JFI Abstracts from 2002-2005

Guide for the Preparation of Test Impressions from Footwear and Tires

Author(s): SWGTREAD

Type: Special Feature

Published: 2005, Volume 55, Issue 6, Pages 781-786

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2005, Volume 55, Issue 6, Page 882

Abstract: This is an interesting fingerprint. Looking at the core as an eye, the image appears to be the head of a zebra! Classification is a 15-count left slant LOOP.

Re: Recovery of Latent Prints from Human Skin, J. For. Ident. 55 (3)

Author(s): Hamm, E.

Type: L

Published: 2005, Volume 55, Issue 5, Page 565

Re: Recovery of Latent Prints from Human Skin, J. For. Ident. 55 (3)

Author(s): Yamashita, B.

Type: Letters

Published: 2005, Volume 55, Issue 5, Pages 566-573

Multiple Exposure Method in Digital Photography of Fingerprints

Author(s): Chaikovsk, A.; Argaman, U.; Balman, A.; Sin-David, L.; Barzovski, A.; Yaalon, U.

Type: Technical Note

Published: 2005, Volume 55, Issue 5, Pages 574-584

Abstract: Forensic latent fingerprint photography, performed with evidence that has a substrate that is not uniform in terms of shape, color, and so forth, requires the use of various techniques. This report will introduce the multiple exposure method using digital photography and computerized image processing using layers methodology.

The Bermuda Angle: Getting the Best from an AFIS

Author(s): Downes, P.

Type: Technical Note

Published: 2005, Volume 55, Issue 5, Pages 585-593

Abstract: This report is based on a small database and the resulting percentages may not apply to other larger systems. However, you may be surprised at how efficient you can make your AFIS with a little creative thinking and a little extra effort.

An Analysis of Epidermal Ridges on Ancient Sumerian Tablets

Author(s): Bailey, J. A.; Veenker, R. A.

Type: Technical Note

Published: 2005, Volume 55, Issue 5, Pages 594-604

Abstract: Epidermal ridge impressions on clay artifacts from antiquity have been observed by historic and contemporary research-ers during the past two centuries. An examination of four Sumerian tablets from the Ur III period revealed epidermal ridge impressions that were made when the clay was in a plastic state. The location of the ridge impressions can assist the investigator in reconstructing pos-sible positions in which the tablet was held when the impressions were formed. Also, the approximate diameter and condition of the ridges provide some information about the attributes of the Sumerian who handled the tablets. Even though the findings are not conclusive, they offer researchers a method for analyzing ancient tablets.

Electrostatic Dust Lifting on Metallic Surfaces Using Automotive Window Tinting Film as a Nonconductive Barrier

Author(s): Adair, T. W.

Type: Technical Note

Published: 2005, Volume 55, Issue 5, Pages 605-610

Abstract: Electrostatic devices use a high-voltage electrical current to charge a surface and attract dust particles left from shoe outsoles and other objects to a metallic film. Placing this film in direct con-tact with a conductive substrate, such as a metal vehicle, can cause damage to the film and increases the risk of injury to the analyst and damage to property. The use of a nonconductive film barrier allows for the use of the metallic film and the electrostatic dust lifter in obtaining shoe impressions from metal surfaces such as automobiles and countertops.

Establishing a Maximum Effective Range for String Shooting Reconstructions

Author(s): Rose, D.

Type: Technical Note

Published: 2005, Volume 55, Issue 5, Pages 611-617

Abstract: The goal of this experiment was to identify an approxi-mate maximum effective range for the string reconstruction method using three different nylon strings. A practice wall was used that had been created in the past for this type of reconstruction experimen-tation. This moveable section of wall has numerous existing bullet strikes. Some of these bullet strikes were reconstructed with string and by mathematical calculation to determine an approximate margin of vertical error for string reconstruction.

Serviceability of Obsolete WWII German Rifle

Author(s): Ravikumar, R.; Rajan, P.; Thirunavukkarasu, G.; Vijay, S.

Type: Case Report

Published: 2005, Volume 55, Issue 5, Pages 618-623

Abstract: An old bolt-action rifle was submitted for examination. Firearm identity and serviceability were important issues. The identity of the firearm was established as an obsolete 7.92 mm Mauser. However, because of the lack of suitable ammunition, smaller caliber ammunition was used to test the rifle's serviceability.

Matching Vehicle Parts Using Brush Strokes

Author(s): Novoselsky, Y.; Tsach, T.; Volkov, N.; Shor, Y.

Type: Article

Published: 2005, Volume 55, Issue 5, Pages 624-632

Abstract: A study is presented that demonstrates the indirect matching of vehicle parts. The challenge in this case was that the parts had been cut with a grinder, resulting in a removal of mate-rial during the cutting process. This created a missing area between the parts that prevented a direct (physical) match. The brush strokes (striations) of a polymer sealant (applied during the manufacturing of the vehicle) were sufficient to match the vehicle parts, in spite of the gap in the material.

Obtaining Typable DNA from Bloodstains that Serologically Test Negative

Author(s): Coy, K. L.; Lewis, K. E.; Fulmer, A.; Hudson, A.; Dawson-Cruz, T.

Type: Article

Published: 2005, Volume 55, Issue 5, Pages 633-643

Abstract: Confirmatory serology tests are often utilized at crime scenes or in the laboratory to determine whether evidence should be submitted for further DNA analysis. Previous literature has reported that bloodstains contaminated with detergents can result in altered serological test results. The purpose of this study was to evaluate whether typable DNA could be obtained from bloodstains treated with household detergents and bleach, specifically when a negative serological result was obtained. Bloodstains were diluted up to a con-centration of 1:500, applied to a cotton T-shirt, and then subjected to treatments of machine-washing in water, Tide, or bleach. The samples were then tested for the presence of human hemoglobin using the ABAcard HemaTrace assay. For each sample, DNA was organically extracted and quantified by the QuantiBlot method, followed by STR amplification using the AmpFISTR Profiler Plus PCR kit. The ampli-fied samples were size-separated by capillary electrophoresis using an ABI 3100 Avant Genetic Analyzer. Data analysis of the Profiler Plus loci was performed using the GeneScan and Genotyper software. The resulting genotypes of the STR loci indicate that typable DNA is often present even though a negative serological result may be obtained prior to DNA testing. Furthermore, the data show that bloodstains washed in bleach are capable of yielding a complete profile. On the basis of these results, investigators and examiners should use caution when interpreting screening test results, because negative serological results cannot always be used to predict the ability to successfully genotype DNA. [See letter to the editor by P. Hoffsass in JFI 56 (1).]

Crime Scene Processing Laboratory Manual and Workbook by D. A. Hayden

Author(s): Parkinson, G. A.

Type: Book Review

Published: 2005, Volume 55, Issue 5, Pages 644-645

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2005, Volume 55, Issue 5, Page 678

Abstract: This is a very interesting example of what injuries to the dermis level of skin can do to the pattern area. Shown are three photographs of the left thumb of the same person. The top image was taken July 1, 1987 and is a 10-count ULNAR LOOP. The middle image was taken March 3, 1993, showing an obvious injury below the core and affecting the type-line, therefore requiring a classification of an ULNAR LOOP, referenced to a WHORL. The bottom image was taken January 16, 1997, where it appears the injury to the dermis has changed the pattern type to a PLAIN WHORL with a meet tracing. This image should be referenced to an ULNAR LOOP.

Counterfeit NIS 10 Coins in Israel

Author(s): Tsach, T.; Shor, Y.; Volkov, N.; Novoselsky, Y.

Type: Technical Note

Published: 2005, Volume 55, Issue 4, Pages 433-441

Abstract: The problem of counterfeit coins exists in many countries. Until 1995, coins from Israel were a single color and were easily duplicated. In 1995, the Bank of Israel issued a new Israel shekel 10 coin that was intended to reduce the likelihood of counterfeiting. After the initial distribution of the new coins, counterfeits soon appeared. This report describes the various processes used to produce counterfeit coins.

Assessing the Competency of Crime Scene Investigators in the United Kingdom

Author(s): Pepper, I. K.; Pepper, H.

Type: Technical Note

Published: 2005, Volume 55, Issue 4, Pages 442-447

Abstract: This paper highlights the benefits of competency assessments and the methods by which crime scene investigators in the United Kingdom are assessed. It deals with the key organizations of The Council for the Registration of Forensic Practitioners and Skills for Justice, along with the use of assessment and development centers. In conclusion, the paper suggests that the use of competency assessment is a positive step forward.

Analysis of Bullet Wipe Patterns on Cloth Targets

Author(s): Bailey, J. A.

Type: Technical Note

Published: 2005, Volume 55, Issue 4, Pages 448-460

Abstract: This study was conducted to determine the reliability of bullet wipe patterns on cloth targets for use by the investigator in analyzing and reconstructing the events in a crime scene investigation. The study included variables such as ammunition, distance to target, and angle of impact. The study examined the coloration and measurements of the bullet wipes and the effect of the variables tested. Although bullet wipe patterns can assist in reconstructing the events, the investigator should exercise caution when interpreting bullet wipe patterns.

Articulating a Concise Scientific Methodology for Bloodstain Pattern Analysis

Author(s): Saviano, J.

Type: Technical Note

Published: 2005, Volume 55, Issue 4, Pages 461-470

Abstract: The increasing number of recent courtroom challenges to various areas of forensic science has forced examiners to re-examine their methods of explaining analyses. Although the methodology involved in these disciplines is generally sound, many examiners have difficulty putting into words the steps involved in reaching their conclusions. This article addresses the discipline of bloodstain pattern analysis and attempts to describe an easy-to-understand methodology that can be articulated in the courtroom.

Obtaining Fingerprint and Palmprint Impressions from Decomposed Bodies or Burn Victims using the Mikrosil Casting Method

Author(s): Tomboc, R.; Schrader, M.

Type: Case Report

Published: 2005, Volume 55, Issue 4, Pages 471-479

Abstract: This report discusses the success that has been achieved by using the Mikrosil casting method in obtaining exemplar prints from cadavers and also its advantages over other traditional methods.

Fingerprint Patterns: A Study on the Finger and Ethnicity Prioritized Order of Occurrence

Author(s): Swofford, H. J.

Type: Technical Note

Published: 2005, Volume 55, Issue 4, Pages 480-488

Abstract: This study provides a mathematical link between fingerprint pattern types, the ethnicity in which they occur, and the fingers on which they occur. In doing so, the study reveals an order based on priority of occurrence of the most likely fingerprint pattern types to occur in a specific ethnicity along with the most likely fingerprint pattern types to occur on a specific finger. This study uses statistical analysis to validate the prioritized order of occurrence.

Computer Assisted Analysis of Footprint Geometry

Author(s): Natarajan, N.; Cecil, G. M.

Type: Technical Note

Published: 2005, Volume 55, Issue 4, Pages 489-498

Abstract: The dimensions of a footprint are generally figured manually, using geometrical constructions. When applying various methods that are available in the literature for footprint study, even customized automated software may not be adequate. Now these dimensions can be figured much faster and with greater accuracy using the general-purpose desktop publishing software Adobe Pagemaker.

An Interesting Case Involving Footwear Distribution Information

Author(s): Black, J. P.

Type: Case Report

Published: 2005, Volume 55, Issue 4, Pages 499-502

Abstract: Although it is not uncommon to individualize a questioned footwear impression to a particular shoe, it is certainly the exception to the rule. In most cases in my experience, the highest degree of association between questioned and known impressions is correspondence in combined class characteristics such as physical size, shape, and outsole design. However, simply reporting this correspondence may not be the best information that can be provided to the investigator. The addition of distribution information for a particular shoe could strengthen your conclusions. This is the approach that was taken in this case. (See letter to the editor by John P. Black in JFI 55 (6).)

Manufacturing Variations in a Die-Cut Footwear Model

Author(s): Kainuma, A.

Type: Article

Published: 2005, Volume 55, Issue 4, Pages 503-517

Abstract: In this study, a hundred pairs of a footwear model produced through a die-cut process were examined for variations produced as a result of the manufacturing process. No two pairs were found to share identical features. Variations were found not only in the orientation of the pattern on the soles but also in the physical dimensions of the pattern.

The Practice of Crime Scene Investigation by J. Horswell

Author(s): Black, J. P.

Type: Book Review

Published: 2005, Volume 55, Issue 4, Pages 518-521

The Detection Of Human Remains by E.W. Killam

Author(s): Parkinson, G. A.

Type: Book Review

Published: 2005, Volume 55, Issue 4, Pages 522-523

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2005, Volume 55, Issue 4, Page 562

Abstract: This is an unusual and interesting fingerprint . . . the postmortem subject printed has two right thumbs webbed together, making it impossible to roll on the inside of each thumb. Such fingers should be rolled as completely as possible and a notation made to the effect that they are joined. The ridges appear to flow upwards, forming a "cuspal" pattern (see QUIP Back-to-Basics Sept/Oct 2003, Vol. 53, No. 5). This thumb print would be classified as a TENTED ARCH, with references to an Ulnar Loop and an Accidental Whorl.

re: A New Silver Physical Developer, J. For. Ident. 54 (4)

Author(s): Cantu, A. A.

Type: Letters

Published: 2005, Volume 55, Issue 3, Pages 289-290

Coins in the Pocket: A Simple Explanation of Quantitative — Qualitative Friction Ridge Analysis

Author(s): Ramsey, P.

Type: Commentary

Published: 2005, Volume 55, Issue 3, Page 291

Development of Latent Prints using Titanium Dioxide (TiO2) in Small Particle Reagent, White (SPR-W) on Adhesives

Author(s): Williams, N. H.; Elliott, K. T.

Type: Technical Note

Published: 2005, Volume 55, Issue 3, Pages 292-305

Latent Fingerprint Imaging: How to Reproduce an Image of a Latent Print to a Specific Size

Author(s): Lackey, B.

Type: Technical Note

Published: 2005, Volume 55, Issue 3, Pages 306-311

Abstract: The report describes methods to capture 1:1 photographs with a copy camera and also describes a simple way to resize images that were not taken at a 1:1 ratio.

The First Use of a Composite Image in Forensic Facial Superimposition: The Case of John Paul Jones, 1907

Author(s): Rogers, N. L.

Type: Article

Published: 2005, Volume 55, Issue 3, Pages 312-325

Abstract: The United States' Revolutionary War hero John Paul Jones (1747-1792) died of natural causes in Paris during the French Revolution and was buried pending repatriation to the United States. An agreement to return his body was not negotiated and the location of his unmarked grave was forgotten. His coffin was located in 1905 and the remains were positively identified with the aid of a portrait bust sculpted by French artist Jean Antoine Houdon. The official reports of the identification were published in 1907 and include a composite photographic superimposition of the Houdon bust and the remains of John Paul Jones. Contrary to the published literature that identifies the 1935 Ruxton case as the first forensic use of composite photographic superimposition, the published report of the John Paul Jones case was the first publication of such an image. This article details the circumstance of the superimposition and compares it to other historically noteworthy cases.

