JFI Abstracts from 2022

Issue 4: Oct - Dec 2022

Reconstruction of a Ported Barrel Patterned Injury in a Contact Gunshot Wound

Author(s): Fantaskey, Amy P.; Peterson, Kris A.; Gunther, Wendy M.; Kinnison, Elizabeth L.; Brady, Thomas
Type: Case Report
Published: 2022, Volume 72, Issue 4, Page 377
Abstract: Recognizing unusual, patterned injuries on decedents is important across a variety of forensic disciplines. This case report details an anterior neck patterned injury encountered during an autopsy involving a submental gunshot wound from a ported Taurus .357 magnum revolver. It was hypothesized the pattern resulted from products of combustion expelled through a port in the barrel of the revolver. Using the same type of revolver and reconstruction techniques, including anthropomorphic simulants, long-exposure photography with nonsynchronized flash, and low-light videography with single frame capture, similar patterns were observed.

Two Case Studies of Automated Fingerprint Identifications Using Cellular Phone Photographs

Author(s): Loll, Allison
Type: Case Report
Published: 2022, Volume 72, Issue 4, Page 393
Abstract: Latent print forensic work has mainly consisted of comparing and identifying powdered or chemically developed latent prints from crime scenes and continues to be a major asset to criminal investigations. In recent times, because of high-resolution cell phone cameras becoming pervasive in our society, there may be more forensic evidence than has been realized. In this paper, two cases will be discussed where cell phone photographs taken during or related to a crime unintentionally photographed perpetrators' friction ridge skin on their hands or fingers. The photographs were high resolution and depicted the friction ridge detail sufficiently for an automated fingerprint identification system (AFIS) search. After performing basic digital imaging tasks, the images of the friction ridge skin were entered into a MorphoBIS AFIS and both images were identified to the first candidate. The purpose of this article is to draw attention to the possibility of using cell phone images (or any high-resolution image) containing friction ridge skin to identify individuals related to a crime.

An Evaluation of the Acetone Thermal Coating Removal Technique on Thermal and Carbonless Paper

Author(s): Styx, Vanessa R.; Brown, Stephanie A.
Type: Technical Note
Published: 2022, Volume 72, Issue 4, Page 403
Abstract: Thermal and carbonless papers can be difficult to process for the presence of latent friction ridge detail because of the reaction of these papers with polar solvents and heat. This study evaluated the use of acetone as a method to remove the active components of these papers

and the effect on subsequent processing with the 1,2-indanedione zinc chloride and ninhydrin processing sequence. Thermal labels and nonthermal receipts were also included in the sample group. The use of the acetone treatment before and after the sequential processing was examined. A comparison was also made between the traditional reagent processing method and the dry contact application of the 1,2-indanedione zinc chloride. The acetone thermal coating removal technique was generally successful on all items that were tested except the thermal labels. The recommended processing sequence, based on the results of this study, is a pretreatment application of acetone followed by the traditional reagent application of 1,2-indanedione zinc chloride and ninhydrin.

Processing Glassine Stamp Bags for Latent Prints: The Effect of Deposition Time on Reagent Performance

Author(s): Barnes, Brittany; Clark, Jason; Kadane, Joseph B.; Priestley, Marla; Wauthier, Denielle
Type: Article
Published: 2022, Volume 72, Issue 4, Page 429
Abstract: Four common latent print processing methods were used on glassine stamp bags held for intervals of 0, 3, 6, 9, and 12 months after print deposition to determine which reagent performed the best. The results showed that no one reagent provided consistently identifiable latent print development across a 12-month period. However, at longer than 3 months, DFO began to outperform ninhydrin, magnetic powder, and a sequential DFO and ninhydrin treatment. At an elapsed interval of 3 months or less, magnetic powder should be considered for processing.

The Frequency of Scarred Friction Skin and the Classification of Characteristics Used to Recognize Scar Features

Author(s): Cicchetti, Maralena
Type: Article
Published: 2022, Volume 72, Issue 4, Page 445
Abstract: To provide knowledge and awareness of scar features and to establish indicators for use during latent print comparisons, a study of how frequently scars occurred in friction ridge impressions was undertaken. Six hundred tenprint exemplars were analyzed for scarred friction skin. During the verification step, it was recognized that there was inconsistency in the features that examiners used to recognize scars. For the purposes of this study, parameters were established based on previous studies on the skin-healing process and the training and experience of the participating examiners. The results indicated that 50% of individuals exhibited scar features, with the highest amount occurring on the index and middle fingers.

