obtaining images with up to 4,000 gray scale levels, additional latent print detail or contrast for other trace evidence can be drawn out of a very dark background without affecting the remainder of the image. Typical

video produces 128 to 256 gray levels, and some digital cameras greatly increase this output.

For other forensic applications, specific colors (or gray levels) of the specimen can be identified (often not visible to the naked eye) and then isolated. Then the distracting background can be removed by using software filters such as fast Fourier transform (FFT), leaving a pristine image of the evidence.

CCDs can be used with digital imaging software packages to produce the best possible final images. Many forensic laboratories are already using ImagePro image enhancement software as part of their image enhancement system. Most of the scientific camera companies have, in cooperation with Media Cybernetics or other imaging software companies, developed drivers to allow for simultaneous capture and analysis of images using a scientific CCD camera. ISI supplies Media Cybernetics drivers for its line of cameras and other companies, such as Photometrics, supply their own software to allow this convenient interface. The captured image also can be transferred to other imaging software such as Photoshop.

For a criminalist, the CCD image detector's linear attributes offer an on-the-fly, quantifiable, distortion-free image. The linear ability of a CCD (the properties of the CCD that allow for longer capture time) translates into a proportional amount of increase in signal, and in certain instances is actually better than film. Film is non-linear and an increase in capture time will not increase the amount of data in the image. Film actually becomes nonlinear over long exposures of more than a few seconds. The cooled CCD allows the forensic scientist far more time collecting new data rather than analyzing the modest amounts captured on film and being converted.

Lighting problem? "No problem," says Adamo. "The darker the better." Thousands of gray levels and very long exposures give the ability to pull detail out of very dark objects, such as black powder on the black handle of a knife.

CCD cameras available

Professional scientific-grade cameras are available in many levels and in many forms from vendors around the world. Imaging Systems and Roper Scientific (an international company that merged with Photometrics of Tucson, Arizona, and Princeton Instruments of Trenton, New Jersey) are among the companies that supply scientific-grade cameras in the United States. There are also some companies in Canada and the United Kingdom, among them Xillix Technologies and Photonic Science Limited.

Scientific cameras are given different grades ranging from 0 for NASA quality to something more in the lines of forensic quality, a Grade 3 CCD chip. This grading is in part based upon the responsiveness of all parts of the CCD array. CCDs designed for live video and commercial digital capture usually have non-responsive areas between pixels. Scientific-grade cameras use most of the active area for light sensing. The rating grades of CCD chips are rated based upon how many non-responsive pixels are present in the array. The lower the rating, the better quality of the chip.

As many forensic laboratories seem to be going the way of digital imaging, the scientific-grade digital camera is on the cutting edge of this technology, and when combined with a high-resolution digital camera can make an excellent forensic digital imaging system.

The potential for scientific cameras in forensic science is very exciting and is only limited by current technology. Improving on the shortcoming of the slow frame capture of the scientific-grade CCD camera, some new cameras with progressive scan CCD imagers, developed for medical and biomedical imaging, can be readily adapted to the forensic arena. These compact, lightweight cameras, though with less resolution and without the convenient filter wheel, have been successfully used in industrial applications where the camera is remotely tethered to a computer system. This may be the perfect solution for a police laboratory with a processing area and digital imaging system in separate rooms. There also has been some experimentation with wireless technology using these types of cameras. Even though present transmission bandwidths need to be improved, the potential exists for a completely portable high-resolution CCD camera to capture images on evidence and transmit those refined images to a digital imaging system in a remote location.

While a scientific-grade CCD camera is not right for every imaging situation, a high-resolution, high-contrast and highly sensitive cooled CCD camera can improve the quality of images including difficult latent print images for any law enforcement agency. Improving the recovery rate and imaging capture of all types of evidence in poor lighting conditions on difficult surfaces can obviously increase the identification rate of evidence for the forensic laboratory.

Steve Scarborough is a latent fingerprint examiner with 22 years of experience with the Las Vegas (Nevada) Metropolitan Police Department. Before his career with the LVMPD, Scarborough was employed with the FBI for seven years in technical support. He has been instrumental in bringing digital imaging to the LVMPD Forensic Laboratory and has developed a technical digital imaging manual that has been used as a guide by other agencies. He can be reached via e-mail at s2160s@lvmpd.com.

Limits of DNA Research Pushed to Identify the Dead of Sept. 11

(The following article was download from the NY Times website, April 22, 2002 .)

By **ERIC LIPTON and JAMES GLANZ**

A right hand, a forearm and a clavicle, and the DNA they carried, were all investigators had to identify the remains of Timothy Stout, who worked on the 103rd floor of the north tower of the World Trade Center.

Two fingerprints and a dental pattern proved key to confirming the death of David Suarez, who worked a few floors below.

A genetic analysis of a bone fragment determined the final fate of John C. Hartz, who was on the phone with his wife describing the horror of the first attack when the south tower, where he worked, was struck by a second hijacked plane. "I have never been able to understand why people have been so intent on recovering bodies," said Mr. Hartz's widow, Ellie. "Now I understand. It is a basic human need. We are tactile."

These confirmations, achieved in the last month, are each scientific miracles made possible by the largest forensic investigation in United States history, one that is pressing the limits of biomedical research even as it brings a painful mixture of relief and fresh grieving to families. But these are just 3 out of 972 identifications that investigators have made as of Friday.