The Recovery of Fingerprint Evidence from Crime Scenes Contaminated with Chemical Warfare Agents

Author(s): Wilkinson, D.; Hancock, J.; Lecavalier, P.; McDiarmid, C.

Type: Article

Published: 2005, Volume 55, Issue 3, Pages 326-361

Abstract: This paper explores how the presence of chemical warfare agents affect the ability of the forensic identification specialist to recover latent fingerprint evidence using common fingerprint development techniques. The effects of exposure to vapor versus liquid chemical warfare agents on the performance of fingerprint development techniques, and decontamination before and after fingerprint processing, are also considered. Standard operating procedures for evidence processing in the presence of a variety of different chemical warfare agents are described.

Recovery of Latent Prints from Human Skin

Author(s): Sampson, W. C.; Sampson, K. L.

Type: Article

Published: 2005, Volume 55, Issue 3, Pages 362-385

Abstract: A review of personal experience, published accounts, interviews, case reports, and data collected from more than 4,000 student questionnaires pertaining to the recovery of latent prints from human skin is presented. The surface conditions of the body and the ambient environment (temperature and humidity) are discussed, and recommendations are presented to achieve optimum results. This article provides a guideline for the processing of human skin for latent prints and suggests that efforts to obtain latent prints from human skin are sporadic and should be increased. (See letters to the editor by E. Hamm and B. Yamashita in JFI 55 (5).)

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2005, Volume 55, Issue 3, Page 430

Abstract: The ACCIDENTAL WHORL is an interesting pattern consisting of a combination of two different types of pattern (excluding the plain arch) with two or more deltas, or a pattern which possesses some of the requirements for two or more different types, or a pattern which conforms to none of the definitions. To trace an accidental whorl, locate the ridge emanating from the lower side or point of the extreme left delta and trace until the point nearest or opposite the extreme right delta is reached (The Science of Fingerprints, FBI). All four impressions shown are ACCIDENTAL WHORLS. Figure A is a loop over a plain whorl with three deltas, inner tracing. Figure B is a loop over a double-loop whorl, inner tracing. Figure C (both index fingers from the same person) shows the right index finger is a loop over a plain whorl, inner tracing (tracing will be same as the opposite finger since the far right delta is not recorded, with a reference to a meet and outer tracing necessary) and the left index finger is a loop over a double-loop whorl, inner tracing.

Testifying to the Question of "Points"

Author(s): Gray, L. M.

Type: Commentary

Published: 2005, Volume 55, Issue 2, Pages 165-168

Restoring Faded Authentiprint Fingerprint Image on a Check

Author(s): Tomboc, R.

Type: Case Report

Published: 2005, Volume 55, Issue 2, Pages 169-175

Suicide by Simultaneous Discharge of Two Handguns

Author(s): Adair, T. W.; Cloyd, D. W.; Isaacson, B.; Dobersen, M.; Goodman, C.; McDonald, A. K.

Type: Case Report

Published: 2005, Volume 55, Issue 2, Pages 176-180

Aging of Shoes and its Effect on Shoeprint Impressions

Author(s): Wyatt, J. M.; Duncan, K.; Trimpe, M. A.

Type: Technical Note

Published: 2005, Volume 55, Issue 2, Pages 181-188

Functionalized Europium Oxide Nanoparticles for Fingerprint Detection: A Preliminary Study

Author(s): Menzel, E. R.; Schwierking, J. R.; Menzel, L. W.

Type: Technical Note

Published: 2005, Volume 55, Issue 2, Pages 189-195

Abstract: We report the lipid-based detection of fingerprints with amino-functionalized europium oxide nanoparticles, utilizing diimidemediated amidation that targets carboxylic acid functionalities of fingerprint constituents. The functionalized nanoparticles are easy to prepare. Their use may remedy a number of problems associated with current europium-based chemical fingerprint detection. The fingerprint photoluminescence detection can be carried out in the usual fashion or with nowadays facile time-resolved techniques to suppress background fluorescence.

Forensic Examination of Shampoo Residues in Human Head Hair

Author(s): Pillyal, S.; Garg, R. K.

Type: Technical Note

Published: 2005, Volume 55, Issue 2, Pages 196-201

Abstract: Nine different samples of human hair shampoo residues that were obtained from eighteen individuals were analyzed by thinlayer chromatography (TLC). Fifteen different solvent systems with two visualization aids (UV light and iodine fuming) were attempted for the separation of the shampoo residue from the human hair. In this study, methanol:water (70:30) as a solvent system and iodine fuming as a visualizing aid were found to be the most suitable for the separation of the constituents. This study can help in eliminating an individual as a suspect of a crime.

The Development of Latent Fingerprints on Thermal Paper Using a Novel, Solvent-Free Method

Author(s): Wakefield, M.; Armitage, S.

Type: Technical Note

Published: 2005, Volume 55, Issue 2, Pages 202-213

Abstract: Since its emergence, thermal paper has been a problematic substrate for latent print development because of interactions between the paper's chemical components and the solvents used in chemical development reagents. Techniques that have been used with success, such as ninhydrin, iodine fuming, or ninhydrin in HFE-7100, cannot be used at crime scenes because they require specialized equipment, can be time-consuming, and may involve toxic or hazardous chemicals. Recent anecdotal evidence has suggested a rapid, solventfree method of visualizing latent fingerprints on thermal paper: the application of low-temperature heat using a hair dryer.

Evaluation of Techniques for the Detection and Enhancement of Latent Fingermarks on Black Electrical Tape

Author(s): Schiemer, C.; Lennard, C.; Maynard, P.; Roux, C.

Type: Article

Published: 2005, Volume 55, Issue 2, Pages 214-238

Abstract: This study investigated a selection of methods to detect latent fingermarks on black electrical tapes. Subsequently, a sequence of techniques was developed and is suggested as a standard operating procedure.

Different formulations of white and silver powder suspensions were developed by comparing Citron detergent and Kodak Photo-Flo as the surfactant in the suspension. A mixture of both surfactants in the suspensions repeatedly produced greater fingerprint development on the adhesive side compared to using either one on its own.

Two techniques consistently performed to a higher standard for both fresh and aged marks on the adhesive side: cyanoacrylate followed by a combined basic yellow 40/basic red 28 stain and the white powder suspension. The contrast, sharpness, ridge detail, and simplicity of preparation and application achieved with both of these techniques made them superior to the other methods tested. The sequence that proved successful on the adhesive side of all tapes tested involved cyanoacrylate fuming and application of a fluorescent stain, followed by white powder suspension, and finally gentian violet with a transfer of developed marks if necessary. This sequence allowed maximum development and the greatest enhancement of latent marks, without causing the destruction of the deposit for subsequent methods. Latent fingermarks on the backing (nonadhesive side) of the electrical tape were also successfully developed with cyanoacrylate and the fluorescent stain, so treatment of the backing could be incorporated into the sequence.

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2005, Volume 55, Issue 2, Page 286

Abstract: This is a rare example of extreme DYSPLASIA, the incomplete or faulty development of friction skin, resulting in patternless surfaces. Because of faulty embryological development, the individual ridge elements failed to align in continuous ridges (Fingerprint Techniques, Moenssens). When classifying these patternless ridges, the same rule applies as when the same fingers on both hands are scarred beyond recognition: all ten prints would be classified as WHORL patterns with MEET tracings.

The Application of Infrared Photography in Bloodstain Pattern Documentation of Clothing

Author(s): Perkins, M.

Type: Technical Note

Published: 2005, Volume 55, Issue 1, Pages 1-9

A Comparison of Cyanoacrylate Fuming in a Vacuum Cabinet to a Humidity Fuming Chamber

Author(s): Bessman, C. W.; Nelson, E.; Lipert, R. J.; Coldiron, S.; Herrman, T. R.

Type: Technical Note

Published: 2005, Volume 55, Issue 1, Pages 10-27

Abstract: Two new types of cabinets for cyanoacrylate (CA) fuming were constructed and tested to determine whether either would develop better latent prints than a CA fuming cabinet using a heating element. The first type, a humidity cabinet, consisted of a glove box modified to provide precise control of both the CA vaporization temperature and the humidity level in the cabinet. The second cabinet was a vacuum chamber in which the pressure could be controlled over a wide pressure range (from atmospheric pressure down to < 0.1 torr). The operating conditions and fuming methods that gave the best results with various types of substrates were determined for each cabinet. Prints developed with the optimized methods were compared to results obtained using a normal cabinet (i.e., a cabinet with no pressure or humidity control using a single hot plate for CA heating). Thirteen different substrates were tested to determine which cabinet produced the best prints for each type of surface. Particular attention was paid to determining whether either cabinet would lessen the background discoloration often found after performing CA fuming in a normal cabinet. Less background enhances the contrast between the ridges and the substrate, making the ridges easier to analyze and evaluate. It was determined that both the humidity and the vacuum cabinets produced better results (e.g., less background coloring and sharper, clearer ridge detail) on most substrates than prints developed in the normal cabinet. (See letter to the editor by Terry Kent in JFI 55 (6).).

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2005, Volume 55, Issue 1, Page 162

Abstract: This is a questionable pattern. Since the rod does not reach the shoulders of the loop, it cannot be used for the core location. By using A & B as the type lines (they tend to run parallel and diverge), the delta is placed on the recurve, resulting in no ridge count. This should be classified as a TENTED ARCH, referenced to a 1 count left slant loop.

Thin-Layer Chromatographic Analysis of Liquid Lipsticks

Author(s): Jasuja, O. P.; Perkins, M.

Type: Technical Note

Published: 2005, Volume 55, Issue 1, Pages 28-35

Abstract: Lipstick stains are commonly encountered in cases such as homicide, rape, burglary, and anonymous letters. Lipstick stains may be found on glasses, tea cups, cigarette butts, bedding, tissue papers, envelopes, skin, and so forth. These stains, if analyzed properly, may prove to be of forensic significance to provide a link

among the suspect, victim, and crime scene. Thin-layer chromatography is one of the most simple and economic methods used in forensic analysis. The analysis of conventional cake lipsticks has been reported in the literature, but recently a different variety of lipsticks has been introduced to the market: liquid lipsticks. To the best of our knowledge, no work has been reported for their analysis. In this work, an attempt was made to analyze samples of liquid lipsticks by thin-layer chromatography.

Latent Print on Glass Surface: Deposited Before or After Breakage?

Author(s): Ellis, E. L.

Type: Technical Note

Published: 2005, Volume 55, Issue 1, Pages 36-46

Abstract: A latent palmprint was developed on the inside surface of a broken window at the scene of a burglary. The print was located at the edge of the glass adjacent to the break. Specific features of the developed print were noted and were considered to possibly have probative value in establishing whether the print was placed on the surface before or after the breakage. Experiments were conducted that provided results that support the determination of the print deposition and glass breakage sequence.

SWGTREAD

Author(s): Wiersema, S.

Type: Special Feature

Published: 2005, Volume 55, Issue 1, Pages 47-48

Abstract: The Scientific Working Group on Shoeprint and Tire Tread Evidence (SWGTREAD) was created by the Federal Bureau of Investigation (FBI) to serve as a professional forum in which experts in the forensic analysis of shoeprint and tire tread evidence and practitioners from related fields share, discuss, and evaluate methods, techniques, protocols, quality assurance, education, and research relating to shoeprint and tire tread evidence. The first meeting was held in Quantico, VA in September 2004. Published here are six (6) draft documents produced at that meeting. These documents provide SWGTREAD guides regarding the detection and collection of shoeprint and tire tread evidence in the field and in the laboratory, a scope of work statement, and a guide for the preparation of test impressions.

SWGTREAD — Scope of Work Relating to Forensic Footwear and/or Tire Tread Examiners

Author(s): SWGTREAD

Type: Special Feature

Published: 2005, Volume 55, Issue 1, Pages 49-50

Abstract: 1. Scope

1.1 This description covers, in general, the duties of forensic footwear and/or tire tread examiners.

SWGTREAD — Guide for the Detection of Footwear

Author(s): SWGTREAD

Type: Special Feature

Published: 2005, Volume 55, Issue 1, Pages 51-53

Abstract: 1. Scope

1.1 This Guide provides procedures for the detection of footwear and tire impressions in the field.

1.2 The particular procedures and methods employed in a given case will depend on the nature and quality of the impressions.

1.3 This Guide may not cover all aspects of unusual or uncommon conditions.

1.4 This Guide does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this Guide to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

SWGTREAD — Guide for the Collection of Footwear and Tire Impressions in the Field

Author(s): SWGTREAD

Type: Special Feature

Published: 2005, Volume 55, Issue 1, Pages 54-56

Abstract: 1. Scope

1.1 This Guide provides procedures for the collection of footwear and tire impressions in the field.

1.2 The particular procedures and methods employed in a given case will depend on the nature and quality of the impressions.

1.3 This Guide may not cover all aspects of unusual or uncommon conditions.

1.4 This Guide does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this Guide to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

SWGTREAD — Guide for the Detection of Footwear and Tire Impressions in the Laboratory

Author(s): SWGTREAD

Type: Special Feature

Published: 2005, Volume 55, Issue 1, Pages 57-59

Abstract: 1. Scope

1.1 This Guide provides procedures for the detection of footwear and tire impressions in the laboratory.

1.2 The particular procedures and methods employed in a given case will depend on the nature and quality of the evidence.

1.3 This Guide may not cover all aspects of unusual or uncommon conditions.

1.4 This Guide does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this Guide to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

SWGTREAD — Guide for the Collection of Footwear and Tire Impressions in the Laboratory

Author(s): SWGTREAD

Type: Special Feature

Published: 2005, Volume 55, Issue 1, Pages 60-62

Abstract: 1. Scope

1.1 This Guide provides procedures for the collection of footwear and tire impressions in the laboratory.

1.2 The particular procedures and methods employed in a given case will depend on the nature and quality of the evidence.

1.3 This Guide may not cover all aspects of unusual or uncommon conditions.

1.4 This Guide does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this Guide to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

SWGTREAD — Guide for the Preparation of Test Impressions from Footwear and Tires

Author(s): SWGTREAD

Type: Special Feature

Published: 2005, Volume 55, Issue 1, Pages 63-68

Abstract: 1. Scope

1.1 This Guide provides procedures for the preparation of test impressions from footwear and tires.

1.2 The particular procedures and methods employed in a given case will depend on the examination needs.

1.3 This Guide may not cover all aspects of unusual or uncommon conditions.

1.4 This Guide does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this Guide to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

Fingerprints and Other Ridge Skin Impressions

Author(s): Wertheim, K.

Type: Book Review

Published: 2005, Volume 55, Issue 1, Pages 69-72

Sex-Related Homicide and Death Investigation: Practical and Clinical Perspectives by V.J. Vernon

Author(s): Napier, M. R.

Type: Book Review

Published: 2005, Volume 55, Issue 1, Pages 73-74

re: Analysis of the Radio Shack Micro-30 and the Olympus Pearlcorder S950 Time Code, J. For. Ident. 54 (4)

Author(s): Bell, D. A.

Type: Letters

Published: 2004, Volume 54, Issue 6, Pages 625-632

Write into the Future

Author(s): Greenfield, C.

