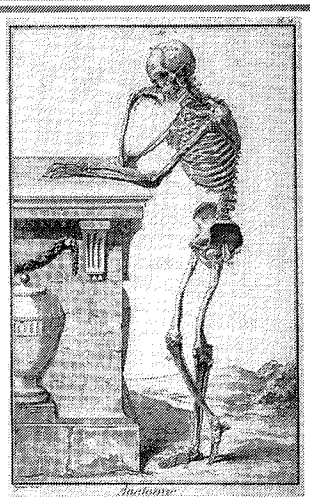
Crime Scene

Spring/Summer 1999 Volume 25, Issue 2-3

INSIDE



President's Message Spring 1999

I would like to personally thank George Taft, Karen Tabios, Leanne Strickland, Jill Booth, Kristin Denning, Jim Wolfe, and the rest of the Alaska Scientific Crime Detection Laboratory for the successful NWAFS Spring joint conference with the Alaska Peace Officers Association held in Anchorage, Alaska, April 18th-23rd. Your hard work in organizing and hosting the conference as demonstrated by the quality of the workshops and papers presented was most appreciated. Alaska is not the easiest, or least expensive location to travel to, and I am sure that reflected in the number of scientists who could get funding or afford to attend the conference. Those of us fortunate enough to attend enjoyed the experience and feel it was a rewarding conference. Our members who did not attend simply missed a very beneficial conference. In addition to the workshops and scientific papers, the extra activity events such as the "Springtime in Spenard" at the Whitekey's Fly By Night Club with their ten Spam gourmet entrees were great. The train ride through the fantastic Alaska scenery made the conference extra special and will long be remembered by those who attended. I will never look at a can of Spam with the same indifference as I did before the Alaska conference.

I believe the NWAFS has an obligation to hold conferences in locations removed from Seattle of Portland on a frequent basis so that our membership at more remote locations can benefit from the training and networking the NWAFS can provide its membership. It is true that conferences at locations like Seattle and Portland are very successful and well attended and the NWAFS benefits financially from conferences being held there. It is my opinion the purpose of our organization is not to hold conferences at locations where they can always make money but to be a service to our membership by providing training, information, and networking opportunities to as many of our members as possible. Hope to see many of you at the fall NWAFS conference in Cheyenne Wyoming. Bill Adrian and Tilton Davis and the Wyoming staff have already done a lot of work to guarantee a great program for the Conference. I am sure when you see the proposed workshops and activities you will be motivated to obtain approval to attend.

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Editor's Message

Pay My Own What??

I'd like to spout off in this issue about paying your own way. As meetings and training come and go there comes a time when each individual must determine which is more important—the paycheck or the career. Obviously, the agencies represented collectively by the NWAFS cannot support all people to all meeting especially when one considers opportunities other than NWAFS such as AAFS, AFTE, Intermicro, IAI, Pittcon etc. etc, etc. Knowing this ahead of time I feel that at some point each individual should consider paying their own way to a conference or meeting.

In making this effort, I can only implore the agencies to assist in ways they can by specifically providing partial support in the form of registration only, airfare only or time only. Not only does this partial support provide a good compromise, it can assist the agency in meeting relatively low cost training requirements.

If one considers the private, non-State or government supported scientist, one can begin to realize what a good deal even partial support to attend a meeting can be. In being a competent scientist, interaction with the scientific community is essential. The best way to accomplish this interaction is to attend scientific meetings. If writing a paper or presenting a poster will help get you support--then do it! Remember, you have chosen Science as your profession and as such you must take some responsibility at maintaining *YOURSELF* at the highest possible level.

As the old saying goes... Don't just stand there—DO SOMETHING— and make an effort to immerse yourself in the science.

Participate!!

-Matthew Noedel, ed.

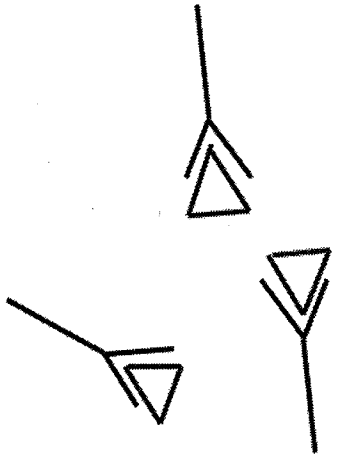
The Evaluation of ABAcard ® HemaTrace™

Theresa F. Spear and Neda Khoskebari
California Criminalistics Institute, 4949 Broadway, A-104, Sacramento, CA 95820

Introduction

The HemaTrace test was evaluated as a tool to characterize biological samples typically encountered as evidence. Our study focussed on the specificity and sensitivity of this test. As described by the manufacturer, Abacus Diagnostics, the ABAcard HemaTrace test is designed to be used as a "confirmatory test for human (primate) blood" in "forensic casework laboratories." This test is described as a "rapid immunochromatographic test" which offers "extremely high sensitivity and specificity" and is capable of detecting trace levels of human hemoglobin. The test has been characterized by the Manufacturer as: "Specific to human blood/ No interferences/Validated for forensic use".