A third of the 2,824 victims of the World Trade Center attack have now been identified, a number far beyond what many had thought would be possible. The goal now, experts involved in the effort say, is to use new scientific techniques to identify half or even two-thirds of the victims, despite the miserably deteriorated state of many of the remains being pulled from ground zero.

The endeavor spans the nation, from genetics laboratories in Utah, Texas, Maryland and Virginia to law enforcement bureaus in Washington and Albany; even a California forensic statistician is helping. But the federally financed job, of course, is centered in New York City, at the World Trade Center site, where remains have been meticulously collected, and at the medical examiner's office, at 520 First Avenue in Manhattan, where 18 refrigerated trailers hold the evidence.

To date, 18,937 body parts have been recovered, along with 287 whole bodies. Most of the first successes in identifying victims have come through traditional resources like fingerprints and dental records, and those techniques are still yielding results. But because of the extraordinary trauma involved in the towers' collapse, DNA is often the only hope of matching remains to a name, a family, a life story. In fact, through Friday, only 10 victims so far have been identified solely by visual confirmation.

DNA, first used as a forensic tool in 1985, led to the identification of all of the bodies in a Swissair plane crash in 1998 and an EgyptAir plane crash in 1999, two accidents in which jets plunged into the Atlantic. In the days after the Sept. 11 attack, city officials announced that they felt compelled to test each bit of human remains that could be found.

"This is an historic event of unprecedented magnitude, and the question was if the scientific community could respond to that need," said Mark D. Stolorow, executive director of Orchid Cellmark, a genetics company. "The response has been surprisingly swift. We are scientists, but we are also American scientists."

Progress has not come at an even pace. Only 2 of the 65 people aboard United Airlines Flight 175, which struck the south tower, have been identified, according to city records. By comparison, 182 of the 343 city firefighters, who wore protective gear, have been identified.

Since the day of the attack, the identification effort has proceeded simultaneously on multiple tracks. Dental records, details on any tattoos, engraved rings or other unique items were collected by the police, in the hope that traditional identification approaches might be sufficient. But city investigators also started immediately to assemble DNA from victims' families, who supplied toothbrushes, razors, even lip balm used by a victim, which presumably would contain his or her DNA. Cheek swabs from the victims' relatives were also taken.

Each person's DNA, or genetic code, consists of a string of three billion "base pairs," or large molecules, represented by the letters "A," "G," "C," and "T." Sequences of those four molecules create the code for all human characteristics, and variations in those sequences make one person different from another. Those same variations also allow DNA to be used like a fingerprint.

To start this effort, the city relied on a well-proven DNA technique, called Short Tandem Repeat, in which the laboratories looked for 13 different markers in each sample of human remains collected from ground zero, measuring the size of each marker and assigning the equivalent of a Social Security number to each fragment of remains. An analysis would also be done on the 6,908 razor blades, combs, toothbrushes and other personal items, and the 6,889 cheek swabs from victims' relatives.

Myriad Genetics of Salt Lake City and the Bode Technology Group of Springfield, Va., handled most of this initial work. Bode alone has been sent 12,000 bone samples, 5,500 soft tissue samples and 1,800 samples from family members. The results are being sent back to the New York State Police, and then the city medical examiner's office, where staff members start on the difficult work of matching DNA profiles from the remains with those from the family items and confirming the accuracy of each step.

This effort gradually started to produce significant results: 57 DNA identifications in November, 69 in

March and 92 in April, as of Friday. But nothing is coming easily.

The fires that burned for weeks after the towers fell were so hot that even when bones were recovered, they were often little more than ash. The moisture at the site and bacteria caused further degradation. The result is that nearly half of the first round of samples tested at DNA labs have come back with incomplete profiles, city officials said.

In as many as 700 cases, the medical examiner's office has been unable to link a DNA profile that was isolated from a piece of remains with any of the profiles established based on the items supplied by the victim's families. Making the matches has become almost an obsession for Dr. Robert Shaler, the director of forensic biology with the city's medical examiner's office. He finds himself at his office at 5 a.m., at his computer, again and again, trying to make just one more match. He wonders as he arrives for work: "Can I make matches? Can I make matches?"

Former Mayor Rudolph W. Giuliani said he already was amazed at the success Dr. Shaler, and his boss, Dr. Charles S. Hirsch, the city's chief medical examiner, have had. "I honestly think on the evening of Sept. 11th, none of us who observed it, saw it, watched it, were involved in it, ever thought you would have been able to identify a third of the people," Mr. Giuliani said.

But Dr. Shaler and other city officials say they are far from satisfied. They believe they have another eight months of work, as they are just now pushing ahead again, in a second wave of testing.

Celera Genomics, a Maryland company best known for its work in sequencing the human genome in recent years, is applying its fast DNA sequencing machines to the World Trade Center identification effort. Celera's work, in conjunction with its Applied Biosystems division, is focusing on tiny rings of DNA in cell structures called mitochondria. These maternally inherited rings are hardier than the long strands of DNA used in the more traditional tests, and there are as many as 10,000 of them in each cell, giving investigators much more to work with. This approach has been used before - including the 1994 identification of the remains of Czar Nicholas II of Russia - but never before on such a large scale.

The city is also turning to techniques that have never been used before in forensic investigations: single nucleotide polymorphisms, known as snips, are telltale variations in single base pairs scattered throughout the genome - an A instead of a T, say. The snips can be found even when a victim's DNA has been broken into fragments as short as 60 to 80 base pairs, much less than required in the traditional tests, Mr. Stolorow of Orchid Cellmark said.