Type: Commentary

Published: 2004, Volume 54, Issue 6, Pages 633-636

Introduction to the Trigonometric Shooting Reconstruction Method

Author(s): Rose, D.; Ekleberry, T.; Wilgus, G.

Type: Technical Note

Published: 2004, Volume 54, Issue 6, Pages 637-644

Abstract: This article is an introduction to the use of trigonom-etry for the urpose of reconstructing shooting cenes. It was written to provide the crime scene investigator, without a background in mathematics, with a basic look at how mathematical reconstruction is performed. This method has been reliable and is complementary to other reconstruction methods.

Studies on the Layer Structure of Paint Flakes Collected from Motor Vehicles in Kuala Lumpur, Malaysia

Author(s): Alwi, A. R.; Kuppuswamy, R.

Type: Technical Note

Published: 2004, Volume 54, Issue 6, Pages 645-652

Abstract: Paint is important trace evidence encountered during the investigation of crime, especially in hit-and-run vehicular homicide cases, burglaries, and art forgeries. Paint flakes were collected at random from one hundred motor vehicles in the city of Kuala Lumpur, Malaysia. They were studied under a stereomicroscope (20 X to 115 X) for color and layer structure. Under microscopic examination, all the paint flake specimens were distinguishable from one another, based on layer structure cross-section. Thus, the layer structure of a paint flake is significant in the characterization of paint evidence.

Study on the Direct Developing of a Latent Fingerprint Using a New Fluorescent Developer

Author(s): Li, C.; Li, B.; Yu, S.; Gao, J.; Yao, P.

Type: Technical Note

Published: 2004, Volume 54, Issue 6, Pages 653-659

Abstract: This paper reports a new fluorescent developer, Eu-Tb-PA-OPA-SDS, consisting of europium, terbium, tho-phthalic acid, and ortho-phenanthroline. This is a multiple component chelate that can be used to develop latent fingerprints directly in the presence of a surfactant (e.g., sodium dodecyl sulphonic acid).

Recovery of DNA from Latent Blood after Identification by Fluorescein

Author(s): Martin, L. A.; Cahill, C. F.

Type: Article

Published: 2004, Volume 54, Issue 6, Pages 660-667

Abstract: Luminol has been widely used in the field of crime scene investigations to detect latent blood; however, luminol has the ten-dency to destroy DNA evidence. Fluorescein, an alternative to luminol for detecting latent blood at a crime scene, does not destroy DNA evidence. This paper demonstrates the successful recovery of DNA from a blood sample treated with fluorescein. DNA was extracted from blood-containing denim substrates after fluorescein was applied to the substrates. The DNA locus, D18S51, was amplified using standard polymerase chain reaction (PCR) techniques, analyzed by electropho-resis, and used to demonstrate that DNA was successfully recovered from the samples.

Trace DNA: An Underutilized Resource or Pandora's Box? A Review of the use of Trace DNA Analysis in the Investigation of Volume Crime

Author(s): Raymond, J. J.; Walsh, S. J.; Van Oorschot, R. A.; Gunn, P. R.; Roux, C.

Type: Article

Published: 2004, Volume 54, Issue 6, Pages 668-686

Abstract: Spectacular advances in DNA technology have greatly expanded its applicability to forensic science. As the processes become sufficiently sensitive to detect trace DNA, a vast number of crime scene samples not previously considered for analysis are now able to be tested. However, in spite of these obvious benefits, trace DNA anal-ysis raises problems not often considered by investigators and forensic scientists. This paper discusses the history and development of trace DNA analysis. It suggests a trend of underutilization and discusses issues surrounding its application and alternative uses for the results gained. The approach in the past has been that DNA evidence was solely employed as an absolute form of evidence, and, consequently, research focused primarily on increasing sensitivity and discrimina-tion power. We are suggesting that DNA evidence should be treated as any other trace evidence. Research to provide data for basic trace evidence properties of deposit, presence, transfer, and persistence may allow trace DNA analysis to be more effectively utilized in the investigation of crime. Together with recent developments in forensic intelligence, this research could facilitate the progressive application of trace DNA analysis to volume crime investigations, an outcome with the potential to reduce the rate of volume crime and contribute to crime prevention strategies.

The Detection and Enhancement of Latent Fingermarks on Porous Surfaces — A Survey

Author(s): Wallace-Kunkel, C.; Roux, C.; Lennard, C.; Stoilovic, M.

Type: Article

Published: 2004, Volume 54, Issue 6, Pages 687-705

Abstract: The most common reagents for fingerprint development on porous surfaces are ninhydrin and DFO. However, a large number of different reagent formulations are in use in fingerprint laboratories around the world. 1,2-Indanedione is also emerging as a potential reagent for the development of fingermarks on porous surfaces in routine casework. This situation prompted this study in which a survey was undertaken. The aims of the survey were two-fold:1. Determine the type and frequency of use of fingerprint reagents applied to porous surfaces.2. Determine the fingerprint community's awareness and experience with 1,2-indanedione.The fingerprint survey was sent to state police laboratories in Australia and New Zealand and to members of major fingerprint research groups and laboratories in the USA, UK, and Europe. Thirty-four responses were received from nine countries. These responses indicated a high degree of variability, in both the testing performed and the reagent formulations employed.Although only thirty-four agencies responded, some valuable insight into the lack of awareness and implementation of 1,2-indane-dione is presented.

A Report on the Erroneous Fingerprint Individualization1 in the Madrid Train Bombing Case

Author(s): Stacey, R. B.

Type: Special Feature

Published: 2004, Volume 54, Issue 6, Pages 706-720

Abstract: In the aftermath of the March 11, 2004, Madrid train bombing, personnel from the FBI Latent Print Unit performed a finger-print analysis and reported an individualization of a latent print with a candidate print from an Integrated Automated Fingerprint Identification (IAFIS) search. It was subsequently determined that the individualization was in error, and the latent print was ultimately identified to a different subject.This report provides information regarding the corrective actions the FBI Laboratory implemented upon recognizing the error, an outline of significant events surrounding the FBI's fingerprint investigation, and a synopsis of the comments by an international committee regarding the erroneous fingerprint conclusion.

Handbook of Fingerprint Recognition by D. Maltoni; D. Maio; A. K. Jain; S. Prabhakar

Author(s): Downs, M.

Type: Book Review

Published: 2004, Volume 54, Issue 6, Pages 719-720

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2004, Volume 54, Issue 6, Page 754

Abstract: These are unusual palm prints. The man printed has an extra thumb joint in both hands!

Impact Marks from Ejected Cartridge Casings

Author(s): Poorman, J. K.; Spring, T. K.

Type: Technical Note

Published: 2004, Volume 54, Issue 5, Pages 525-529

Abstract: Ejected casings from handguns fired at a shooting range were observed to leave impact marks on nearby wooden support posts. This led to the idea that such marks could be present at shooting scenes and, if found, could provide additional information to aid in scene reconstructions. The identification and careful interpretation of such marks from actual shooting scenes could assist in reconstructing shooting incidents.

The Use of Electrostatic Equipment to Retrieve Impressions from the Human Body

Author(s): Tovar, R. M.

Type: Case Report

Published: 2004, Volume 54, Issue 5, Pages 530-533

Abstract: Most articles submitted to forensic journals contain suc-cess stories. Unfortunately, this one does not, but it does demonstrate the viability of an electrostatic technique for retrieving impressions from human skin in certain situations. Most uses of electrostatic equipment focus on the retrieval of impressions made on hard surfaces, such as the impressions left on hard surfaces by dirt or dust from the soles and heels of shoes. In addition to its use for retrieving impressions left on hard surfaces, electrostatic equipment can also be considered for the examination of impressions left on human skin.

Old Latent Prints Developed with Powder: A Rare Phenomenon?

Author(s): Azoury, M.; Rozen, E.; Uziel, Y.; Peleg-Shironi, Y.

Type: Technical Note

Published: 2004, Volume 54, Issue 5, Pages 534-541

Abstract: Several cases of relatively old prints developed with powder have been reported in the literature over the years. These are generally considered as unusual and fairly rare cases. Latent prints were deposited on two types of smooth substrates, exposed to different storage conditions in two geographic sites, and developed with powder at various intervals for a total period of nine months. It was found that identifiable fingerprints could be easily developed with magnetic powder, even months after being deposited.

Bloody Latent Fingerprint Detection using LeuR6G

Author(s): Yapping, L.; Yue, W.

Type: Technical Note

Published: 2004, Volume 54, Issue 5, Pages 542-546

Abstract: This research, which tested varying levels of blood-contaminated fingerprint marks on different surfaces, revealed that leuco rhodamine 6G aids blood-contaminated latent print visualization. The results were better on smooth surfaces than on rough surfaces. The age of the blood prints (tested to four weeks) was not a factor in the ability to visualize the prints.

Surveillance Video in Law Enforcement

Author(s): Lewis, D. L.

Type: Technical Note

Published: 2004, Volume 54, Issue 5, Pages 547-559

Ordinary and Time-Resolved Photoluminescence Field Detection of Traces of Explosives and Fingerprints

Author(s): Menzel, E. R.; Menzel, L. W.

Type: Technical Note

Published: 2004, Volume 54, Issue 5, Pages 560-571

Abstract: We describe field methodology for photoluminescence detection of traces of explosives as well as latent fingerprints. The pertinent instrumentation is simple, battery-powered, highly por-table, and usable in a daylight environment. It lends itself to standard detection as well as to time-resolved detection when background fluorescence is an issue.

Dental Identification Software ProgramsCompared on Disaster Size and Direction of Search

Author(s): Lewis, C.; Leventhal, L.

Type: Article

Published: 2004, Volume 54, Issue 5, Pages 572-592

Abstract: Computer software programs are frequently used to compare antemortem and postmortem dental records to assist victim identification at large disasters. We evaluated three programs – WinID2, WinID3, and CAPMI4 – in a computer-simulated disaster. Three hundred simulated antemortem records (victims) and 105 simulated postmortem records (fragments) were created from actual patient charts. We manipulated the number of victims (100, 200, and 300) and the direction of computer search (antemortem to postmortem and postmortem to antemortem), and measured the performance of the programs on two different measures (mean rank of correct match and total correct matches). The major effects were the same on both measures: (1) Postmortem-to-antemortem search beat antemortem-to-postmortem search by a large margin, with one exception. (2) The number of victims made a large difference only when little or no dental pathology was present. (3) WinID2 and WinID3 performed almost identically. (4) CAPMI4 and one data set of the WinID program, "Most Dental Hits", tied for best overall performance.

Hot Zone Forensics by S. C. Drielak

Author(s): Laska, P. R.

Type: Book Review

Published: 2004, Volume 54, Issue 5, Pages 593-594

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2004, Volume 54, Issue 5, Page 622

Abstract: This fingerprint pattern contains a ridge dot (one ridge unit) within the innermost recurving ridge. It is classified as a right-slant LOOP with a ridge count of five. Because the ridge dot may appear to be one ridge path making a complete circuit, the pattern is referenced to a CENTRAL POCKET LOOP WHORL.

re: The McKie Case — Opinions Versus Reporting Accuracy — Resolution to the IAI

Author(s): Bush, L.

Type: Letters

Published: 2004, Volume 54, Issue 4, Pages 409-412

New Technique for Revealing Latent Fingerprints on Wet, Porous Surfaces: Oil Red O

Author(s): Beaudoin, A.

Type: Technical Note

Published: 2004, Volume 54, Issue 4, Pages 413-421

Abstract: Oil red O (ORO) can be used to reveal latent finger-prints on porous surfaces that have been wet. Tests were carried out on various types of paper and cardboard. Compared with a physical developer, the ORO technique is much less complex and gives results of impressive clarity and intensity.

A New Silver Physical Developer

Author(s): Yapping, L.; Yue, W.

Type: Technical Note

Published: 2004, Volume 54, Issue 4, Pages 422-427

Abstract: Physical developer is a reagent that reacts with the lipids, fats, and oils that are present in fingerprint residues. This article presents a new physical developer formulation that uses only two solutions. The new physical developer can develop water-insoluble latent fingerprints on porous and nonporous surfaces and latent fingerprints on adhesive tape. It is stable, simple, inexpensive, and does not need maleic acid pretreatment. (See letter to the editor by A. Cantu in JFI 55 (3).)

Latent Shoeprint Recovery on Human Skin

Author(s): Wilgus, G.

Type: Case Report

Published: 2004, Volume 54, Issue 4, Pages 428-437

Abstract: The development of latent fingerprints on human skin in the field has been limited; some studies estimate that the chances are less than 1% [1]. The Ohio Bureau of Criminal Identification and Investigation has chosen to keep the process simple: fume the body with cyanoacrylate and use magnetic powder. Within an eleven-month period, the Bureau recovered two identifiable latent fingerprints from two bodies and also recovered a unique impression from a third homicide victim: a latent shoeprint.

Do Not Believe Everything You Think You See

Author(s): Herrera, J. D.

Type: Case Report

Published: 2004, Volume 54, Issue 4, Pages 433-437

Abstract: The lesson of this case is to avoid tunnel vision (e.g., loop versus whorl) and do not believe everything you think you see. These are all things we know and practice everyday, but sometimes we need to be reminded. Take a second look. Wipe away your assumptions and try again.

Progressive Processing: A Matter of Persistence

Author(s): Monday, T. D. Jr.

Type: Case Report

Published: 2004, Volume 54, Issue 4, Pages 438-441

Abstract: The successful result in this case was possible because of the collective efforts of an entire department, a commitment to the public, and a commitment to Alexandra's family. The team effort that was employed here kept me motivated to continue with progressive processing.

Analysis of the Radio Shack Micro-30 and the Olympus Pearlcorder S950 Time Code

Author(s): Koenig, B. E.; Lacey, D. S.; Killion, S. A.

Type: Article

Published: 2004, Volume 54, Issue 4, Pages 442-451

Abstract: All three of these cases required the intelligibility enhancement of the submitted microcassettes, and additionally, the murder case and the civil lawsuit involved analyzing the tapes for authenticity. In the enhancement examinations, an assessment of the time codes revealed the most accurate playback speeds. When analyzed in concert with other techniques used to authenticate audio recordings, the embedded time codes further validated the integrity and continuity of the recorded information. [See letter to the editor by D. Bell in JFI 54 (6).]

Evaluation of Polygraph Examination against a Background of its Evidential and Investigative Significance

Author(s): Jaworski, R.

Type: Article

Published: 2004, Volume 54, Issue 4, Pages 452-468

Abstract: Eight cases are presented where polygraph tests were given to persons suspected of murdering their own children (three persons) or parents (five persons). The polygraph tests showed no con-nection of the suspects to the homicide with which they were charged. This was later confirmed by other evidence. The analysis of the poly-graph charts of the eight tested persons shows that the opponents of the polygraph are mistaken when they claim that an innocent person will react to the relevant questions. The ethical aspect of these cases was emphasized because the polygraph tests enabled the "clearing" of the innocent persons of these serious accusations, which contributed to implementing justice. The polygraph should be assessed in positive, rather than negative, terms.