Police Sketches: An Analysis of Witness Confidence, Accuracy, and Conviction Ratings

Author(s): Lang, Kenneth R.
Type: Article
Published: 2022, Volume 72, Issue 4, Page 462
Abstract: Researchers have sought to better understand the phenomenology that occurs with eyewitnesses and their recollection of a target when conducting identification processes. Without

question, the effects of a sketch have become a part of the analytics in discerning the impact of the witnesses' confidence compared to their accuracy. Yet, there are insufficient studies involving actual police sketches from the field. Of particular interest in this study is how much of the existing research does not represent the reality of what transpires when a police sketch is conducted. Researchers admit the parameters in which their studies are completed are devoid of the actualities from real cases. For example, because participants are in a controlled environment, the case lacks stressors that often accompany the victims and witnesses of crimes who are providing characteristics to generate a sketch. Furthermore, the processes of generating a sketch are not equitable to that of actual investigations. I served as a forensic artist from 2000 to 2013. In this study, I codified the data from my forensic art logbook, conducted a linear regression analysis (ANOVA and ANCOVA) of confidence and accuracy ratings of the sketches, and analyzed the information to the conviction ratings in each case. The analysis revealed that in comparing findings between a larger and smaller group of witnesses' confidence and accuracy ratings, no correlation was found. However, when examining cases using composite sketches and being adjudicated in court, the lower accuracy ratings had no impact on the conviction rating.

Optimizing FTA Card Punch Location to Maximize Quantity of Extracted DNA and Improve Profile Quality

Author(s): Yom-Tov, Talia; Spitzer, Aya; Einot, Naftaly; Dahan, Dana
Type: Article
Published: 2022, Volume 72, Issue 4, Page 486
Abstract: The Israeli DNA database uses FTA cards to store suspects' DNA. Samples are collected by rubbing a swab on the inner surface of the cheek and blotting it on an FTA card. The cards contain an indicator that changes color from pink to white on contact with the moist saliva. These white stains are not uniform in color and several degrees of white can be distinguished. According to manufacturer instructions, there is currently no specification for identifying the most suitable location for punching a sample from an FTA card. In this study, we examined the correlation between the degree of color change on FTA cards, the amount of recovered DNA, and the quality of the DNA profile obtained following PCR amplification. The intensity of the white stains on the FTA cards was categorized using the graphics software Photoshop. DNA was extracted from areas with different whiteness intensity, then quantified, and typed using a multiplex STR kit. The quality of a DNA profile was determined based on the profile's average peak height, the number of amplified alleles, and the percentage of samples that were database-compliant based on our lab procedures. The findings presented here show a linear correlation between the intensity of a stain on the FTA card and both DNA quantity and profile quality. Following the procedure suggested in this study can increase the number of complete profiles that get included in the DNA database and reduce the need for time-consuming repunching and reamplifications, thereby reducing costs.

Back to Basics

Author(s): Siegel, Sandy, CLPE
Type: Article
Published: 2022, Volume 72, Issue 4, Page 508
Abstract: Funny finds from all over in their own words.

Issue 3: July - Sept 2022

Forensic Analysis and a New Investigation into the Death of the Czechoslovak Minister of Foreign Affairs in 1948

Author(s): Spička, Jan; Cermák, Martin
Type: Case Report
Published: 2022, Volume 72, Issue 3, Page 245
Abstract: This paper describes the political, social, and historical situation in Czechoslovakia in the year 1948 when the body of Jan Masaryk, the Minister of Foreign Affairs, was found in the courtyard of the Ministry of Foreign Affairs at ernín Palace. His death is still unresolved, although several investigations have been carried out. We, the authors, will summarize those investigations and point out some important features. In 2019, a new investigation (based on our research) was initiated from documents containing newly discovered information. The work here will present an application of basic analytical mechanics and numerical calculations with a human body model, but applied in forensic analysis. The results may totally change the view of this point in Czechoslovak history.

Fingerprint Identification from Sexual Abuse Videos Obtained from a Mobile Device

Author(s): Sanjuán, Guillermo; Pedreño-Sala, Aarón; Boronat-Far, Vicente; González-Novo, Ignacio
Type: Case Report
Published: 2022, Volume 72, Issue 3, Page 287
Abstract: This report describes a case of positive identification of the abuser's fingers appearing in a child sexual abuse video. A specific single frame, with the optimal conditions for fingerprint comparison, was selected from the video. The image was processed to optimize the friction skin detail. A simple scaling procedure was carried out to compensate for the lack of a forensic measurement scale on the image. Then, the image was compared to the fingerprints of the individual under investigation. The comparison revealed that fingers appearing in the video matched to the thumb and index finger from the left hand of the suspect's tenprint.