In preliminary attempts, the success rate for developing DNA profiles of victims who could not be identified with the other methods has been "encouragingly high," Mr. Stolorow said. The full process of getting profiles, matching them with DNA from relatives and other sources is expected to take two to three months, he added.

These incursions into uncharted scientific territory and even the identifications that have come from traditional means have produced a volatile amalgam of deep gratitude, a resurgence of September's searing grief, the need to grapple with unfamiliar choices, and more than a few surprises in the worlds of bereaved families.

One surprise lay hidden in the hopes of 12-year-old Brendan Regan until the remains of his father, Robert Regan, a lieutenant in Engine Company 205, Ladder Company 118 in Brooklyn Heights, were found and identified on New Year's Day. The results came quickly, based on dental records and a medal of St. Florian, patron saint of firefighters, inscribed with his children's names.

"It turned out that up until that point, my son had held out an unbelievable hope in his heart that he was still capable of having a miracle occur," Lieutenant Regan's widow, Donna Regan, said. "He felt my husband may have crawled to a safe spot" and somehow survived, she said. Now, Mrs. Regan hopes, her son can begin the long and difficult process of healing.

But the prospect that science could again and again identify more of a victim's remains has put some families in a torturous limbo. "We decided to hold off on the funeral," said Robert Alonso, whose wife, Janet Alonso, worked for Marsh & McLennan on the 95th floor of the north tower. Some of her remains were identified less than two weeks ago.

"The last thing we needed was to have a service and then say, `They've found more remains at ground zero,'" Mr. Alonso said.

The impact on families of techniques that can identify almost any fragment of a loved one's remains is not always positive. "It's very upsetting," one widow said of the news. "I almost threw up."

Given those emotions and the fact that dozens of distinct remains are being found at times from a single victim, the medical examiner's office is giving families the option of being notified only once, when the first confirmation is made. They are also giving families the alternative of leaving any identified remains at the morgue until all testing is over, so that a single burial can take place.

Still, everyone expresses thanks for the monumental effort taking place at ground zero and at labs across the country. The identifications help families escape what Mrs. Regan calls the "vanish factor": not having anything tangible on which to focus the last goodbyes.

Mr. Alonso said thoughts of his children, ages 2 and 3, help him cope with the upwelling of grief that the identification of his wife has brought. "Questions will be coming as we get older: 'Where's Mommy? What happened to Mommy?'" Mr. Alonso said. A grave site, he said, "brings me a place where when the kids get older and understand, I can bring them and show them something."

The Effects of Blood Enhancement Chemicals on Subsequent DNA Analysis

(Reprinted from volume 24 (3) of Identification Canada, 2001. Identification Canada published an adapted version from the Journal of Forensic Sciences 45 (2), copyright American Society for Testing and Materials, West Conshohocken, PA.)

By **CHANTAL J. FRÉGEAU, OLIVIER GERMAIN, KEVIN J. MILLER, and RON M. FOURNEY**

Abstract

Forensic Identification Specialists are often forced to make a decision at a crime scene as to what evidence should be collected, and with which technique. When confronted with indications of weak bloodstains, the choice is between using a blood enhancement reagent to try to bring up fingerprint friction ridge detail, and swabbing the stain for later DNA analysis. The present study indicates that DNA profiles can still be obtained after the use of any of the seven blood enhancement techniques used here, without altering the DNA results. The intensity of the fluorescent signals was very similar and the allele size measurements remained constant and identical to those from untreated blood. Only two issues were noted: 1) a reduction in DNA recovery after blood enhancement in specific cases and, 2) a suggestion of slight degradation of DNA after prolonged exposure to blood reagents which may require special consideration.

Introduction

Forensic Identification Specialists are always confronted at the crime scene with having to make a decision regarding which fingerprint development method should be used in a particular situation. Certain techniques can be used after another has been unsuccessful, while some techniques must be used before all others [1] . The problem is more complicated when there is the possibility of recovering body fluids for later DNA analysis. While forensic serological analyses required a large sample to be collected to yield a successful result, DNA profiling has become more and more sensitive, requiring much smaller sample sizes. Now, when a weak mark in blood is detected at the crime scene, a decision has to be made between using a blood enhancement technique to develop friction ridge detail, and swabbing the area for later DNA analysis. The present study aims to provide some direction with respect to these cases [2,3, and references therein].

When serological testing was still in vogue, it was found that fingerprint techniques did have a deleterious effect on ABO or polymorphic enzyme testing [4-6] .With the advent of restriction fragment length polymorphism (RFLP) DNA profiling (considered to be the first common conventional DNA analysis procedure), further studies showed adverse effects from some presumptive tests for blood (silver nitrate, benzidine, leucomalachite green, o-tolidine) [5,7], while certain fingerprint development techniques did not compromise the subsequent DNA analyses [5,8]. Hochmeister et al. [7] reported successful RFLP typing of blood after treatment with luminol, benzidine, and phenolphthalein. Stein and colleagues [9] exposed bloodstains to cyanoacrylate, ninhydrin, and gentian violet for 14 days, and were still able to obtain DNA results.