Legal Ease: A Guide to Criminal Law, Evidence, and Procedure by A. Campbell; R. Ohm

Author(s): Coker, L. M.

Type: Book Review

Published: 2004, Volume 54, Issue 4, Pages 469-471

Principles of Kinesic Interview and Interrogation

Author(s): Nowicki, S.

Type: Book Review

Published: 2004, Volume 54, Issue 4, Pages 471-472

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2004, Volume 54, Issue 4, Page 522

Abstract: The two pohtographs are of the rolled (A) and plain (B) impressions on the same fingerprint card. The pattern is classified as a CENTRAL POCKET LOOP WHORL. Distortion in the inking gives the appearance of the rolled impression to a plain loop, thus emphasizing the importance of referencing.

re: Proportional Analysis: The Science of Comparison, J. For. Ident. 53 (6)

Author(s): McKasson, S.

Type: Letters

Published: 2004, Volume 54, Issue 3, Pages 273-274

IAFIS Program: In-House Demonstration of Performance

Author(s): Onstwedder, J. I.

Type: Technical Note

Published: 2004, Volume 54, Issue 3, Pages 275-280

Abstract: The Illinois State Police Forensic Science Center at Chicago has developed a prototype Latent Print Forensic Workstation. Initially, the purpose of this workstation was to support the FBI's Integrated Automated Fingerprint Identification System (IAFIS). A lack of funding, infrastructure, and technical support forced our state to come up with unique solutions for the many challenges. Our final product not only supports IAFIS, but also performs many administrative and technical functions, as well.

Enhancing Fluorescence in Time-Resolved Imaging of Latent Fingerprints

Author(s): Ong, S. K.; Seah, L. K.; Murukeshan, V. M.; Ong, L. S.

Type: Technical Note

Published: 2004, Volume 54, Issue 3, Pages 281-295

Abstract: The time-resolved (TR) method has provided an alterna-tive platform in the time domain for the imaging of latent fingerprints via fluorescence. An improvement in the fluorescence lifetime resolution for this method from milliseconds to nanoseconds comes at the expense of the fluorescence emission intensity from the latent fingerprint. This paper explores the use of an optimized excitation parameter, such as the excitation wavelength, in conjunction with the nanosecond-TR imaging method as a remedy for the drawback. Results from the TR imaging study revealed an improvement in the visibility of the resultant fingerprint image upon the application of the optimized condition.

Persistence of Creases of the Foot and Their Value for Forensic Identification Purposes

Author(s): Massey, S. L.

Type: Technical Note

Published: 2004, Volume 54, Issue 3, Pages 296-315

Abstract: Foot morphology comparison is an established tool for bare and socked foot impressions left at crime scenes. This project attempts to confirm the persistence of foot creases. Volunteers' footprints were collected during a twelve-year period, and then those footprints were compared to subsequent impressions. The results lead the author to conclude that the number of foot creases varied per foot from zero to in excess of 90, averaging 15 per foot in the sample group used here. It was determined that foot creases remain persistent over time, and, when sufficient in number and significance, are a valuable tool for individualizing the donor. Barefoot impressions are rarely found at crime scenes and even more rarely are friction ridge detail and crease detail

present. When an impression displays sufficient detail for creases to be noted, even if the friction ridges are insufficient for analysis, the impressions should be collected and considered for potential forensic identification based on barefoot morphology and creases of the foot.

Duality of a Shotgun

Author(s): Ravikumar, R.; Rajan, P.; Thirunavukkarasu, G.; Vijay, S.

Type: Case Report

Published: 2004, Volume 54, Issue 3, Pages 316-320

Abstract: Generally, both homemade and factory-made shotguns that are encountered in criminal cases are submitted for firearms examination to establish their link with the crime through discharged shotshells. During the examination process, it is necessary to obtain test samples fired from the suspected firearm for comparison with the evidence collected. However, when a firearm fails to fire factory-made ammunition, it might be difficult to obtain test samples for comparison. This study describes how it was possible for the authors to establish the dual performance in respect to the serviceability of one such single-barreled, breech-loading (SBBL) shotgun.

The Burned Palm

Author(s): Spitsen, M.; Argaman, U.; Chaikovsk, A.; Shelef, R.; Levi, A.; Attias, D.; Hermon, D.

Type: Case Report

Published: 2004, Volume 54, Issue 3, Pages 321-326

Abstract: This case is unique because of the palm skin evidence that made the arsonist's identification possible, using fingerprint identification and the subsequent DNA matching. This report again emphasizes the importance of cooperation between the forensic laboratories, which leads to quality results.

Salary Study on Civilian Crime Scene Units at Sheriffs' Offices in the State of Florida

Author(s): Becker, J.; DeWitt, T.

Type: Article

Published: 2004, Volume 54, Issue 3, Pages 327-341

Abstract: The pay of civilian crime scene personnel at sheriffs' offices in Florida can vary greatly. Salaries are evaluated using several factors including size of department, educational requirements, and the Florida Department of Law Enforcement's Crime Index Rate.

SWGFAST Update

Author(s): McRoberts, A. L.

Type: Special Feature

Published: 2004, Volume 54, Issue 3, Pages 342-343

SWGFAST Quality Assurance Guidelines for Latent Print Examiners

Author(s): SWGFAST

Type: Special Feature

Published: 2004, Volume 54, Issue 3, Pages 344-352

SWGFAST Guidelines for Latent Print Proficiency Testing Programs

Author(s): SWGFAST

Type: Special Feature

Published: 2004, Volume 54, Issue 3, Pages 353-357

SWGFAST Special Notice Name Change for Major Case Prints to Complete Friction Ridge Exemplars

Author(s): SWGFAST

Type: Special Feature

Published: 2004, Volume 54, Issue 3, Pages 358-359

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2004, Volume 54, Issue 3, Page 406

Abstract: Shown are several thumb prints classified as either left or right slant LOOPS. They are interesting in that each contains another pattern formation in the extreme tip area of the thumbs.

re: Unusual Latent Print Examintions, J. For. Ident. 53 (5)

Author(s): Leadbetter, M.

Type: Letters

Published: 2004, Volume 54, Issue 2, Page 133

re: Book Review of Advances in the Forensic Analysis and Dating of Writing Ink, J. For. Ident. 53 (6) by G. M. LaPorte

Author(s): Brunelle, R. L.; Crawford, K. R.

Type: Letters

Published: 2004, Volume 54, Issue 2, Pages 134-139

Techniques for Digital Enhancement of Latent Prints Obscured by Disruptive Backgrounds

Author(s): Scarborough, S.; Dziemieszko, A.

Type: Technical Note

Published: 2004, Volume 54, Issue 2, Pages 141-149

Abstract: Three techniques for distracting overlay colors and distracting colored patterns are discussed. In cases where the color (not the pattern) is the distracter, these techniques can give better results than those achieved with Fast Fourier Transform (FFT) filters. In fact, some of these techniques can be combined in those instances when the bank stamp, the paper color, the developed print, and inked writing all fall within the same color range. In other words, multiple techniques may be necessary when there are a number of background distracters.

Background Subtraction Through Exhibit Substitution

Author(s): Dalrymple, B.

Type: Technical Note

Published: 2004, Volume 54, Issue 2, Pages 150-157

Abstract: Previous articles have described a process for the elimination of background from fingerprint and other images by subtracting the background. Two options, filtration and erasure, have been discussed. Channel subtraction, either in RGB (Red, Green, Blue) or HSI (Hue, Saturation, Intensity) mode, can also be effected with variable results. There exists a fourth option: substituting another item of the same type in exact register to obtain a substitute background image for purposes of the subtraction.

Casting Tires with Expandable Polyurethane Foam and Other Materials

Author(s): Wilson, J. D.

Type: Technical Note

Published: 2004, Volume 54, Issue 2, Pages 158-169

Abstract: The use of expandable polyurethane foams and other casting materials to cast a tire is presented. In some cases, tire impression evidence left at a crime scene may be matched to a particular tire. At times, it may be difficult to seize or ship a tire to a lab for comparisons to a tire print. A three-dimensional cast of a tire can offer more details than an ink roll of a tire. In this study, polyurethane foams provided a detailed, durable, inexpensive, and lightweight cast of a tire. The foam casting method is more practical than other three-dimensional casting materials.

Integrating DNA Collection into the Latent Print Section

Author(s): Amick, J.; Bivins, D.; Cathart, K.; Hammer, L.; Pippin, T.

Type: Technical Note

Published: 2004, Volume 54, Issue 2, Pages 170-177

Abstract: DNA laws across the nation are changing and, as a result, offenders who have been convicted of less serious crimes are now required to give DNA samples. Because these new laws are in effect, the possibility of linking and solving crimes is increased with the aid of the Combined DNA Index System (CODIS). The purpose of this paper is to provide information about potential DNA sources on common evidence items that are encountered by latent examiners and to explore the ways that limited DNA collection might be incorporated into a latent print section. Case examples are provided to illustrate the benefits of this process.

Research on Transferring a Fingerprint to a Ninhydrin-Treated Document

Author(s): Beaudoin, A.

Type: Technical Note

Published: 2004, Volume 54, Issue 2, Pages 178-184

Abstract: This paper explores the possiblity to transfer, with the help of an adhesive lifter or other device, someone's prints onto a document that had been previously treated with ninhydrin. It is evident from this study that the secondary transfer of prints (i.e., transferring the print using a lifter or pressing a smooth surface) to ninhydrin-treated paper is very unlikely.

Locator System Versus WinID3 Versus CAPMI4: Identifying Victims from Dental Remains in a Large Disaster

Author(s): Lewis, C.; Leventhal, L.

Type: Article

Published: 2004, Volume 54, Issue 2, Pages 185-202

Abstract: Actual patient charts were used to simulate 300 ante-mortem files (victims) and 105 postmortem files (dental fragments) for a fictional disaster. All 105 simulated fragments came from 100 of the simulated victims. We compared three methods of matching victims and fragments: the Locator System (LS), WinID3 software program (Win), and CAPMI4 software program (Cap). Win and Cap were designed to help identify disaster victims. LS was not a computer program. It required dental professionals manually to sort antemortem files into six categories of dental characteristics and to compare a postmortem file of a given category to antemortem files in the same category. Twenty-four dental professionals were randomly assigned to the three methods with eight per team. The teams worked five hours. We measured the number of correct victim identifications and the number of correct matches. Overall, LS performed best, with Win close behind and Cap a distant third. All methods performed worse when fragments had few or no restorations – but LS did best. LS and Win findings were similar to a previous simulation study using only 100 victims.

Visualization of Latent Prints on Adhesive Surfaces

Author(s): Ong, S. K.; Seah, L. K.; Murukeshan, V. M.; Ong, L. S.

Type: Article

Published: 2004, Volume 54, Issue 2, Pages 203-215

Abstract: This study investigates the use of one fluorescence and two nonfluorescence enhancements for the visualization of latent prints on adhesive surfaces. In terms of the fluorescence detection, a systematic evaluation on the fluorescence emission from the enhanced latent print is carried out both quantitatively and qualitatively. The preferred excitation wavelength and the appropriate optical filtering required to enhance the visibility of the desired fingerprint evidence are identified. Subsequently, the effectiveness of these enhancements on adhesive surfaces is compared and discussed.

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2004, Volume 54, Issue 2, Page 270

Abstract: This is an unusual and difficult pattern, because it has characteristics of all three types of patterns: the whorl, arch, and loop. The first preference for this pattern type would be a loop over a tented arch or

ACCIDENTAL WHORL with "meet" tracing. Heavier inking may result in more solid ridge flow, creating a loop with sufficient recurve at "A". This would then be interpreted as a DOUBLE-LOOP WHORL with meet tracing.

The Wheel

Author(s): Benningfield, D.

Type: Commentary

Published: 2004, Volume 54, Issue 1, Pages 1-3

Restoration of Vehicle Identification Numbers

Author(s): Kuppuswamy, R.; Senthilkumar, M.

Type: Case Report

Published: 2004, Volume 54, Issue 1, Pages 13-21

Abstract: If a stolen and renumbered vehicle is involved in a crime (e.g., murder, sexual assault, robbery, theft, etc.), then it becomes necessary to restore the original numbers to prove the identity of the motor vehicle. We found that the careful use of the procedure described in this article has been very successful in many other instances in the restoration of erased numbers in motor vehicles. Further, we noted that Fry's reagent is perhaps the best solution for steel surfaces, as reported in other studies.

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2004, Volume 54, Issue 1, Page 130

Abstract: This is an interesting and complex pattern. Initial analysis shows two separate loop formations in juxtaposition upon the same side of a common delta. Closer observation reveals what appears to be a scar just above the core of the bottom loop.

The Effect of Common Fingerprint Detection Techniques on the DNA Typing of Fingerprints Deposited on Different Surfaces

Author(s): Raymond, J. J.; Roux, C.; Du Pasquier, E.; Sutton, J.; Lennard, C.

Type: Article

Published: 2004, Volume 54, Issue 1, Pages 22-44

Abstract: DNA and fingerprints are two of the most important forms of evidence in terms of their ability to individualize persons. This study investigated the effect of common fingerprint detection techniques on the recovery of DNA from fingerprints. It was found that the recovery of DNA is possible after fingerprint development using certain techniques, and that the recovery is more dependent on the surface type, rather than the enhancement technique used. Fingerprints placed on plastic bags, glass microscope slides, and adhesive tape returned DNA profiles before and after treatment, which consisted of white light, UV, dactyloscopic powders, Stickyside Powder, and cyanoacrylate plus rhodamine 6G stain or VMD treatment. The profiles that were obtained from these surfaces were often found to contain contamination peaks, and at this stage, trace DNA analysis of this type may be more useful as an intelligence tool, rather than being relied upon in court for

identification purposes. No DNA profiles were obtained from treated or untreated prints on paper and aluminum foil substrates.

Fingerprint Powder Formulations Based on Organic, Fluorescent Dyes

Author(s): Sodhi, G. S.; Kaur, J.; Garg, R. K.

Type: Technical Note

Published: 2004, Volume 54, Issue 1, Pages 4-8

Abstract: Two novel fingerprint dusting compositions based on fluorescent, organic dyes (phloxine B and fluorescene) have been prepared. The proportion of the dye in each formulation is 1%. The remainder of each formulation is an adhesive mixture of meshed aluminum, boric acid, talc, and barium carbonate. The powders give sharp, clear prints on a wide range of absorbent and nonabsorbent surfaces, including multicolored ones. The fluorescent natures of phloxine B and fluorescene assist in developing weak prints.

ACE+V: A Model

Author(s): Vanderkolk, J. R.

Type: Article

Published: 2004, Volume 54, Issue 1, Pages 45-52

Abstract: Perceiving detail in an examination of physical evidence is the function of a forensic scientist. An explanation of that methodology is "A recurring application of Analysis, Comparison, Evaluation and Verification (ACE-V)".

Thin-Layer Chromatography of Photocopy Toners

Author(s): Thakur, V.; Jasuja, O. P.; Singla, A. K.