Because high-quality videos are becoming increasingly available on-line, reliable extraction and processing of video frames may well be an effective method for the fingerprint identification of perpetrators of criminal acts, including child sexual abuse criminals.

Expanding Morphological Criteria for Identifying Cannabis Seeds – Analysis of a New Variant of Cannabis Seeds

Author(s): Gutman, Ori; Dyan, Haim; Rohaker, Benny
Type: Case Report
Published: 2022, Volume 72, Issue 3, Page 299
Abstract: The National Drugs Analysis Laboratory received a 3.2-kilogram batch of seeds that had been smuggled into Israel and was subsequently seized by the authorities at the airport. A botanist inspected the seeds and identified 2.2-kilograms of this catch as seeds of the strain Cannibis sativa based on the accepted criteria described in the literature for this strain. However,

one kilogram of the seeds had an additional ridge down the length of the seed, which made it difficult to visually confirm that these were indeed Cannabis seeds.

These different-looking seeds were germinated in the National Drugs Analysis Laboratory, and the seedlings were tested by inspection under the microscope for cystolithic hairs. They were analyzed using the Duquenois-Levine and Fast Blue BB color tests. These are the three standard tests for positive identification of Cannabis. Seedlings were also extracted and analyzed by gas chromatography mass spectrometry to gain additional information about the plant that had developed from the new seed variety. Seedling extracts clearly contained tetrahydrocannabinol (THC), but the dominant cannabinoid was cannabichromene (CBC). Although the seeds were morphologically slightly different from the descriptions in the literature, the plants that developed from them were clearly identifiable as Cannabis plants. We concluded that there is a need to expand the morphological classification of Cannabis seeds to include both one and two ridges down the length of the seed.

Using an Alternate Light Source to Recover Sticker Marks from a Vehicle

Author(s): Gonen, Noam; Gilad, Yitzhak; Ziv, Dan; Rajs, Nora; Finkelstein, Nir S.
Type: Case Report
Published: 2022, Volume 72, Issue 3, Page 313
Abstract: The case presented in this paper concerns an examination that was conducted on a vehicle that had visible stickers on the trunk lid when it was photographed by security cameras near a crime scene and a recovered vehicle that had no stickers on the trunk lid to determine whether they were the same vehicle. By using an alternate light source to examine the locations of the stickers, a forensic expert was able to confirm that the vehicle in question was indeed the same vehicle that was observed in the security camera footage.

Latent Print Recovery on Post-Blast Improvised Explosive Device Components

Author(s): Hijaz, Feras; Mills, Dawn M.; Book, Mary K.; Rivers, Jeff; Whitworth, W. Mark
Type: Article
Published: 2022, Volume 72, Issue 3, Page 320
Abstract: The recovery of latent prints from post-blast improvised explosive device (IED) components can link a bomb maker to a specific device after an explosion occurs. Here, different combinations of IED substrates were assembled, spiked with latent prints, and detonated using trinitrotoluene (TNT), C-4, and ammonium nitrate and aluminum (ANAL). Latent prints (187) were developed on the post-blast IED components, resulting in a 63% latent print recovery. The substrates yielding the most developed latent prints were black vinyl tape, metal, and clear packing tape. The IEDs prepared with C-4 resulted in the highest percent recovery of latent prints; IEDs prepared with ANAL resulted in the least. Of the latent prints detected, 63% were determined to be suitable for comparison by qualified latent print examiners. This study demonstrates the value of processing post-blast IED components for latent prints using a variety of laboratory techniques, identifies the substrates most conducive for latent print recovery, and determines the effect of different explosive types on the recovery of latent prints.

Visualization of Latent Fingerprints on Fabrics Using Vacuum Metal Depostion

Author(s): Horvath, Anita
Type: Article
Published: 2022, Volume 72, Issue 3, Page 339
Abstract: Vacuum metal deposition (VMD) is a highly sensitive latent fingerprint development technique that involves the thermal evaporation and thin-layer deposition of metal(s) on substrates in a high vacuum environment. This research was conducted to identify the best VMD method to visualize latent fingerprints on six of the most common fabric types (i.e., cotton, satin, polyester, linen, felt, and denim) used in the fashion industry. The deposited fingerprints from seven donors were left to age for 1, 7, 14, and 28 days before being processed to determine how much the fabric substrate, age of the deposited prints (change in fingerprint composition), and donor variability affect the enhancement of the latent fingerprints.