The use of polymerase chain reaction (PCR) techniques for short tandem repeat (STR) DNA analyses has made DNA profiling much more sensitive. Smaller size samples or degraded samples can still produce full DNA profiles [10-12]. Hochmeister et al. [13] were able to successfully obtain PCR-based results from bloodstains after treatment with cyanoacrylate, dyes, and examination under intense forensic light sources. Stein et al. [9] examined the effects of fingerprint powder, cyanoacrylate, gentian violet, and ninhydrin, and found that DNA profiles could be obtained even 56 days after fingerprint treatment. Andersen and Bramble [14] looked at the results after exposure to various forensic light sources, and found that exposure to shortwave UV light had a damaging effect on subsequent PCR DNA analysis.

The present study looked at seven blood enhancement techniques applied to various surfaces to determine their effect on PCR DNA analysis. Blood drops and bloody fingerprints of various concentrations were used. In some cases, the blood samples were aged before treatment with the enhancement technique, and in others, the samples were left to stand after chemical treatment, before DNA analysis.

Methods and Materials

Blood samples from two volunteers were collected in vacutainers containing the anticoagulant EDTA. Dilutions of blood were prepared using filtered, autoclaved, and deionized (FAD) water. The sample substrates used in these experiments included linoleum, glass, metal, painted wood, cloth (65% polyester, 35% cotton; 85% polyester, 15 % cotton; blue denim), and paper (Xerox-grade bond paper; Scott® paper towel). The seven enhancement reagents tested were Amido Black [15,16], Crowle's Double Stain [15,17], Hungarian Red

[15], leucomalachite green [15,18], luminol [6,19], ninhydrin [20], and 1,8-diazafluoren-9-one (DFO) [21]. Each was made up according to recipes used by Royal Canadian Mounted Police (RCMP) Forensic Identification Specialists [2,3].

DNA extraction, quantitation, amplification, and interpretation were done according to RCMP guidelines and procedures [22,23]. See reference 3 for more complete details.

To test the effect of blood enhancement reagents on the quantity of recovered DNA, bloody fingerprints on linoleum were analyzed with and without chemical treatment, using Crowle's Double Stain. In this experiment, 20 µL of blood, ranging in concentration from neat to 1:200, were dropped on to linoleum, allowed to air dry, and then analyzed for the amount of DNA recovered. Bloody fingerprints made using various aliquots and various concentrations of blood were placed on linoleum and allowed to air dry (see Table 1). Some were quantitated for DNA without chemical treatment, while others were processed after Crowle's Double Stain had been applied.

To test the effect of blood enhancement chemicals on the DNA profiles recovered, bloodprints were placed on a number of different sample substrates, treated with blood enhancement reagents, and processed for DNA typing. Prints on linoleum, glass, and painted wood were treated with Amido Black, Crowle's Double Stain, Hungarian Red, luminol, and leucomalachite green. Prints on cloth were treated with luminol, and prints on bond paper were treated with ninhydrin and DFO. After treatment, prints were cut out or swabbed, and then analyzed according to the RCMP protocols outlined in Reference 3. As control samples, untreated areas of the substrates were tested, as were areas treated with the blood enhancement reagents alone, and areas where non-bloody fingerprints were applied.

To test the effect of time of enhancement and duration on the DNA results, bloodprints were prepared on a number of surfaces and then treated with enhancement chemicals immediately after drying, or after being left to dry for 7 days or 14 days, then analyzed for DNA. To test the long-term effects of exposure to the enhancement chemicals, fresh and aged bloody fingerprints were treated with enhancement chemicals, then allowed to stand for 7, 14, or 54 days before DNA analysis.

Results and Discussion

Most DNA typing protocols require at least I ng of target DNA for successful profiling. In all cases, the 20 µL aliquot of blood, up to dilutions of 1:100, yielded more than sufficient amounts of DNA (see Table 1 and ref. 3). When blood was transferred to a finger to produce a bloody fingerprint, the amount of DNA recovered was understandably reduced. When fingerprints were immediately treated with a blood enhancement reagent such as Crowle's Double Stain, the amount of DNA recovered was reduced by a further 50% (one result indicated a 12-fold decrease in quantity, but this may be due more to an anomalously high yield obtained for the untreated fingerprint). Even then, a fingerprint produced with blood diluted 1:200 and treated with Crowle's Double Stain generated 1.5 ng of DNA. The use of Crowle's Double Stain on non-porous substrates such as linoleum is recognized as one of the most challenging of all seven blood enhancement procedures evaluated. The decrease in DNA yield following enhancement can be attributed to loss of blood cells during the destaining steps carried out in order to reduce the background staining. It is anticipated that other enhancement methods applied to other types of surfaces with different porosity characteristics would promote better DNA yields. These results indicate that significant amounts of DNA can still be recovered after bloodstains have been treated with blood enhancing chemicals. The one potential drawback could be the reduction in the quantity of DNA recovered when specific combinations of blood reagents and surfaces are used.

For all of the surfaces and blood enhancement reagents used here, there were no detrimental effects on the PCR DNA profiles generated. The fluorescent signals and allele size measurements were essentially identical to those of the untreated bloody fingerprints [See ref. 3, Tables 9 and 10]. The only noticeable effect was a strong coloration of the sample during the extraction procedure. While this required a longer purification step, it did not

Upcoming SCAFO Meeting

June 1, 2002

Location: LaChalet Basque Restaurant
LaPuente
Speaker: Sandie Enslow
Program: ***Basic Mechanics of Composite Drawing***

For more information contact:
Nancy Gschwend / Susan Garcia
(213) 989-2163 garcia@scafo.org, or
Dennis Uyeda at (916) 227-3314

have a negative impact on the final DNA result. In the control samples, no quantifiable DNA was recovered, but PCR amplification did result in the appearance of some low intensity signals. For some non-bloody fingerprints applied to glass, almost complete profiles, consistent with the donor of the print, were generated. These results would be in agreement with recent reports of DNA profiles being recovered from epithelial cells left behind when objects are handled [24,25]. The main conclusion from this series of experiments is that the DNA profile generated is not altered by the use of the blood enhancement chemicals, and will not result in an incorrect inclusion or elimination.