Type: Article

Published: 2004, Volume 54, Issue 1, Pages 53-63

Abstract: Samples of photocopy toners were analyzed with the help of thin-layer chromatography. Dye components and resin components of photocopy toners were analyzed by eluting the samples on the same plate but in two different solvent systems. It was found that the solvent system that could elute the dye components was not able to elute the resin components. The results indicate that batch variations, if pres-ent, in two samples of the same brand can be determined through the application of thin-layer chromatography.

A Statistical Analysis of the ACE-V Methodology — Analysis Stage

Author(s): Langenburg, G. M.

Type: Article

Published: 2004, Volume 54, Issue 1, Pages 64-79

Abstract: In July 2002, 24 latent print examiners and trainees in Minnesota participated in a pilot study. Each participant recorded the number of minutiae observed in two inked prints and ten latent prints possessing a varied quantity and quality of ridge characteristics. In addition, the participants received an enlargement (15 X) of one of the ten latent prints. They recorded on the enlargement the minutiae that were observed. Using standard statistical measurements, the results were compared against a control group of individuals with no train-ing or

experience in latent print comparisons. The participants also completed a 30-question survey. The survey asked questions regarding physical traits, education, experience, training, and miscellaneous factors.

The results of this pilot study demonstrated that there was a significant difference between the mean number of minutiae reported for the examiner group versus the mean number of minutiae reported for the control group. The results of this pilot study were used to plan a large-scale national study of examiners in the United States, which commenced in the spring of 2003. This study is intended to be the first in a long series of studies that will examine various aspects of the ACE-V methodology.

A Radiologic Atlas of Abuse, Torture, Terrorism, and Inflicted Trauma by B. G. Brogdon

Author(s): Bonnel, H. J.

Type: Book Review

Published: 2004, Volume 54, Issue 1, Page 80

Friction Ridge Detail Preserved on a Tool

Author(s): Horsman, A.

Type: Case Report

Published: 2004, Volume 54, Issue 1, Pages 9-12

Abstract: In this case, high voltage electrocution caused an unusually detailed preservation of friction ridge detail upon a tool. Though the victim's identity was known in this case, such a discovery could become key to determining the identity of an unknown victim.

Public Funding of a Regional Crime Lab: Los Angeles Police Department and Los Angeles Sheriff's Department Work Together to Build Regional Crime Lab

Author(s): Cavanaugh, J.

Type: Commentary

Published: 2003, Volume 53, Issue 6, Pages 633-638

Demonstrative Aid for Bloodstain Pattern Examiners

Author(s): Moore, C. C.

Type: Technical Note

Published: 2003, Volume 53, Issue 6, Pages 639-646

Abstract: In bloodstain pattern analysis (BPA), the ideal demonstrative aid for court would not only hold true to the theory offered by the testimony of the witness presenting the visual aid, but it would also pass the test of acceptability and admissibility before the court. The author believes a labeled model, built by the bloodstain pattern analyst, can enhance the analyst's testimony, because it allows the jury to not only hear theory, but also to see visual prompters that transform an abstract thought into a tangible concept.

Shoe and Tire Impressions in Snow: Photography and Casting

Author(s): Hammer, L.; Wolfe, J.

Type: Technical Note

Published: 2003, Volume 53, Issue 6, Pages 647-655

Abstract: Shoe and tire impressions in snow present a unique set of collection and preservation challenges. Becoming familiar with and practicing techniques for photographing, coating, and casting snow impressions will enable the successful recovery of this type of evidence.

A Primer on the Tools of Crime Scene Analysis

Author(s): Garrett, R. J.

Type: Technical Note

Published: 2003, Volume 53, Issue 6, Pages 656-665

Abstract: Reconstruction and analysis are logical extensions of the crime scene investigator's craft. Those who concentrate solely on reconstruction analysis can only do so while relying on the efforts of the crime scene investigator. Through experience and training, a crime scene investigator can develop an eye for what is needed in order to interpret the meaning of what he or she collected and photographed.

Mold Making of the Skull

Author(s): Nusse, G. L.

Type: Technical Note

Published: 2003, Volume 53, Issue 6, Pages 666-689

Abstract: There are times when making a mold of a skull is necessary and valuable. Creating a facial reconstruction on a casting leaves the real skull available for study and investigation. Having a casting of a skull can also be helpful for educational purposes, and it may be used in a courtroom exhibit.

The Skills of Crime Scene Investigation as Part of a BSc (Hons) Degree

Author(s): Pepper, I. K.

Type: Technical Note

Published: 2003, Volume 53, Issue 6, Pages 690-695

Digital Evidence Subcommittee and Panel Discussion

Author(s): Marr, K.

Type: Technical Note

Published: 2003, Volume 53, Issue 6, Pages 696-699

Abstract: The first meeting of the IAI Digital Evidence Subcommittee and the associated panel discussion provided participants with an opportunity to discuss current issues regarding digital evidence and to plan future activities of the newly-formed Digital Evidence Subcommittee. The panel discussion summarized the status and current issues of the Scientific Working Group on Digital Evidence (SWGDE). Digital evidence activities of the International Organization on Computer Evidence (IOCE) and American Society of Crime Laboratories Directors / Laboratory Accreditation Board (ASCLD/LAB) were discussed.

Proportional Analysis: The Science of Comparison

Author(s): Hare, K.

Type: Article

Published: 2003, Volume 53, Issue 6, Pages 700-706

Abstract: Proportional analysis is a systematic approach to any comparative analysis and can be used to determine individuality and recognition. This methodology can be applied to all of the forensic comparative sciences and is not limited to the analysis of friction ridge formations. Proportional analysis is a means of explaining scientifically how a comparison is effected. The science of identification and individualization is a visual process which utilizes observation and measurement to assign value to spatial relationships that exist between any set of features present in two patterns being compared. These spatial relationships and the interlocking spatial clusters that are made when viewed together allow an examiner to systematically apply proportional analysis to obtain recognition and individualization in a manner that allows for repeatability and reliability from one examiner to another during the verification or peer review process. Any scientific comparison is a verifiable reconstruction of visual information with sufficient measurable detail in sequential alignment that results in a conclusion of individuality or an exclusion of individuality. This paper will be limited to the application of proportional analysis for comparing fingerprints or any ridged impression. [See letter to the editor by S. McKasson in JFI 54 (3).]

Adobe Photoshop for Demonstrating Latent Print Uniqueness

Author(s): Wertheim, K.

Type: Article

Published: 2003, Volume 53, Issue 6, Pages 707-721

Abstract: Charted enlargements serve to demonstrate how identifications are effected and also to demonstrate to the jury a case identification. The value of utilizing technology to accomplish this more quickly and efficiently has been realized with the widespread use of Microsoft PowerPoint. However, tools within PowerPoint were not designed with image processing in mind.Adobe Photoshop, on the other hand, has an extensive array of tools that can be used in combination to achieve powerful demonstrations of latent print uniqueness.

Using Virtual Heads for Person Identification: An Empirical Study Comparing Photographs to Photogrammetrically-Generated Models

Author(s): Bailenson, J. N.; Beall, A. C.; Blascovich, J.

Type: Article

Published: 2003, Volume 53, Issue 6, Pages 722-728

Abstract: The purpose of this study was to examine the effectiveness of virtual heads (i.e., three-dimensional models of human heads and faces). Our goal was to test these virtual head models as functional substitutes for photographs of humans as well as for live humans during eyewitness lineups and other processes relating to person identification. We tested the effectiveness of virtual heads by taking photographs of people and then using 3DMeNow software by bioVirtual to build three-dimensional models that resembled the photographs. We tested to see how easily experimental subjects would recognize images of the three-dimensional models (compared to photographs) after being trained on short video clips of people. The goal of this study was to examine subjects' recognition of virtual faces and to compare this performance to recognition of real faces. In the following sections, we discuss relevant previous research, present the methods and results of the current study, and finally point to directions for future work.

Crime Scene DNA Collection:Research and Practical Considerations

Author(s): Bellefeuille, J.; Bowen, K.; Dixon, P.; Hanniman, J.; Hillier, E.; Lama, D.; Wilkinson, D.; Yamashita, B.

Type: Article

Published: 2003, Volume 53, Issue 6, Pages 729-734

Advances in the Forensic Analysis and Dating of Writing Ink by R. L. Brunelle; K. R. Crawford.

Author(s): LaPorte, G. M.

Type: Book Review

Published: 2003, Volume 53, Issue 6, Pages 735-738

Abstract: [See letter to the editor by R. Brunelle and K. R. Crawford in JFI 54 (2).]

The Forensic Analysis of Knots and Ligatures by Robert Chisnall

Author(s): Zercie, K.

Type: Book Review

Published: 2003, Volume 53, Issue 6, Pages 739-740

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2003, Volume 53, Issue 6, Page 818

Abstract: This palm would make a highly unusual recorded palm print. This is the palm of an Iranian, who explained during his arrest that he had had a skin graft and the doctors had used f lesh from his thigh to replace the damaged tissue on his finger.

Forensic Science, or Business?The Use of Production Standards

Author(s): Stimac, J. T.

Type: Commentary

Published: 2003, Volume 53, Issue 5, Pages 525-530

Abstract: The various disciplines of forensics are not businesses. Each is a science. Yet, just as criminal and civil laws entwine with each discipline, the progressive use of production standards within our laboratories must be recognized. Administrators and management are aware of their benefits, but increasingly, they must also be responsive and avoid the negative implications these benchmarks can possess. To lose sight of forensic scientific necessities in lieu of an increased dependence on business-style benchmarks is not beneficial to the quality assurance responsibilities of the involved analysts, their laboratories, the agencies they service, and perhaps the most important entity, the civil liberties of victim and suspect.

Unusual Latent Print Examinations

Author(s): Reneau, R. D.

Type: Case Report

Published: 2003, Volume 53, Issue 5, Pages 531-537

Abstract: Latent print examiners encounter interesting or unusual prints on a daily basis. In many agencies, latent prints of particular interest are exchanged with colleagues for input during analysis. This sharing of information is an invaluable tool that promotes professional growth, and it is encouraged in the author's laboratory. Two latent prints from different cases were encountered recently that fit the category of extremely interesting, if not highly unusual. [See letter to the editor by M. Leadbetter in JFI 54 (2).]

Recovery of Developed Latent Printsfrom the Inside of a Compound Curved Surface

Author(s): Czarnecki, E. R.

Type: Technical Note

Published: 2003, Volume 53, Issue 5, Pages 538-544

Abstract: The recovery of a developed latent print from the inside of a compound curved surface can be accomplished with flexible casting materials.

Forensic Acumen Reveals the Identity of a Car

Author(s): Thirunavukkarasu, G.; Damodaran, C.

Type: Case Report

Published: 2003, Volume 53, Issue 5, Pages 545-549

Abstract: A car involved in an investigation was found to have the license number of a motorcycle. An attempt to identify the car through its chassis and engine numbers did not yield any result; the manufacturer reported that, according to their records, a car with those numbers did not exist. Suspicion about the car led to a forensic examination, which ultimately not only proved that the manufacturer's information furnished originally was wrong, but also helped to reveal the true identity of the car.

A Fingerprint Powder Formulation Based on Rhodamine B Dye

Author(s): Sodhi, G. S.; Kaur, J.; Garg, R. K.; Kobilinsky, L.

Type: Technical Note

Published: 2003, Volume 53, Issue 5, Pages 551-555

Abstract: A novel fingerprint dusting powder based on rhodamine B has been prepared. This fluorescent, organic dye consists of 1% of the formulation with the remaining components consisting of an adhesive mixture of boric acid, talc, and barium carbonate. Use of this powder provides sharp and clear prints on a wide range of absorbent and nonabsorbent surfaces, including those that are multicolored. The fluorescent nature of rhodamine B assists in developing weak prints and can be used in conjunction with an intense light source, such as the Crimescope or Lumiscope, to reveal high-quality ridge patterns.

Latent Print Processing of Human Bones

Author(s): Steadman, D. W.; Andersen, S. A.

Type: Article

Published: 2003, Volume 53, Issue 5, Pages 556-565

Abstract: Dried human bones can provide a valuable source of latent print evidence that should not be overlooked. Processing of both unpreserved and chemically preserved human bones demonstrated that black magnetic powder yielded the best latent print developments of the five processes tested.

The Use of the Hexagon OBTI Test for Detection of Human Blood at Crime Scenes and on Items of EvidencePart I: Validation Studies and Implementation

Author(s): Hermon, D.; Shpitzen, M.; Oz, C.; Blattsein, B.; Azoury, M.; Gafny, R.

Type: Article

Published: 2003, Volume 53, Issue 5, Pages 566-575

Abstract: The Hexagon OBTI kit was adapted for human blood detection at crime scenes as well as on items of evidence. The detection limit was increased while its specificity was kept unchanged. The implementation of the kit by the Israel National Police was accomplished with the introduction of a newly designed "blood testing" carrying case. The case contains all the items and reagents required for the Kastle-Meyer presumptive blood identification test and the Hexagon OBTI test.

The Use of the Hexagon OBTI Test for Detection of Human Blood at Crime Scenes and on Items of Evidence Part II: Use on Amido Black Treated Surfaces

Author(s): Hermon, D.; Azoury, M.

Type: Article

Published: 2003, Volume 53, Issue 5, Page 576

Abstract: Bloody exhibits, which are frequently encountered at crime scenes, commonly undergo latent fingerprint and biological examinations. These exhibits are routinely processed for fingerprint detection by using amido black, which is a protein dye. In this study, the OBTI kit was evaluated on amido black treated blood stains and fingerprints, and its sensitivity was compared to Kastle-Meyer (KM) testing. It was found that OBTI is a powerful confirmatory test for human blood that can be employed after amido black treatment. Its sensitivity equals or surpasses the KM test. The time interval between the amido black staining and the OBTI test is also critical.

The Biology of Skin by R. K. Freinkel; d. Woodley

Author(s): Maceo, A. V.

Type: Book Report

Published: 2003, Volume 53, Issue 5, Pages 585-595

Abstract: This report summarizes information from the book that lends itself to a greater understanding of the concept of permanence (of all the levels of ridge detail). The information is not presented in the order the book presents the information. Rather, the relevant information from different chapters of the book is correlated in a manner that hopes to illustrate its usefulness to the latent print community. The information from The Biology of Skin is supplemented with explanations from Principles of Anatomy and Physiology, 7th ed., edited by Gerard J. Tortora and Sandra Grabowski, published by HarperCollins College Publishers, New York, 1993. The supplemented explanations include the discussion under the section entitled "Homeostasis" and the subsection "What is a Cell Cycle?" under the section entitled "A Closer Look at Proliferation".

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2003, Volume 53, Issue 5, Pages 628-629

Abstract: Several contributors have submitted these interesting fingerprints with "CUSPAL" patterns, a condition in which the ridges f low upward. The ridges do not recurve to form loops or whorls and they do not enter from one side and f low out the other to form a plain or tented arch. The ridges do not group in any recognizable pattern. A cuspal pattern would be classified as a TENTED ARCH, since one or more ridges at the center form an upthrust, which is an ending ridge of any length rising at a sufficient degree from the horizontal plane (i.e., 45 degrees or more). Since the cuspal pattern actually conforms to none of the other definitions, it could be argued that a reference to an ACCIDENTAL is needed. Interestingly, the four index fingerprints are from female identical twins. The remaining fingerprints are of the right and left little fingers of a different female.