The eight metal processes that were tested included the most often used (i.e., gold zinc metal combination) and alternative metals and metal combinations (i.e., silver, silver zinc, aluminum zinc, sterling silver, sterling silver zinc, copper, and copper zinc).

In this study, better ridge detail was developed on tight-weave, smoother fabrics, such as satin, as opposed to loose-weave, more porous fabrics, such as linen. Poor donors left a limited amount of residue on surfaces, resulting in lower grade fingerprint development. The longer the fingerprints were aged, the fewer ridge details were developed. The overall results suggest that the copper zinc process provided a better quality of fingerprint development than the other processes, closely followed by the aluminum zinc metal combination.

Back to Basics

Author(s): Siegel, Sandy, CLPE
Type: Back to Basics
Published: 2022, Volume 72, Issue 3, Page 376
Abstract: Funny finds from all over in their own words.

Issue 2: April - June 2022

Y-STR Data Leads to Individualization of Accused in a Sensational Rape and Murder Case

Author(s): Chauhan, Kamal; Mohapatra1, B. K.; Sharma, Anchal; Dagar, Seema B. K. Mohapatra; Bhandari, Deepika; Sahajpal, Vivek
Type: Case Report
Published: 2022, Volume 72, Issue 2, Page 133
Abstract: This case report discusses the investigation of a rape and murder case. The Y-STR DNA profile of the brother and the autosomal STR DNA profile of the mother of the suspected perpetrator (who had absconded) were used to identify the perpetrator. This case highlights the absence of a criminal DNA database in India, where it becomes extremely difficult to solve cases

and track repeat offenders in a population of more than 1.35 billion (17.7% of the world's population).

Choosing a Forensic Quantification Kit to Optimize DNA Profiling Workflow

Author(s): Spitzer, Aya; Einot, Naftaly; Voskoboinik, Lev; Balas, Shulamit; Amiel, Merav; Oz, Carla
Type: Technical Note
Published: 2022, Volume 72, Issue 2, Page 142
Abstract: The first steps in forensic DNA analysis are usually extraction and quantification of DNA. Quantification enables us to assess the efficiency of DNA extraction and the quality of extracted DNA. This technical note discusses the evaluation of two quantitative PCR (qPCR) protocols from QIAGEN: (1) Investigator Quantiplex Pro kit (Pro), which assesses the quantity and quality of DNA through amplification of long and short human autosomal targets and male DNA fragments using the TaqMan-based assay and (2) Investigator Quantiplex HYres kit (HYres), which detects and quantifies total human and male DNA using the Scorpion primer-based assay. In 69 male FTA reference samples, the male to human DNA concentration ratios were more closely correlated using the Pro kit than the HYres kit. Furthermore, reference samples (n = 80) amplified based on the quantification results showed a more uniform distribution of average peak height with the Pro kit than with the HYres kit. Of 318 casework samples, 23 samples indicated sub-threshold values when analyzed with the HYres kit, but quantification results of the same samples using the Pro kit indicated DNA amounts that crossed the threshold acceptable amplification. A complete STR DNA profile was obtained from only one of these samples. These results indicate that when choosing a quantification kit for a forensic case work laboratory, multiple considerations can contribute to successful workflow. Alongside the obvious advantages of a robust qPCR kit, the authors present additional considerations in choosing the right kit to obtain an optimal workflow in a casework forensic laboratory.

Visualization of Gunshot Residue on Dark Fabric: A Comparison of Infrared Photography and an Alternate Light Source

Author(s): Vecellio, Mark
Type: Technical Note
Published: 2022, Volume 72, Issue 2, Page 157
Abstract: Gunshot residue (GSR) is expelled from weapons upon discharge. GSR may be composed of smoke, metallic fragments, unburned and partially burned gunpowder particles, primer residues, and lubricants. Visible GSR deposition from gunpowder discharge may be useful to investigators in a variety of ways. GSR, however, may be obscured when it is deposited on dark surfaces. This study examines and compares two methods of visualizing obscured GSR deposited from two different firearms and types of ammunition from 3 inches, 9 inches, and 18 inches. Both infrared light and visible 450 nm blue light resulted in effective visualization of gunpowder discharge on black cotton fabric. Infrared, however, was more effective in revealing burning and scorching at the 3-inch range and bullet wipe at the 9- and 18-inch ranges. The 450 nm blue light was effective in revealing scattered particles, but ineffective in revealing burning, scorching, and bullet wipe. This research should be of value to investigators whose duties include searching for, collecting, and analyzing physical evidence.