Untreated bloodprints left for up to 54 days before DNA analysis produced profiles identical to those generated with fresh samples. Fresh and aged bloodprints subjected to DNA extraction seven, 14, or 54 days after enhancement, generated profiles that showed no allele dropout or additional bands. In a few cases (i.e., Crowle's Double Stain and Hungarian Red), a slight decrease in fluorescent signal was detected across the electrophoretic tracing of the profile, indicating that after 54 days, a slight degradation in the DNA was occurring, resulting in more efficient amplification of smaller STR loci [See ref. 3, Figures 11 and 12]. In other words, bloodstains do not have to be treated immediately with blood enhancing reagents in order to obtain results, and treated bloodstains do not have to be analyzed for DNA immediately after treatment with blood reagents. The one caveat might be that prolonged exposure to some blood reagents applied to certain surfaces can lead to some loss of DNA.

Conclusions

The results of these experiments indicate that most blood enhancement reagents, commonly used and as tested in our studies, will not have a deleterious effect on subsequent DNA analysis. In all instances, the fluorescent signals were similar and the size measurements of all alleles remained constant and identical to those of the untreated blood. No allele dropout or extraneous bands were detected in profiles generated from the DNA of enhanced bloodprints. Fresh and aged prints enhanced and exposed to reagents for up to 54 days still yielded accurate DNA results. In this respect, Forensic Identification Specialists can confidently use the most commonly employed blood enhancement techniques on bloodstains without concern about compromising subsequent DNA analysis. In only two instances, some degradation of the DNA was observed after 54 days, indicating that prolonged exposure to some blood reagents could eventually lead to less than optimal results.

Our results also indicated that there was some loss of biological material when specific blood enhancement techniques were used. In situations where the amount of blood is small, the loss of blood cells during enhancement may result in insufficient DNA remaining for analysis. Although enhancement does not preclude the obtaining of excellent STR results, it may, whcn employed on limited samples, have negative consequences and compromise crucial and limited evidentiary samples. It appears that the advancement of DNA technology and blood enhancement detection technologies presents an interesting paradox to the Forensic Identification Specialist. Caution is required when using an enhancement technique on bloodprints to ensure that sufficient biological material is retained by the substrate for possible future DNA submissions. Of course, it is precisely in instances with very little visible blood that enhancement chemistry would be considered and deemed necessary in order to actually define the sample for processing. In some cases, no body fluids are observed prior to enhancement, so swabbing for DNA would not have been contemplated.

Acknowledgements

We thank Brian Yamashita and Della Wilkinson for many helpful discussions and a careful reading of the manuscript.

References

1. Ribaux, 0. Lennard, C. Dugerdil, P. Margot, P., "Goldfinger: An Expert Computer System for the Determination of Fingerprint Detection Sequences". J. Forensic Ident., 43, 468-480 (1993).

2. Miller, K., Blood reagents -Their use and their effect on DNA. FIRS Bulletin No.42, Royal Canadian Mounted Police, Forensic Identification Research and Review Section (1998).

3. Frégeau, C.J., Germain, 0., Fourney, R.M., Fingerprint Enhancement Revisited and the Effects of Blood Enhancement Chemicals on Subsequent Profiler Plus™ Fluorescent Tandem Repeat DNA Analysis of Fresh and Aged Bloody Fingerprints. J. Forensic Sci., 42, 354-380 (2000).

4. Shutler, G.G., A study on the inter-relationship between fingerprint developing techniques and bloodstain identification and typing methods. Can. Soc. Forens. Sci. J., 13, 1-8 (1980).

5. Lee, H.C., Gaensslen, R.E., Pagliaro, E.M., Guman, M.B., Berka, K.M., Keith, T.P., Phipps, P., The effect of presumptive test, latent fingerprint and some other reagents and materials on subsequent serological identification, genetic marker, and DNA testing in bloodstains. J. Forensic Ident., 39, 339-357 (1989).

6. Laux, D.L., Effects of luminol on the subsequent analysis of bloodstains. J. Forensic Sci., 36, 1512-1520 (1991).

7. Hochmeister, M.N., Budowle, B., Baechtel, F.S., Effect of presumptive test reagents on the ability to obtain restriction fragment length polymorphism (RFLP) patterns from human blood and semen stains. J. Forensic Sci., 656-661 (1991).

8. Shipp, E., Roelofs, R., Togneri, E., Wright, R., Atkin-

son, D., Henry, B., Effects of argon laser light, alternate light source, and cyanoacrylate fuming on DNA typing of human bloodstains. J. Forensic Sci., 38, 184-191 (1993).

9. Stein, C., Kyeck, S.H., Henssge, C., DNA typing of fingerprint reagent treated biological stains. J. Forensic Sci., 41, 1012-1017 (1996).

10. Wiegand, P., Kleiber, M., DNA typing of epithelial cells after strangulation. Int. J. Leg. Med., 110, 181-I83 (1997).