IAFIS Fingerprint Search Solves 45-Year-Old Double Police Officer Murder

Author(s): Leo, W. F.; Tillmann, S.

Type: Case Report

Published: 2003, Volume 53, Issue 4, Pages 397-403

Abstract: This double murder was solved through the application of emerging technology to fingerprints developed at the scene almost half a century earlier. To our knowledge, this is the oldest case solved through the use of an AFIS system.

Application of Amido Black Mixture for the Development of Blood-based Fingerprints on Human Skin

Author(s): Lawley, R.

Type: Case Report

Published: 2003, Volume 53, Issue 4, Pages 404-408

Abstract: Amido black is a chemical blood reagent often used by forensic specialists in the development of blood-based latent prints on porous and nonporous surfaces. The effectiveness of this chemical was recently tested on the dermal surface of a homicide victim. The results were impressive, and further forensic study in this area appears to be warranted.

Identification of a Bare Footprint on a Hamburger Bun

Author(s): Czarnecki, E. R.

Type: Case Report

Published: 2003, Volume 53, Issue 4, Pages 409-413

Abstract: A plastic impression (three-dimensional) of the sole of a bare foot on a hamburger bun that was recovered at the scene of a brutal homicide is photographed, compared, and individualized to a suspect. The process to effect the individualization is related in terms of distinct steps following the methodology described in the acronym "ACE-V" (Analysis, Comparison, Evaluation, and Verification).

Compressed Air to Aid Investigators in the Laboratory and Field

Author(s): Knaap, W.; Davie, R.; Doyle, M.; Benton, A.

Type: Technical Note

Published: 2003, Volume 53, Issue 4, Pages 414-420

Abstract: Tests were conducted to determine the viability of using air powered spray guns to assist with the application of latent fingerprint dyes, chemical solutions, and chemical blood reagents. In addition to lab applications, air operated tools were examined for use in crime scene processing and exhibit seizure.

Glowing Numbers

Author(s): Natarajan, N.; Hemalatha, M.

Type: Technical Note

Published: 2003, Volume 53, Issue 4, Pages 421-423

Abstract: The restoration of identification numbers (e.g., vehicles, firearms) that have been tampered with is accomplished by chemical etching. The recording of these numbers photographically before and after etching is an important aspect of the examination. The conventional method of lifting fingerprints using fingerprint powder and cellophane tape is now reported for an unconventional application, namely to induce fluorescent "glow" for the purpose of photographing the restored numbers.

The Basics of Analog Videotape Evidence

Author(s): Brunetti, J.

Type: Article

Published: 2003, Volume 53, Issue 4, Pages 424-434

Abstract: Videotapes from closed circuit television (CCTV) surveillance cameras can play a crucial role in identifying suspects. Unfortunately, some investigators, and even some evidence technicians, are unaware of how to properly collect and preserve videotape evidence. This paper addresses the basics of analog videotape evidence and its proper handling.

Stringing a Crime Scene to Determine Trajectories

Author(s): Parkinson, G. A.

Type: Article

Published: 2003, Volume 53, Issue 4, Pages 435-443

Abstract: The use of string in reconstructing crime scenes for certain types of evidence is a relatively simple, inexpensive, and accurate method of demonstrating trajectory. Caution is emphasized that the determination is not exact but is more of a general, or relative, position fixing method. The use of string is still valid and remains as only one of several methods of determining the point of convergence or origin. When feasible for use in court, it remains an excellent demonstrative tool.

An Evaluation of Multimetal Deposition II

Author(s): Jones, N.; Lennard, C.; Stoilovic, M.; Roux, C.

Type: Article

Published: 2003, Volume 53, Issue 4, Pages 444-488

Abstract: Multimetal deposition (MMD) has not found routine application because of its complexity and inconsistent results. Recent research that sought to overcome these problems resulted in the development of a new formulation known as MMDII. MMDII utilizes smaller colloidal gold particles (14 nm as compared to 30 nm) and an alternative physical developer (silver acetate/hydroquinone rather than silver nitrate/iron(II)/iron(III)). Several MMD formulations were evaluated in this study, and MMDII proved to be the superior formulation, giving better overall print detail. On nonporous surfaces, MMDII may offer further print development than that achieved with cyanoacrylate fuming (CA) and luminescent staining, but vacuum metal deposition (VMD) always gave superior results to MMD. MMDII and VMD were compared to standard techniques on a number of semiporous surfaces, including expanded polystyrene, waxed paper, latex gloves, and nitrile gloves. MMDII proved to be the technique of choice on these surfaces. The ability of MMDII to react with print residue within and on the surface is believed to be important to its success.

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2003, Volume 53, Issue 4, Page 522

Abstract: This fingerprint is Questionable, Unusual, and Interesting! The exceptionally wide fingerprint pattern (Figure A), from the right ring finger, contains a recurving ridge on the extreme left and right sides. It is classified as a an Accidental Whorl, inner tracing. In the event the pattern is not sufficiently rolled to include either or both of the outer recurves, it is referenced to a double loop whorl, inner tracing; to a double loop whorl, outer tracing; and to a 7-8 count plain loop (as it appears in the plain impression Figure B).

Thermal Paper: Latent Friction Ridge Development via 1,2-Indanedione

Author(s): Stimac, J. T.

Type: Technical Note

Published: 2003, Volume 53, Issue 3, Pages 265-271

Abstract: Thermal paper technology has become one of the most popular means of recording business and personal interaction. Whether in the form of an ATM printout, or a point-of-sale receipt, the increased application of this method of documentation will also increase the responsibility of a forensic laboratory to effectively analyze such items. To assist in this accountability, it is recommended that the practical use of 1,2-Indanedione within a forensic laboratory, both on thermal paper and on other traditional porous items, be utilized pending independent validation, supplemented by thorough research of available literature.

Locator System Versus WinID2: Identifying Disaster Victims from Dental Remains

Author(s): Lewis, C.; Leventhal, L.

Type: Article

Published: 2003, Volume 53, Issue 3, Pages 272-295

Abstract: One hundred simulated antemortem and 105 simulated postmortem records were used to compare three methods of identifying disaster victims from dental remains. Method 1 (LS) was the Locator System, which required sorting antemortem records into six categories of dental conditions and comparing postmortem records to the relevant category for identification. LS was used without a computer software program. Method 2 (Win) was the WinID2, version 2.3.7, software program, which was designed to help identify disaster victims. Method 3 (Win/S) was the same WinID2 software program except that radiographs were scanned into the program so that they could be manipulated and viewed on the computer screen. Five dental forensic teams were assigned to

each method, with two persons per team. The teams worked six hours. Overall, LS performed better than Win by a small margin and Win/S was a distant third. All methods found it harder to make identifications when fragments lacked dental restorations.

Exposure Monitoring of Fingerprint Powders

Author(s): Elad-Levin, M.; Azoury, M.; Yaffe, Y.

Type: Article

Published: 2003, Volume 53, Issue 3, Pages 297-303

Abstract: Inhalation exposure of crime scene technicians to black magnetic, silver gray, and black powders used for fingerprint development was monitored using standard environmental evaluation criteria. Air samples were collected while crime scene technicians developed latent fingerprints at simulated crime scenes. Air samples were analyzed for aluminum, carbon black, and iron. The amount of each element found was calculated for a normal workday and compared to the known threshold limit values. The values recorded in this preliminary survey were well below the occupational exposure standards for the components evaluated.

An Improved Silver Physical Developer

Author(s): Burow, D.

Type: Article

Published: 2003, Volume 53, Issue 3, Pages 304-314

Abstract: The silver physical developer is the usual reagent that follows DFO or ninhydrin in the processing of latent prints on porous surfaces. It visualizes the water insoluble components of the latent print residue. Such components include fats and oils (e.g., lipids). This work presents a silver physical developer formulation that develops better quality prints and is less expensive than the traditional silver physical developer.

Form-blindness

Author(s): Byrd, J. S.; Bertram, D.

Type: Article

Published: 2003, Volume 53, Issue 3, Pages 315-341

Abstract: Form-blindness is a combined physical and mental fault, an imperfection in the brain which causes the inability to interpret and correctly store what is actually focused on the human retina. A similar scenario in the realm of sound would be not hearing a specific pitch until it reaches a certain volume. The same is true of vision where minute dissimilarities in size, shape, or form cannot be seen until the differences are increased to a level within the observer's comprehension. The failure to recognize the real differences and fundamental similarities and to properly understand them and interpret them causes problems in latent print comparison training. This study will provide insight to the connection between an individual's formblindness test results and the ability to complete a latent print training course.

Hard Evidence Case Studies in Forensic Anthropology by D. Wolfe Steadman

Author(s): Czarnecki, E. R.

Type: Book Review

Published: 2003, Volume 53, Issue 3, Pages 342-343

Handbook of Computer Crime Investigation — Forensic Tools and Technology by E. Casey

Author(s): Stroz, E. M.

Type: Book Review

Published: 2003, Volume 53, Issue 3, Pages 344-352

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2003, Volume 53, Issue 3, Page 394

Abstract: This pattern, from a right finger, is classified as a 1 to 2 count RADIAL LOOP. In addition to being referenced to a tented arch, it is referenced to a cental pocket loop whorl (obstruction type - "in lieu of a recurve in front of the delta in the inner pattern area, an obstruction at right angles to the line of f low will suffice", The Science of Fingerprints, FBI.)

Development of Bloody Prints on Dark Surfaces with Titanium Dioxide and Methanol

Author(s): Bergeron, J.

Type: Technical Note

Published: 2003, Volume 53, Issue 2, Pages 149-161

Abstract: Through the use of titanium dioxide and methanol, a simple, safe, and effective chemical solution has been found to treat patent blood prints on dark surfaces. The titanium dioxide and methanol solution enhanced the blood prints on dark surfaces, resulting in white ridge detail. It also developed ridge detail not detected in the original visual exam.

An Evaluation of Magnetic and Nonmagnetic Fingerprint Powders on Ceramic Materials

Author(s): Bailey, J. A.

Type: Technical Note

Published: 2005, Volume 53, Issue 2, Pages 162-168

Abstract: Crime scene investigators have used magnetic fingerprint powder and nonmagnetic fingerprint powder to process ceramic surfaces for latent prints since the development of the magna brush. Even though the magnetic powder causes more background discoloration than the nonmagnetic powder, the magnetic powder produces superior latent prints.

The Significance of Situational Sequencing Tests in Establishing the Participation of Two Persons in a Murder Case and the Hiding of the Corpse

Author(s): Jaworski, R.

Type: Case Report

Published: 2003, Volume 53, Issue 2, Pages 169-184

Abstract: In this report, a 1996 investigation that utilized SST is reviewed and presented to further demonstrate the value of SST as a complement to other polygraph examination techniques.

Thermal & Carbonless Papers: A Fundamental Understanding for Latent Friction Ridge Development

Author(s): Stimac, J. T.

Type: Article

Published: 2003, Volume 53, Issue 2, Pages 185-197

Abstract: Both thermal and carbonless specialty papers pose a challenge to latent fingerprint examiners. A fundamental understanding of the chemical and physical properties of both forms of paper is required to assist the examiner in determining what possible method of chemical processing will not damage these specialty papers, while subsequently allowing for the development of quality latent friction ridge detail on their surface.

Reduction of Background Features in Images of Fingerprints Using Combinations of Images Acquired Under Different Lighting Conditions

Author(s): Comber, B. A.

Type: Article

Published: 2003, Volume 53, Issue 2, Pages 198-208

Abstract: Images of a subject can be acquired under different lighting conditions that cause the relationships of the brightness or darkness of the various features to vary from one image to another. We can take advantage of these variations by combining the images in different proportions in an additive or subtractive manner, allowing a feature, such as background printing or pattern, that is visible in both images to be significantly reduced. This technique is useful in reducing the effect of features that constitute interference when trying to examine other features of interest within an image.

The Significance of Using Level 1 Detail in Latent Print Examinations

Author(s): Saviano, J.

Type: Article

Published: 2003, Volume 53, Issue 2, Pages 209-218

Abstract: This article examines the use of fingerprint patterns and the general f low of ridges in latent impressions as they pertain to the inclusion or exclusion of possible donors. Advantages of this level of examination are discussed, as well as certain hazards of which the latent examiner must be aware.

Forensic DNA Typing by J.M. Butler

Author(s): Word, C. J.

Type: Book Review

Published: 2003, Volume 53, Issue 2, Pages 219-223

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2003, Volume 53, Issue 2, Page 262

Abstract: This is an interesting pattern. Since the left side of the recurve appears to be spoiled, this pattern would be classified as a TENTED ARCH. Because the appendage on the left side of the recurve could appear to f low off smoothly, a reference to a 1-2 count RIGHT SLANT LOOP is necessary.

Are You Dead? Take This Test and Find Out

Author(s): Nielson, J. P.

Type: Commentary

Published: 2003, Volume 53, Issue 1, Pages 1-7

Juvenile Sexual Homicide by W.C. Myers

Author(s): Hazelwood, R. R.

Type: Book Review

Published: 2003, Volume 53, Issue 1, Pages 100-101

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2003, Volume 53, Issue 1, Pages 144-146

Abstract: The accidental whorl fingerprint pattern is defined in the FBI book, The Science of Fingerprints, as: a pattern consisting of a combination of two different types of pattern, with the exception of the plain arch, with two or more deltas; or a pattern which possesses some of the requirements for two or more different types; or a pattern which conforms to none of the definitions.

Consensus Obtained in a Delphi Study of Shoe Wear Pattern Experiences Amongst Podiatrists

Author(s): Vernon, W.; Parry, A.; Potter, M.

Type: Article

Published: 2003, Volume 53, Issue 1, Pages 15-41

Abstract: Shoe wear patterns may have value in forensic identification. Podiatrists are known to use shoe wear patterns in clinical diagnosis and therefore claim knowledge in this area. A panel of podiatrists participated in a multiple-round Delphi study to establish their shoe wear pattern experiences. The final round and the conclusions of this study are reported here. The questionnaire used in this round contained two sections, both showing statistical feedback of the previous round results. In section one, respondents were asked to name the pathology which they would associate with an attached pattern. In section two, respondents were asked to show which pattern components they would associate with a named pathology. Respondents were also asked to show which associations they would disagree with in addition to those which they supported. Responses, which were

fewer than in previous rounds, suggested that the Delphi had reached a natural conclusion by showing that pattern relationships had been accepted, rejected, or had reached a static level of agreement that had not changed significantly from the previous round.

Fingerprint Age Determination: Is There Any Hope?

Author(s): Wertheim, K.

Type: Article

Published: 2003, Volume 53, Issue 1, Pages 42-49

Abstract: Fingerprint age determination has traditionally been approached in three ways: (1) the physical appearance of the latent print, either before or after development, (2) the use of experiments that help to establish the effects of environmental factors over a given period of time, (3) the measurement of chemical changes in the constituents of latent print residue. It is virtually impossible to recreate the exact conditions under which a latent print was created,deposited, and affected by its environment, as required by the first two methods. The third method seems to offer the most promise in the quest for a reliable, universally accepted method of latent print age determination.