WET UCIO -- New Powder Suspension Formula for Fingerprint Development on the Adhesive Side of Tape

Author(s): Claveria, Sergi; Clares, Néstor; Fernández, Patricia; Heredia, Roger; Godall, Anton
Type: Technical Note
Published: 2022, Volume 72, Issue 2, Page 174
Abstract: The development of fingerprints on the adhesive side of tape is a common task in forensic laboratories. Several methods are used for this purpose, although one of the most common is the application of powder suspension solutions. Our research has shown that it is possible to use a carbon-based powder suspension solution containing only two components (sodium lauryl sulphate and carbon black powder) in a simple, economical, and effective way. This solution was more effective than the commercial products WetWop and Adhesive-Side Powder Dark mixed with EZFLO Solution in the development of fingerprints on the adhesive side of eight different types of tapes.

Using Vacuum Metal Deposition to Detect Latent Fingermarks on Thermal Paper: A Pseudo-operational Trial>

Author(s): Gabrielle Illston-Baggs, Gabrielle; Deacon, Paul; Nichols-Drew, Leisa; Farrugia, Kevin J.
Type: Article
Published: 2022, Volume 72, Issue 2, Page 185
Abstract: This work presents a pseudo-operational study on thermal paper for the detection of latent fingermarks with vacuum metal deposition (VMD) and amino acid sensitive reagents (1,2-indanedione and ninhydrin) on 120 thermal receipts. Each receipt was cut in half and separated into two processing groups. Each group was processed by one of two sequential treatment processes. Both sides of all receipts (thermal and nonthermal side) were treated. Fingermarks developed by each process were counted and imaged. Both sequences started with the use of UV imaging. Process A then continued with VMD using gold and zinc (VMDAu/Zn), then VMD using silver (VMDAg), followed by two amino acid sensitive reagents (1,2 indanedione and ninhydrin). Process B used only the amino acid sensitive reagents. Process A increased the detection rate on the thermal side by approximately a factor of two and a half when compared to the VMD techniques. The VMD processes did not visualize all of the marks detected by UV; however, this was the case for the amino acid sensitive reagents. The use of VMD can be suitable for the detection of fingermarks on thermal paper in cases where the text needs to be retained; however, the use of 1,2-indanedione and ninhydrin, in sequence with VMD, will detect the highest number of marks.

Using Silver Nitrate and Ultraviolet Light to Enhance Footwear Impressions Containing Salt Residue

Author(s): Elayas, Malak; Borsodi, Matthew; Nugent, Kimberly; Hamid, Desiree
Type: Article
Published: 2022, Volume 72, Issue 2, Page 200
Abstract: There is great interest in the identification of chemical reagents for the routine enhancement of footwear impressions. We present a silver nitrate recipe and application method, in combination with ultraviolet (UV) light, for the visual enhancement of footwear impressions containing salt residues on various substrates. A preliminary evaluation of various silver nitrate

concentrations revealed that the best silver nitrate formulation, of the six that were tested, was 5% silver nitrate in 10% methanol. Three different salt brands were used to create residue impressions on six different substrates (ceramic tile, vinyl tile, Plexiglas, hardwood, nylon carpet, and concrete). Variables that were evaluated included the salt type and concentration, drying time, and substrate. An additional trial was conducted to expand on the previous results by enhancing impressions on ceramic tile, vinyl tile, untreated wood, polyester mat, and an olefin rug. The solution's ability to enhance randomly acquired characteristics was also tested. Overall, a simple method of application of 5% silver nitrate in 10% methanol followed by exposure to a UV Polilight for 30 seconds enabled the visualization of the impression samples. This enabled increased visualization of class and randomly acquired characteristics that were present in the footwear impressions. We anticipate this formulation of silver nitrate becoming a useful, less toxic alternative for the visual enhancement of footwear impressions containing salt.