11. Sweet, D., Lorente, J.A., Velenzuela, A., Lorente, M., Villanueva, E., PCR -based DNA typing of saliva stains recovered from human skin. J. Forensic Sci., 42, 447-451 (1997).

12. Herber B., Herold, K., DNA typing of human dandruff. J. Forensic Sci., 43, 648-656 (1998).

13. Hochmeister, M., Cordier, A., Rudiu, O., Borer, U., Typisierung von blutspuren auf basis der polymerase chain reaction (PCR) nach bedampfung des spurenträgers mit cyanacrylatester ("Super Glue"). Archiv. Kriminol., 192, 153-158 (1993).

14. Andersen, J., Bramble, S., The effects of fingermark enhancement light sources on subsequent PCR-STR DNA analysis of fresh bloodstains. J. Forensic Sci., 42, 303-306 (1997).

15. Theeuwen, A.B.E., van Barneveld, S., Drok, J. W., Keereweer, I., Limborgh, J.C.M., Naber, W.M., Velders, T., Enhancement of footwear impressions in blood. Forensic Sci. Int., 95, 133-151 (1998).

16. Miles, C., Amido Black: Procedure for Field Use, FIRS Bulletin No.13, Royal Canadian Mounted Police, Field Identification Resource Section (1988).

17. Norkus, P., Noppinger, K., New Reagent for the Enhancement of Blood Prints. Fingerprint Whorld, 12,15-16 (1986).

18. Patty, J.R., Giberson, M., Safer Bloody Fingerprint Spray. Identification News, 35 (Nov), 7,11 (1985).

19. Lytle, L.T., Hedgecock, D.G., Chemiluminescence in the Visualization of Forensic Bloodstains. J. Forensic Sci., 23, 550-562 (1978).

20. Oden, S., von Hofsten, B., Detection of fingerprints by the ninhydrin reaction. Nature, 173, 449-450(1954).

21. McComiskey, P., DFO -A simple and quick method for the development of latent fingerprints. Fingerprint Whorld, 16, 64-65 (1990).

22. Royal Canadian Mounted Police, Forensic Laboratory Services Directorate. Biology Section Methods Guide. Rev. ed. Ottawa, ON, RCMP (1998).

23. Waye, J.S., Presley, L.A., Budowle, B., Shutler, G.G., Fourney, R.M., A simple and sensitive method for quantifying human genomic DNA in forensic specimen extracts. BioTechniques, 7, 852-855 (1989).

24. Van Oorschot, R.A.H., Jones, M.K., DNA fingerprints from fingerprints. Nature. 387, 767 (1997).

25. Bellefeuille, J., Bowen, K., Wilkinson, D., Yamashita, B., Crime Scene Protocols for DNA Evidence. FIRS Bulletin No. 45, Royal Canadian Mounted Policc, Forensic Identification Research Services (1999).

Table 1

DNA yields from blood drops and bloody fingerprints on linoleum before and after enhancement using Crowle's Double Stain*

Blood dilution	DNA yield (Total amount of DNA in ng)					
	Blood Drops	Fingerprint in blood without enhancement				After treatment
	20 µl	5 µl	10 µl	15 µl	20 µl	20 µl
Undiluted	1500	25	175	250	625	315
1:2	250	—	—	—	—	80
1:5	80	—	—	—	—	40
1:10	50	150	250	125	250	20
1:20	40	—	—	—	—	10
1:50	40	2.5	2.5	1	10	5
1:100	25	—	—	—	—	1.5
1:200	—	—	—	—	—	1.5

*This combination of surface and blood enhancement reagent represents the most challenging scenario.

Protecting the Crime Scene

(This article is reprinted from the Spring 2002 issue of the Specialist, the official publication of the North Carolina Division of the International Association for Identification.)

By **JAY ARMFIELD**

The GOLDEN RULE of EVIDENCE:

> Never touch, move or alter anything at a crime scene until it has been photographed, measured, recorded in your notes and entered into a drawing; remembering always, that once touched it can never be replaced in its original condition again.

The police work seen on nightly television displays crime scenes filled with detectives accompanied by uniformed officers all snooping around. Officers are picking up items (using handkerchiefs to prevent leaving their fingerprints). The crime scene personnel appear briefly to shoot a photograph or dust an item. In spite of the artistic license taken by the prime time detective stories, a crime scene is no place for a crowd.

The protection of a crime scene cannot be over stressed. Excessive trampling of individuals through a crime scene can damage the investigation by contaminating the more sensitive forensic techniques such as trace analysis, blood spatter interpretation, and DNA collection. There have even been occasions where officers first on the scene used the telephone, washed their hands in a sink, dried them on a towel, used the toilet and put out cigarettes in the ashtray leaving the butts.

This type of behavior ultimately produces or destroys evidence. It can create leads that bog down the investigation or destroy leads that could solve the investigation quickly. At one scene a well-meaning officer picked up a revolver and checked it for safety by opening the cylinder. There was a spent shell casing under the hammer indicating that one round had been expended. He closed the cylinder; however, in closing he allowed the cylinder to rotate placing a live round under the hammer. The altered state of the firearm changed the perceived nature of the investigation from a suicide to a homicide and wasted untold man-hours before this act was discovered.

The primary responsibilities of the first officers at the scene are to preserve life and to control suspects and witnesses. The second responsibility should be to preserve the integrity of the scene's physical boundaries. The role of the supervisors and detectives cannot be over stressed as these individuals have the ultimate responsibility for the investigation. Limiting the number of visitors to any crime scene may save a great deal of time and legwork later during the investigation.