The Development of Latent Fingerprints on Polymer Banknotes

Author(s): Jones, N.; Kelly, M.; Stoilovic, M.; Lennard, C.; Roux, C.

Type: Article

Published: 2003, Volume 53, Issue 1, Pages 50-77

Abstract: Polymer banknotes, especially older banknotes and banknotes with aged prints, present challenges for latent print development. A sequence of techniques has been optimized for the development of aged prints on the surface of banknotes. The procedure involves optical examination, cyanoacrylate fuming, vacuum metal deposition treatment, and luminescence staining. It is essential to treat banknotes with cyanoacrylate fuming as soon as they are received so that the print degradation, which occurs quickly on the banknote surface, is minimized. Vacuum metal deposition treatment should also be applied as soon as possible after cyanoacrylate fuming. Treatments other than those outlined in this procedure should be avoided, because they will be detrimental to vacuum metal deposition development.

SWGFAST

Author(s): McRoberts, A. L.

Type: Special Feature

Published: 2003, Volume 53, Issue 1, Pages 79-81

Fingerprint Detection Using Phloxine B Dye

Author(s): Sodhi, G. S.; Kaur, J.

Type: Technical Note

Published: 2003, Volume 53, Issue 1, Pages 8-13

Abstract: Phloxine B dye, along with a phase transfer catalyst, has been used to detect latent fingerprints on a wide range of surfaces, including paper, glass, steel, lamination sheets, polyethene, plastic, and Bakelite.

SWGFAST Modifications and Approvalsof Documents Published for Periodic Review

Author(s): SWGFAST

Type: Special Feature

Published: 2003, Volume 53, Issue 1, Pages 82-87

SWGFAST Guidelines for Latent Print Proficiency Testing Programs

Author(s): SWGFAST

Type: Special Feature

Published: 2003, Volume 53, Issue 1, Pages 88-92

SWGFAST Standards for Conclusions

Author(s): SWGFAST

Type: Special Feature

Published: 2003, Volume 53, Issue 1, Pages 93-95

SWGFAST Submitting Comments

Author(s): SWGFAST

Type: Special Feature

Published: 2003, Volume 53, Issue 1, Page 96

Effective Interviewing & Interrogation Techniques by N.J. Gordan; W.L. Fleisher.

Author(s): Nowicki, S.

Type: Book Review

Published: 2003, Volume 53, Issue 1, Pages 97-99

re: ACE-V: Is It Scientifically Reliable and Accurate? JFI 52 (4)

Author(s): Wertheim, K.

Type: Letters

Published: 2002, Volume 52, Issue 6, Pages 669-676

re: Latent Fingerprint Development on Thermal Paper using Muriatic (Hydrochloric) Acid J. For. Ident. 52 (4)

Author(s): Sears, V. G.

Type: Letters

Published: 2002, Volume 52, Issue 6, Pages 678-679

Footwear Impressions On Fabric

Author(s): Keith, L. V.

Type: Case Report

Published: 2002, Volume 52, Issue 6, Pages 681-685

Abstract: A visual examination revealed two footwear impressions on a couch cushion. Comparisons were conducted using an overlay technique. Although some size distortion was obvious, it could be attributed to the compression of the foam cushion material and the stretching of the fabric. On the basis of a comparison, the right shoe was positively identified. This case may serve as a reminder to crime scene personnel and footwear examiners that footwear impressions that are suitable for comparison and subsequent identification can be found on all types of surfaces.

The Crime Scene Team Website: A New Approach to Team Training and Communication

Author(s): Rose, D.

Type: Technical Note

Published: 2002, Volume 52, Issue 6, Pages 686-690

Abstract: This article focuses on the use of a secure website to facilitate crime scene team communication and training, as well as to provide a storage spot for a wealth of reference material.

The Effect of Small Particle Reagent Employed as a Fingerprint Enhancement Technique on Subsequent STR Typing from Bloodstains

Author(s): Zamir, A.; Oz, C.; Leifer, A.; Geller, B.

Type: Technical Note

Published: 2002, Volume 52, Issue 6, Pages 691-695

Abstract: In cases involving multiple forensic disciplines, the effect of one analysis or processing technique on another analysis is of utmost concern. SPR is not routinely used in the visualization of blood prints, so little research regarding its effect on DNA has been previously conducted. A study was conducted to test whether SPR would be detrimental to the DNA analysis by STR typing. This study showed no deleterious effect on the DNA analysis.

Dusting the Past: Archaeology and Ancient Fingerprints

Author(s): Arp, D.

Type: Article

Published: 2002, Volume 52, Issue 6, Pages 696-703

Abstract: A small group of archaeologists and researchers have begun to look toward ancient fingerprints, preserved in clay or paint, as a source for clues about the past. These efforts have been sporadic and tend to build off one another over a period of years, or even decades. While cataloging a collection of Sumerian cuneiform tablets housed in the University of Nebraska State Museum (UNSM), faint markings on the surface of

one tablet were observed. These marks appeared to be fingerprints, probably those of the Sumerian scribe who wrote the tablet sometime in 2042 B.C.

Sniff Test: Utilization of the Law Enforcement Canine in the Seizure of Paper Currency

Author(s): Mesloh, C.; Henych, M.; Wolf, R.

Type: Article

Published: 2002, Volume 52, Issue 6, Pages 704-724

Abstract: This paper examines the police canine's role in creating a nexus between confiscated currency and drugs. Additionally, this paper examines the roles that the canine handler and evidence collector play in the collection of currency and in maintaining a chain of evidence. Suggestions are presented for the creation of new policy for police agencies that utilize a canine to seize money allegedly involved in the sale of drugs.

A Comprehensive Question List for the Courtroom: Re-evaluating and Revising the Qualifying Question List for Latent Print Testimony

Author(s): Scarborough, S.

Type: Article

Published: 2002, Volume 52, Issue 6, Pages 725-731

Abstract: The court qualifying question list for latent fingerprint testimony can be a living document that should be f lexible, adaptable, and current. The questions and answers should be updated and revised as the experience and knowledge of the latent print examiner increases. The order and selection of the questions, and even the particular wording, can be adapted for the comfortable presentation by each law enforcement professional testifying on latent fingerprint comparisons and identifications.

Polar Coordinate Mapping and Forensic Archaeology within Confined Spaces

Author(s): Hochrein, M. J.

Type: Article

Published: 2002, Volume 52, Issue 6, Pages 733-749

Abstract: Often, human remains or other evidence of crimes is concealed in settings such as wells, pits, cisterns, sinkholes, cave shafts, or other confined subterranean spaces. Once the scene has been identified as having forensically significant evidence, it should be documented. This article presents a technique, suspended polar coordinate mapping, that allows for measurements of evidence within well-like locations.

Optimized Digital Recording of Crime Scene Impressions

Author(s): Dalrymple, B.; Shaw, L.; Woods, K.

Type: Article

Published: 2002, Volume 52, Issue 6, Pages 750-761

Abstract: Four situations were re-created to explore the effectiveness of digital techniques, the application of which depends on recordings taken at the scene in specific order and procedure. Although the images acquired in this study were transferred to a desktop computer for processing, the same results could have been obtained on a laptop computer at the scene. Resulting digitized fingerprints can be forwarded for AFIS search with minimum delay.

Forensic Voice Identification by H. Hollien

Author(s): Koenig, B. E.

Type: Book Review

Published: 2002, Volume 52, Issue 6, Pages 762-766

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2002, Volume 52, Issue 6, Page 852

Abstract: These are very unusual fingerprints in that each whorl has an interesting core: the number "13", a "heart", the letter "G". The last is open to interpretation: is it an "ID", or "10" or maybe "IP"?

The Detection of Bleached Ninhydrin Developed Fingerprints on Paper

Author(s): Lennard, C.; Stoilovic, M.

Type: Case Report

Published: 2002, Volume 52, Issue 5, Pages 537-550

Abstract: A case involving allegations of fingerprint forgery was reinvigorated by claims from a defense fingerprint expert that police had used a bleaching reagent on the questioned document, a stolen bank check. The allegation was that police had cleaned an area on the back of the check using a bleaching solution before depositing a forged latent fingerprint that was subsequently developed with ninhydrin. The bleaching theory became a significant issue at an appeal, lodged in 1995, against convictions in 1983. The Forensic Services laboratory of the Australian Federal Police (AFP) was requested to assist with the determination of whether or not a bleaching reagent had been used on the questioned document. A number of experiments were conducted, with results presented before a Court of Criminal Appeal in November 1998. Based on the examination of available material and the results of bleaching experiments, it was concluded that the chemical bleaching proposed by the defense fingerprint expert did not take place. The Court of Criminal Appeal accepted this view and the appeal was rejected.

Development of Latent Prints with Titanium Dioxide (TiO2)

Author(s): Wade, D. C.

Type: Technical Note

Published: 2002, Volume 52, Issue 5, Pages 551-559

Abstract: The rutile forms of titanium dioxide work very well for developing latent prints on dark surfaces. When used as a substitute for Sticky-side powder, they produce excellent results on black electrical tape and have the added advantage of developing prints on both sides of the tape. They also work well on plastic bags and cellophane. Titanium dioxide powder can be used as a white fingerprint powder or may be mixed with water and Kodak Photo-Flo to make a white small particle reagent.

The Knaap Process: Lifting Two-dimensional Footwear and Fingerprint Impressions Using Dental Stone

Author(s): Knaap, W.; Adach, E.

Type: Technical Note

Published: 2002, Volume 52, Issue 5, Pages 561-571

Abstract: The use of dental stone to obtain three-dimensional footwearimpressions is a common crime scene investigative tool. The purpose of thisresearch was to determine whether the use of dental stone was effective as aforensic tool in the lifting and preservation of two-dimensional fingerprintand footwear impressions from various substrates. A solution to the problemof background contrast is addressed.

Detection of Latent Fingerprints on Newly Developed Substances Using the Vacuum Metal Deposition Method

Author(s): Suzuki, S.; Suzuki, Y.; Ohta, H.

Type: Technical Note

Published: 2002, Volume 52, Issue 5, Pages 573-578

Abstract: Latent fingerprint visualization by the vacuum metal deposition (VMD) method on ferromagnetic-coated and styrofoam surfaces was nvestigated. Using this method, latent fingerprints on these materials were clearly detected. Furthermore, fingerprints were detected on the reverse surface of low-density polyethylene film.

Directionality in Swipe Patterns

Author(s): Gardner, R. M.

Type: Article

Published: 2002, Volume 52, Issue 5, Pages 579-593

Abstract: The method for determining direction of motion for swipe patterns in bloodstain pattern analysis is outlined in numerous references. These methods, however, have not been previously studied in depth for verification and validity, and some of these methods are now under scrutiny within the discipline. This study identifies five physical characteristics that appear in swipe patterns and their orientation in relation to direction of motion. The study suggests that the presence of an irregular demarcation in conjunction with any of the other four characteristics in the opposite boundary is a valid indicator of direction of motion for the pattern.

An Operational Trial of Ozone-Friendly DFO and 1,2-Indanedione Formulations for Latent Fingerprint Detection

Author(s): Merrick, S.; Gardner, S. J.; Sears, V. G.; Hewlett, D. F.

Type: Article

Published: 2002, Volume 52, Issue 5, Pages 595-605

Abstract: A comparative trial was conducted to determine the effectiveness of a 1,2-indanedione formulation and two 1,8-diazafluoren-9-one (DFO) formulations in ozone-friendly solvents for the development of latent fingerprints on porous surfaces. The CFC 113-based DFO formulation currently recommended for use by UK police services was used as a control.

Numerous fingerprints were recorded and used to evaluate the performance of these formulations. The results demonstrated that a DFO formulation in a mixture of HFE7100 and trans-l,2-dichloroethylene is an effective replacement for the CFC 113-based formulation.

Tattoos in Investigations: An Experimental Study in Profiling Cases Based on Investigators' Assessments and Interpretations of Tattoo Iconography

Author(s): Bailey, J. A.

Type: Article

Published: 2002, Volume 52, Issue 5, Pages 607-619

Abstract: Profiling is used in criminal investigations as an investigative tool for unsolved cases, sensational cases, or when there are limited investigative leads. This study was conducted to determine whether an examination of tattoo designs, coupled with other descriptive information about unknown subjects, could provide specific information about the subjects. Police officers were asked to examine and evaluate photographed tattoos from twelve subjects. Quantitative data corresponding to police officer preferences is reported for each of the tattoos examined and evaluated. The benchmark for success was established at any score above fifty percent.

Digital Camera Identification

Author(s): Geradts, Z. J.; Bijhold, J.; Kieft, M.; Kurosawa, K.; Kuroki, K.; Saitoh, N.

Type: Article

Published: 2002, Volume 52, Issue 5, Pages 621-632

Abstract: In criminal and civil cases, evidence is frequently needed to establish a nexus between a specific photograph and a specific camera. Defects in the charge-coupled device, noise introduced by the pixel arrays, file formats, and manufacturer watermarkings were examined as methods to establish the nexus.

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2002, Volume 52, Issue 5, Page 666

Abstract: The fingerprint pattern shown is quite unusual in that it contains a second pattern formation in the lower left area. Since the lower pattern is so far out of the normal pattern area, it is disregarded. Therefore, the pattern is classified as a PLAIN WHORL with an outer tracing. Reference to an accidental-type whorl is necessary.

Battles are Won in the Temples….

Author(s): MacDonald, A.

Type: Commentary

Published: 2002, Volume 52, Issue 4, Pages 397-399

ACE-V: Is It Scientifically Reliable and Accurate?

Author(s): Clark, J. D.

Type: Commentary

Published: 2002, Volume 52, Issue 4, Pages 401-408

Abstract: (See letter to the editor by K. Wertheim in JFI 52 (6).)

The Identification of 35 mm Photographic Negatives Using Frame Edge Defects: A Case Report

Author(s): Lennard, C.; Stoilovic, M.

Type: Case Report

Published: 2002, Volume 52, Issue 4, Pages 409-419

Abstract: The criminalist is occasionally confronted with the determination of whether a given film negative was exposed in a particular camera. This information may be necessary to establish the ownership of a stolen camera, to associate a camera with negatives of questioned origin, or to determine whether two or more film negatives were exposed in the same camera. A case is described where strips of 35 mm negatives alleged to be second or third generation copies were proven to be original negatives from a specific camera based on a comparison of frame edge defects.

A New Method for Obtaining Highly Detailed Exemplars of Shoe Soles and Friction Ridge Detail

Author(s): Hill, T. S.

Type: Technical Note

Published: 2002, Volume 52, Issue 4, Pages 421-425

Abstract: Self-Stick mounting board produces finely detailed exemplars of soles or friction ridge detail using a minimal amount of material.

Latent Fingerprint Development on Thermal Paper using Muriatic (Hydrochloric) Acid

Author(s): Broniek, B.; Knaap, W.