Modifying the Enhancement Capabilities of Luminol in Detecting Bloody Footwear Impressions using Highlighter Inks and Chemical Dyes

Author(s): Mahadeo, Natasha; Knaap, Wade; Gapinska-Serwin, Agata
Type: Article
Published: 2022, Volume 72, Issue 2, Page 225
Abstract: The blue luminescence of luminol is widely recognized, and luminol is known for its ability to detect the presence of blood by its peroxidase-like mechanism. This study was conducted to determine whether using highlighter ink or fluorescent dyes could improve certain aspects of luminol's ability to detect and enhance bloody footwear impressions This study yielded positive results with fluorescein and the yellow and green Sharpie highlighter inks. The addition of the yellow and green inks allowed for the intensity of the reaction to be consistent over varying amounts of visible blood and under different lighting. We also found that the addition of fluorescein to the luminol formulation was most successful in not only enhancing the variables of intensity and duration of the luminescence, but also in visualizing the reaction without complete darkness. Additionally, fluorescein changed the blue color associated with luminol, allowing for better contrast with the substrate, thus providing useful applications to the field of forensic identification.

Back to Basics

Author(s): Siegel, Sandy, CLPE
Type: Back to Basics
Published: 2022, Volume 72, Issue 2, Page 242
Abstract: Funny finds from all over in their own words.

Issue 1: January - March 2022

Letter to the Editor

Author(s): Kent, Terence
Type: Letter to the Editor

Published: 2022, Volume 72, Issue 1, Page 001
Abstract: Re: Evaluation of the Effectiveness of Lumicyano in the Recovery of Latent Prints When Compared to Rhodamine 6G Liquid Dye Stain Journal of Forensic Identification 2021, 71 (4), 2021

Probing the Formation and Characteristics of Downward Cast-off and Cessation Patterns

Author(s): Phua, Zai Rong; Hauw, Jie Boon
Type: Technical Note
Published: 2022, Volume 72, Issue 1, Page 004
Abstract: In bloodstain pattern analysis, the classification of bloodstains is key to shedding light on the mechanisms involved in bloodletting events. In this study, an experimental device that could swing forward and downward was constructed to produce the characteristics and quantitative information from the resultant patterns. The bloodstains were observed to be distributed in broadly three regions: The upper and central regions had spatter stains progressively changing in shape from circular to elliptical down the target, in a linear or curvilinear fashion, primarily as a result of cast-off. The lower region had spatter stains of less than 1 mm, usually deposited in a horizontal spread because of the cessation effect. We found that the height of the patterns increased with the swing speed and volume of blood that was used. In our experimentation, a high-speed camera proved to be useful in facilitating the visualization of the swing dynamics and bloodletting process. This provided a better understanding of the release of blood from an object's end (formation of ligament and droplets) when surface tension effects were overcome.

Who Actually Discovered Fingerprint Powders?

Author(s): Claveria, Sergi
Type: Article
Published: 2022, Volume 72, Issue 1, Page 022
Abstract: Dr. René Forgeot is usually given credit for the discovery of using powder to develop fingerprints. However, this paper provides a review of documentation from the late 19th century and early 20th century and reveals that the first person who actually used powder for fingerprint development may have been Alphonse Bertillon.

Features of the Friction Ridge Skin: Attributes, Diagnosticity, and Limitations

Author(s): White, Alice V.
Type: Article
Published: 2022, Volume 72, Issue 1, Page 033
Abstract: The volar surface of hands and feet display an array of diagnostic features that exhibit both macroscopic and microscopic morphometric attributes. The macroscopic attributes are typically developmentally stable in the human population, which means these features can be exploited to determine which part of the hand or foot is represented in an impression and the distal orientation of an impression. The microscopic attributes are often subject to stochastic effects during embryological development or acquisition after birth. As a result, these smaller features can be combined with the macroscopic features to determine the ultimate utility of an

impression and support source conclusions. Although the diagnosticity of each macroscopic and microscopic feature has theoretical constraints based on the influence of developmental stability and developmental noise, there are also biological constraints to the longevity of each feature and sources of distortion that affect the recording of the features in an impression. This article sheds light on the various features of the friction ridge skin, the attributes of each feature, the expected usefulness of these features for establishing search parameters, the expected usefulness in establishing identity, and common sources of variation in appearance of each feature. This article also illuminates areas where additional research would benefit the friction ridge community.

Back to Basics

Author(s): Siegel, Sandy, CLPE
Type: Back to Basics
Published: 2022, Volume 72, Issue 1, Page 130
Abstract: Funny finds from all over in their own words.