Crime labs now are capable of using technology including luminol, coomassie blue, forensic light sources, DNA, and digital imaging equipment to mention just a few. This has not always been the case. With the use of these chemicals and equipment, contamination of the crime scene can and does reduce our ability to produce the scientific information and conclusions from trace evidence for the detectives to use as leads.

Usually a department's written policy provides for the use of an entry log to restrict unnecessary access to crime scenes. The officer assigned to handle the entry log must log in all personnel entering the scene, including name, rank, purpose for entering the scene, arrival and departure times. The next time you sign in at a scene, remember as our technology advances, it may become necessary one day to have all personnel entering the scenes make themselves available for specimens of hair, blood, shoe prints, fingerprints, etc. for elimination purposes.

Court Presentation of Fingerprint Evidence

May 22 -23, 2002, 0800-1700

Holiday Inn Select
21725 E. Gateway Drive
Diamond Bar, California

Day One: The Expert Fingerprint Witness

- The expert witness role in the justice system
- Qualifying as an expert
- Courtroom demeanor
- Direct examination questions
- Cross examination questions

Day Two: Current Issues and Recent Attacks on Fingeprints

Day two will help prepare you to answer questions relating to the following issues:

- Identification standards
- Scientific foundation of fingerprint evidence
- Daubert issues, e.g., testing, error rates, peer review, acceptance
- Qualitative/Quantitative friction skin analysis (ridgelogy)
- Use of court exhibits for presentation of fingerprint identifications

SCAFO members: **$40.00 per training day** Non-members: **$50.00 per training day**

Seminar registration includes a buffet lunch and college credit tuition

I will be attending the following days:

Day one: May 22, 2002 The Expert Fingerprint Witness _____

Day two: May 23, 2002 Current Issues and Attacks _____

Name as to appear on training certificate:

Agency:

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If payment will be made by agency, check at door, or mailed separately, submit reservation form now to guarantee reservation and indicate how payment will be made.

Please send payment and reservation form to:

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6357 Lake Athabaska Place
San Diego, CA 92119

Make check payable to SCAFO. Receipts will be provided at the seminar, not sent. Seating is limited to 75. Priority registration will be given to active members and individuals currently employed in the field. Cancellations made less than 7 days prior to training are non-refundable.

From the Bylaws

Article 2

Distinguished Members

Any Active or Life member in good standing who meets the following requirements may apply to the Executive Board for Distinguished Member status.

Requirements:

- Five years of continuous paid membership.
- A 50% meeting attendance for each of the five years preceding application for Distinguished Membership status.
- Attendance at three (3) of the SCAFO annual training conferences.
- Speak at a SCAFO meeting/conference and have an original article published in the SCAFO publication, or either one twice.

Article 10

The Charles W. Wolford Award

Annually a member of this Association may be recognized with an award from the Association for outstanding efforts in promoting our science and/or Association. The award shall be in the form of a plaque and certificate, purchased with Association funds by the Secretary-Treasurer or delegate. In addition, the recipient shall be granted a "Life Member" status within the organization and given all the privileges of an active member. Suggestions for candidates shall be made in writing, complete with description of outstanding effort, and submitted to an Executive Board member prior to the conclusion of the September meeting. The Executive Board shall evaluate the suggestions and determine if, and to whom, the award shall be presented. The presentation of the award shall be at the December meeting prior to the installation of the new Officers. This award, established in 1986, shall be known as: The Charles W. Wolford Award.

(Editor-All active members should consider not only contributing their dues in support of the association, but should also support the associaton and our profession through contributions of their time. The preparation of presentations and original articles will benefit both the author and the audience. Earn yourself a Distinguished Member status or the Wolford Award.)

MINUTES OF MEETING

DATE: Saturday, April 27, 2002
LOCATION: Knott's Berry Farm Restaurant
HOST: Bob Goss
SECRETARY: Dennis Uyeda
SPEAKER: Bob Goss
PROGRAM: Court Presentation

Call to Order: 2145 hours by President Steve Tillmann

ATTENDANCE:
Past Presidents: Clarence Bales (1972), Dell Freeman (1973), Joseph Mann (1985), Alan McRoberts (1991), Tim Golt (1992), Clark Fogg (1994), Clinton Fullen (1998), Thomas LaPisto (1999), Art Coleman (2000), Robert Goss (2001).

Executive Board: Bob Goss, Steve Tillmann, George Durgin, Ed Palma, Dennis Uyeda, Tony Clark-Stewart,Susan Garcia, Gina Russell-Durgin, Clint Fullen and Alan McRoberts

Members and guests present - 82

GIFTS: Provided by Tony and Karen Clark-Stewart, Gina Durgin and Dennis Uyeda.

OLD BUSINESS:

Second Reading:

Active:
Tammy Appleton, Los Angeles Sheriff's Dept.
Rosa Tsai,

Associate:
Christine Deltufo, Aloma DeVaux, Carmen Fabian, Heidy Mroczek, Nicole Osborn

Motion to Accept: Susan Garcia
Second: Bob Goss

Swear-Ins: by Past President Clint Fullen
Shawn Stalker, San Diego Sheriff's Dept.