Type: Technical Note

Published: 2002, Volume 52, Issue 4, Pages 427-432

Abstract: The authors conducted experiments to determine whether exposing thermal paper to muriatic acid vapors would facilitate the development of latent fingerprints on the emulsion side. (See letter to the editor by V.G. Sears in JFI 52 (6).)

Development of Prints on Antlers and Horns

Author(s): Czarnecki, E. R.

Type: Technical Note

Published: 2002, Volume 52, Issue 4, Pages 433-437

Abstract: The development of fingerprints in connection with the investigation of hunting violations can provide valuable evidence. Two methods for obtaining prints are presented: (1) cyanoacrylate fuming techniques followed by the application of dye stains, and (2) leucocrystal violet enhancement of prints in blood.

An Unofficial Public Telephone

Author(s): Aharon, O.; Wiesner, S.; Aperman, A.

Type: Case Report

Published: 2002, Volume 52, Issue 4, Pages 439-442

Abstract: Preliminary examination of a public telephone showed that it contained a computer with a disk drive, a cellular telephone, and other electronic devices to record credit card information from users. Electrical tape recovered from in the phone was carefully examined under white light, processed with superglue, dyed with Basic Yellow 40, and dyed with crystal violet and yielded four fingerprints.

Matching Items of Jewelry from a Crime Scene with Items of Jewelry Found in a Suspect's Possession

Author(s): Klien, A.; Shor, Y.; Levin, N.; Brauner, P.

Type: Case Report

Published: 2002, Volume 52, Issue 4, Pages 443-448

Abstract: In a "smash and grab" robbery at a jewelry store that resulted in the murder of the storeowner, a number of items of jewelry were stolen. Among the items remaining in the jewelry store after the robbery were four single earrings and a jewelry display pin. Several months later, a suspect was apprehended. In a search of his vehicle, four single earrings and a jewelry display pin were found. Based solely on class characteristics, the link between a single pair of earrings would not provide strong evidence to connect the suspect to the crime. However, the combination of the five different pairings lead the investigators to conclude that it was highly probable that the items found at the jewelry store and those found in the suspect's car shared a common origin.

Ethics in Forensic Science: A Review of the Literature on Expert Testimony

Author(s): Saviers, K. D.

Type: Article

Published: 2002, Volume 52, Issue 4, Pages 449-462

Abstract: The person offering expert testimony in a court of law faces several challenges. There are the exterior pressures of the adversarial system in the judiciary. There are the interior pressures of human feelings and desires. These, in addition to other factors, may lead to ethical misconduct. This paper outlines a series of behaviors: one group, unethical; the other, demonstrating professional attitudes.

Scientific Evaluation of "Graphology"

Author(s): Throckmorton, G. J.

Type: Article

Published: 2002, Volume 52, Issue 4, Pages 463-474

Abstract: In Kumho Tire Company v. Carmichael, ll9 S. Ct. 1167 (1999), the U.S. Supreme Court states that expert testimony cannot be accepted if the discipline itself lacks reliability. Questions regarding the reliability of graphology as a discipline have been debated by both graphologists and forensic document examiners for many years. Graphologists claim their training establishes them as scientifically reliable. During a period of 11 years, more than 500 people participated in a series of blind tests to determine whether the principles of graphology are reliable. The results of these tests show absolutely no correlation between a person's handwriting and his/her personality traits. The research further demonstrates the principles relating to graphology are neither accurate, nor consistent, and, therefore, are not reliable.

Quantitative-Qualitative Friction Ridge Analysis by D.R. Ashbaugh

Author(s): Hazen, R. J.

Type: Book Review

Published: 2002, Volume 52, Issue 4, Pages 475-476

Bloodstain Pattern Analysis with an Introduction to Crime Scene Reconstruction by T. Bevel and R. M. Gardner

Author(s): Bratton, R. M.

Type: Book Review

Published: 2002, Volume 52, Issue 4, Pages 477-479

Forensic Tire Impression Identification by L. Nause

Author(s): Wiersema, S.

Type: Book Review

Published: 2002, Volume 52, Issue 4, Pages 480-481

Back to Basics

Author(s): Osborn, K. H.

Type: Back to Basics

Published: 2002, Volume 52, Issue 4, Page 533

Abstract: The fingerprint pattern shown, classified as a TENTED ARCH, is quite unusual.

Information Needed

Author(s): Tilson, R.

Type: Letters

Published: 2002, Volume 52, Issue 3, Page 249

Emergency

Author(s): Morton, E.

Type: Commentary

Published: 2002, Volume 52, Issue 3, Pages 250-251

Forensic Science, Psychology and Philosophy

Author(s): Vanderkolk, J.

Type: Commentary

Published: 2002, Volume 52, Issue 3, Pages 252-253

The Case of Boss Tweed: Identification by Caricature

Author(s): Moore, M. K.; Haglund, W. D.

Type: Technical Note

Published: 2002, Volume 52, Issue 3, Pages 254-262

Abstract: December 5, 1875, the New York City corrupt political giant, Boss Tweed, escaped from prison. Because of a political cartoon done by Thomas Nast, a Harper's Weekly illustrator, Boss Tweed was recognized andapprehended upon his arrival in Spain, after nearly a year at large. A brief survey of psychological research of human face recognition is included, to better understand the phenomenon of "caricature advantage". Several recent studies conclude that both child and adult subjects will prefer a slightly caricatured photo or line drawing over a veridical image of a familiar subject. This "caricature advantage" is evidenced in both speed and accuracy of identif ication. This suggests that the mind either stores familiar facial images in memory as a slight caricature or that caricatures optimize the retrieval process. Both conclusions make car icatures enticing to forensic application.

SWGFAST

Author(s): McRoberts, A. L.

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Pages 266-267

SWGFAST — Guidelines for Professional Conduct

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Page 268

SWGFAST — Friction Ridge Automation Training Guidelines

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Pages 269-275

SWGFAST — Friction Ridge Digital Imaging Guidelines

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Pages 276-278

SWGFAST — Validation of Research and Technology

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Pages 279-287

Abstract: The purpose of validation is to ensure the integrity of all techniques and procedures used for the development of friction ridge detail in order to establish confidence in those techniques and procedures for the examiner and the scientific and legal communities.

SWGFAST — Glossary - Friction Ridge Automation

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Pages 288-293

SWGFAST — Glossary - Anatomy

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Pages 294-299

SWGFAST — Glossary - Identification

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Pages 300-304

SWGFAST — Glossary - Fingerprint Classification

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Pages 305-308

SWGFAST — Minimum Qualifications for Latent Print Examiner Trainees

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Page 309

SWGFAST — Training to Competency for Latent Print Examiners

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Pages 311-315

Abstract: This outline provides the recommended training program to achieve competency in friction ridge examination. The student must demonstrate knowledge of required objectives by passing written tests and/or practical exercises, and by communicating an understanding of the objectives and underlying principles. It is also strongly recommended that students demonstrate knowledge of supplemental objectives.

SWGFAST — Quality Assurance Guidelines for Latent Print Examiners

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Pages 316-323

Abstract: Friction ridge examinations are based on the following premises: The fundamentals of the science of friction ridge individualization (identification) are permanence and individuality. The comparison and individualization of two areas of friction ridge impressions are based on the examination of infinite combinations of ridge structure, individual ridge appearance, minutiae, spatial relationships, pores, and other details. There is no scientific basis for requiring that a minimum number of corresponding friction ridge details be present in two impressions in order to effect individualization.

SWGFAST — Friction Ridge Examination Methodology for Latent Print Examiners

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Pages 324-328

SWGFAST — Glossary - Latent Print Processing

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Pages 329-338

SWGFAST — Glossary - Identification (Supplement)

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Page 339

SWGFAST — Bylaws

Author(s): SWGFAST

Type: Special Feature

Published: 2002, Volume 52, Issue 3, Pages 341-345

Forensic Handwriting Identification, Fundamental Concepts and Principles

Author(s): Licht, G.

Type: Book Review

Published: 2002, Volume 52, Issue 3, Pages 349-351

Mute Witnesses: Trace Evidence Analysis

Author(s): Stephens, D. D.

Type: Book Review

Published: 2002, Volume 52, Issue 3, Pages 352-353

Back to Basics

Author(s): Douthit, J. D.

Type: Back to Basics

Published: 2002, Volume 52, Issue 3, Page 394

Abstract: The fingerprint pattern shown contains two of the basic requirements for a whorl-type pattern, i.e., two deltas with a recurving ridge in front of each. The left and right deltas are marked D-1 and D-2 respectively. Since a line drawn between the deltas does not touch or cross a recurving ridge, the pattern is classified as a Central Pocket Loop Whorl. References to a plain loop and tented arch are necessary.

Latent Print Recovery from Human Skin

Author(s): Wilgus, G.

Type: Case Report

Published: 2002, Volume 52, Issue 2, Pages 133-135

Abstract: During a two week period three female homicide victims were found in the same general location. The second victim's body was processed using an alternate light source, cyanoacrylate fuming, and black magnetic powder. A latent palm print of value, which was developed on the stomach of victim two, was subsequently compared and identified to a suspect.

The Reconstruction of A Staged Sexual Assault

Author(s): Adair, T. W.

Type: Case Report

Published: 2002, Volume 52, Issue 2, Pages 137-143

Suicide by Drowning? An Unlikely Method

Author(s): Heindel, A. J.

Type: Case Report

Published: 2002, Volume 52, Issue 2, Pages 145-150

Abstract: In all apparent suicide by drowning events, the death scene investigator should bear in mind the drowning sequence. The investigator must also consider environmental factors, such as water temperature, depth, current, and submerged entanglements or obstructions. Other factors relating to the victim, such as alcohol or drug abuse, emotional state, recent behavior, medical history, or evidence of suicidal intent, must be considered. Although drowning is listed as a rather common cause of accidental death, a victim's body that is discovered in water may also be there as an attempt to conceal a homicide. The immediate suggestion of a drowning suicide at a death scene should be met with healthy suspicion.

Identification of Human Remains Through Comparison of Computerized Tomography and Radiographic Plates

Author(s): Kahana, T.; Goldstein, S.; Kugel, C.; Hiss, J.

Type: Case Report

Published: 2002, Volume 52, Issue 2, Pages 151-158

Abstract: Scientific identification of human remains is frequently accomplished by comparing antemortem and postmortem radiographic (X-ray) data. Positive identification of a decomposed cadaver was achieved by comparing: (1) antemortem computerized tomography (CT) images of the head with postmortem cranial radiographs, and (2) antemortem with postmortem radiographs depicting staples within the abdomen.

Treatment of Cocaine Contaminated Polythene Bags Prior to Fingerprint Development by Cyanoacrylate Fuming

Author(s): Magora, A.; Azoury, M.; Geller, B.

Type: Technical Note

Published: 2002, Volume 52, Issue 2, Pages 159-168

Abstract: Cyanoacrylate fuming is applied routinely by many law enforcement agencies to develop latent fingerprints on polythene bags. Polythene wrapping contaminated with residue drug powder is a common challenge, as these articles usually render no prints. It has been observed that the problem is especially acute when the polythene has been contaminated with cocaine residue. In this study, five solvents or solvent mixtures were tested for maximal removal of cocaine residues, while ensuring minimal damage to the latent marks. Diethyl ether was found to be a suitable solvent. The rinsing protocol is quick and easy to perform. Immersion was found to produce better results than spraying. Although the rinse does not inhibit further treatment with cyanoacrylate, subsequent vacuum metal deposition processing was impaired by the treatment.

Scent as Forensic Evidence and Its Relationship to the Law Enforcement Canine

Author(s): Mesloh, C.; Wolf, R.; Henych, M.

Type: Article

Published: 2002, Volume 52, Issue 2, Pages 169-182

Abstract: This paper examines the utilization of the police canine as a tool to discriminate certain types of scents (particularly narcotics, explosive devices, and accelerants), search for evidence, track suspects or

endangered persons, and locate cadavers. Specifically, this paper examines the police canine's abilities and shortcomings while working "in the field" and in non-laboratory conditions. The role of the canine handler and the possibility of contamination are also examined.

Three-dimensional Models for Bloodstain Pattern Analysis

Author(s): Moore, C. C.

Type: Article

Published: 2002, Volume 52, Issue 2, Pages 183-203

Abstract: Traditional teaching and court presentations of Bloodstain Pattern Analysis included the use of two-dimensional drawings on flip charts or posters to illustrate the angles, shapes, and interpretative analysis of their relationships. The purpose and stages of development of a three-dimensional model are explained. The three-dimensional model was presented to different survey participants and evaluated for its usefulness. On December 4, 2000, the first presentation of the three-dimensional model was presented in court.

Back to Basics

Author(s): Douthit, J. D.

Type: Back to Basics

Published: 2002, Volume 52, Issue 2, Page 246

Abstract: The fingerprint pattern shown contains two separate loop formations and two deltas. It is therefore classified as a Double Loop Whorl and referenced to a 24 count plain loop.

Evaluation of a Solid State"Shoe Box" Laser: The Spectra-Physics Millennia 532nm Laser

Author(s): Warner, G. C.

Type: Technical Note

Published: 2002, Volume 52, Issue 1, Pages 1-28

Abstract: This study was initiated to investigate the use of the solid state laser in case work. The overall size of laser components has noticeably decreased. A significant change to the size of the laser head has been another result. Because of their small size, these lasers have been dubbed "shoe box" lasers.

Back to Basics

Author(s): Douthit, J. D.

Type: Back to Basics

Published: 2002, Volume 52, Issue 1, Page 130

Abstract: The fingerprint pattern shown contains two separate loop formations ("A" & "B"), and one delta, approaching the arbitary tented arch type. Since recurve "B" is somewhat obscured by a ridge abutting from the left, the pattern is classified as a one-count Loop with reference to a tented arch.

Fluorescence Photography of Latent Fingerprints: Using Electronic Flash in the Field

Author(s): O'Brien, S.

Type: Technical Note

Published: 2002, Volume 52, Issue 1, Pages 29-33

The Critical Stage of Friction Ridge and Pattern Formation

Author(s): Wertheim, K.; Maceo, A. V.

Type: Article

Published: 2002, Volume 52, Issue 1, Pages 35-85

Abstract: This study provides an enhanced understanding of the biological structure and development of friction ridge skin for the latent print examiner who is called upon to explain the scientific principles of latent print identification as based on permanence and uniqueness. Cellular attachments ensure permanence, while variable stresses and cellular distributions account for individuality on all "three levels" of detail. Volar patterning is dependent upon the tension across the surface of the developing skin during a critical stage of approximately 10.5 to 16 weeks estimated gestational age. Fingerprint ridge counts are predominantly affected by two combined timing events: the onset of epidermal cellular proliferation and the timing of the regression of the volar pads. Fingerprint pattern types are predominantly affected by the symmetry of the volar pad. [See letter to the editor by Kasey Wertheim in JFI 60 (6).]

Anthrax Insights

Author(s): Rahni, D. N

Type: Article

Published: 2002, Volume 52, Issue 1, Pages 86-94