NEW BUSINESS:

First Readings for **Active** Membership:
Shirley Braggs, San Bernardino Sheriff's Dept.
Recommended by Bob Goss, San Bernardino P.D.
Cynthia Vasquez, Santa Monica P.D.
Recommended by Maria Navarro, Santa Monica P.D.
Ronald Armenta, Madera Sheriff's Dept.
Recommended by Diana Castro, L.A.P.D.

First Readings for **Associate** Membership:
Daniel Aguilar, Kelly Buchwald, Debbie Camacho, Melanie Camacho, Sharon Grimm, Coralina Huerta, Bryce Padilla, Stacy Poetz, Anne Sorgi, and Denise Vargas
Recommended by Diana Castro, L.A.S.D.

ANNOUNCEMENTS:
Class by Bill Leo: Court presentation of fingerprint evidence, May 22-23, 2002.

Tony Clark-Stewart announced the CSDIAI mid-year meeting will be held in November in Santa Barbara.

Monika Kimbrough won a prize for her poster at the CSDIAI conference.

Attendance Drawing: Not won by Abe Catabay, Katie King or Gilbert Rendon

Door Prizes: Won by many in attendance.

Motion to Adjourn: Art Coleman, Second: Bob Goss

Meeting Adjourned: 2215 hours

Presidents Message

The April SCAFO meeting was held at Knott's Berry Farm and was the Annual Past Presidents Night. It is always nice to see so many Past Presidents in attendance and still supporting SCAFO. The meeting was organized by Past President Bob Goss, who, as the speaker for the evening, also gave us all an insight into Courtroom Etiquette. We had several new members join our Organization and had their First Readings.

I am currently responsible for the SCAFO database, which is what is used for the mailing of *The Print* and to keep our membership current. At the end of April, I deleted approximately 70 members who have not kept up with their mailing fees. They will no longer be receiving *The Print* and other mailings (training opportunities) throughout the year. The yearly mailing fees do not cover the expenses for the year. SCAFO expenses are defrayed by the yearly Training Seminar and other training that is sponsored or organized by SCAFO. By paying mailing fees on time and by supporting our Training Seminar, we can continue to keep our overall costs down and still provide a first class newsletter, *The Print.*

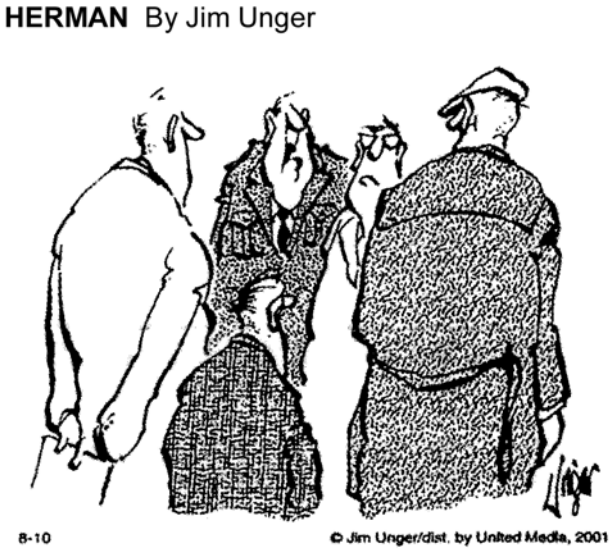
I am sure all of you have heard by now that U.S. District Judge Louis H. Pollak (Federal Court in the State of Pennsylvania) reversed his decision and will allow expert testimony on fingerprint evidence. Although it is somewhat a victory for fingerprints, we all must continue to expand our knowledge of fingerprints and stay on top of new developments, as well as the history of our profession, to be able to testify in court as experts in our field.

Past President Bill Leo will be hosting a 2-day training seminar in Diamond Bar on May 22 and 23, 2002. Please take advantage of this opportunity for training and to get updated on current issues regarding court testimony and the Daubert issues.

Our next SCAFO meeting will be held in June and I look forward to seeing as many members of our fine organization as possible. Come out and support SCAFO and have an enjoyable evening with friends and fellow SCAFO members.

Fraternally,

Steve Tillmann



(This cartoon is reprinted from the December 2001 issue of the "Star News", published by the Sheriff's Relief Association of Los Angeles County.)

"Every man owes a part of his time and money to the business or industry in which he is engaged. No man has a moral right to withhold his support from an organization that is striving to improve conditions within his sphere."

- President Theodore Roosevelt, 1908

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In This Issue

SCAFO Members get "yourname@scafo.org" See instructions on the website's email page.

-- Upcoming Events/Schools/Seminars--

May 22-23, 2002	***S.C.A.F.O. Training*** Court Presentation of Fingerprint Evidence Diamond Bar, CA Instructor Bill Leo
June 1, 2002	***S.C.A.F.O. Meeting*** Dennis Uyeda CAL-DOJ
August 3, 2002	***S.C.A.F.O. Meeting*** Ed Palma/ Tom Washington
August 4 - 10, 2002	International Association for Identification Las Vegas, Nevada
October 4-5, 2002	***S.C.A.F.O. Seminar*** **Cal-Poly Pomona**
December 7, 2002	***S.C.A.F.O. Meeting*** George Durgin Orange County Sheriff's Department
February 1, 2003	***S.C.A.F.O. Meeting*** Elaine Sena-Brown Santa Monica Police Department
May 4-8, 2003	C.S.D.I.A.I. 87th Annual Training Seminar Palm Sprints, CA Host Marvin Spreyne

Southern California Association of Fingerprint Officers
An Association for Scientific Investigation and Identification Since 1937