The HemaTrace is simple to perform. The HemaTrace test is a plastic card with two "windows". One of these windows allows the sample to be applied to the test membrane and the other window permits the analyst to view the antigen-antibody reactions. The sample can be extracted in a buffer solution provided by the Manufacturer. The test requires 150ul of this stain extract to be added to the sample ("S") well of the test device. Thus, the minimal amount of buffer solution to extract the stain should be at least 150ul. After this solution is added to the sample well, it migrates across the test device membrane to the test area where an immobilized (monoclonal) antihuman hemoglobin antibody captures the first antigen-antihuman hemoglobin antibody (presumably formed in or near the "S" well). This reaction (an antibody-antigen-antibody sandwich) is visualized as a purple-colored band formed by a dye attached to the mobile antibody. Above the test area (marked "T" on the device) is a control area (marked "C" on the device) which captures unbound mobile antibody. The control band (which controls for proper sample migration) needs to be visible in order to interpret a test result.



One previous study done to evaluate this test (Evaluation of the ABAcard HemaTrace for the Forensic Identification of Human Blood by C. Swander and J. Stites) was supplied by the Manufacturer. This study evaluated the HemaTrace test using: (1) samples from a serial dilution of human blood, (2) a limited number of animal bloods, (3) human body fluids other than bloods, (4)"conditioned blood" or blood samples "subjected to conditions commonly encountered at crime scenes and in the laboratory" and (5)bloodstains produced from a set of serially diluted bloods. In general, this study reported that HemaTrace was significantly more sensitive than the Ouchterlony technique (the HemaTrace test produced positive results on blood diluted more than 1 to 1,000,000 compared to Ouchterlony which produced positive results on blood diluted a little more than 1 to 1,000). Further they found that washed and bleached stains could still elicit a positive HemaTrace result (where Ouchterlony did not). Also, samples treated with various presumptive test reagents and dyes produced a positive HemaTrace result (as did the Ouchterlony test). As far as the bloodstains (produced from a set of serially diluted blood), the HemaTrace test was more sensitive than the presumptive test reagents: Hemastix and TMB. The HemaTrace test only produced positive reactions from bloodstains diluted approximately 1:32,000 (compared to the positive results obtained from liquid blood diluted more than 1:1,00,000). As far as specificity was concerned, this study reported no HemaTrace positive results with deer, cow, pig, horse, dog or cat blood. Finally, the authors state that: "Human saliva and urine stains also gave negative results". They do not indicate how many samples were tested.

In the present study, we evaluated both the sensitivity and specificity of the HemaTrace using human bloods, human body fluids (urine, saliva, semen-free vaginal swabs and semen), and animal bloods. Most of the samples were prepared by saturating a cotton swab with the sample and allowing it to dry. The samples were

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stored frozen until they were extracted with 100 ul of deionized water, placed into a spin basket and centrifuged to recover a fairly concentrated body fluid stain extract. For most of the samples in this study, 10ul of this water extract was then added to 450ul of the supplied buffer. When liquid blood was tested, the serial dilutions were made in the supplied buffer solution. The final step was to add 150ul of the sample (in the buffer solution) to the test device. The test results were recorded at 2 minutes, 5 minutes and 10 minutes after sample addition. Test results should not be read after 10 minutes (some animal samples will produce a false positive reaction after this time). A control line was obtained with all of the tests run during this study and all of the test results were interpreted. None of the "blank" samples (containing water and the supplied buffer) showed a positive test result.

Sensitivity

Positive test results were obtained on a liquid blood sample diluted 1:1,000,000. At the 1:10,000,000 dilution, a negative test result was obtained. This demonstrates that this test is very sensitive. In addition, positive results were obtained on six different human bloodstains which had been held frozen from 4 to 10 years.

Specificity

Bloodstains were made from the following 15 animals: beef, cat, chicken, dog, ferret, iguana, horse, mouse, parrot, pork, rabbit, sheep, squirrel monkey, tortoise and turkey. Only the sample from the squirrel monkey (primate blood) gave a positive reaction.

Body fluids (other than blood) were then tested with the HemaTrace test. Significantly, positive reactions were obtained from 8 out of the 9 saliva samples, 3 out of the 3 semen samples and 3 out of the 5 semen -free vaginal swabs. Four of these body fluids were then diluted 1:10 and re-tested with the HemaTrace test. All of the 4 samples (two saliva samples, 1 semen- free vaginal sample and 1 semen sample) still gave positive results. None of the 8 urine samples that were tested produced a positive reaction with the HemaTrace test.

Discussion

This test is easy to perform and requires a minimal amount of equipment (centrifuge, timer and pipettes). The instructions that are included with the kit warn of a "High Dose Hook Effect" which may result in a false negative result if the sample is too concentrated. As in any test relying upon an immunological reaction, if the antigen concentration in the sample is too concentrated, the antigen will saturate the antibody and prevent the "antibody-antigen-antibody" sandwich from forming. This will result in a false negative reaction. In the course of this study, we did not encounter this situation, even when we used blood sample extracts that were a dark reddish-brown in color (then diluted with the supplied buffer). As a general guideline, an analyst should not test (place in the "S" well) a bloodstain extract that was significantly more colored than what would be appropriate for an Ouchterlony test (e.g. straw colored).

....."Due to the extreme sensitivity of the test, trace levels of hemoglobin might be detected occasionally in body fluid(s) samples other than blood..."

This test is also easy to interpret: a purple line at the control test area and at the test area is a positive result. A valid, negative result is a single purple line at the control area. Unfortunately the disadvantage to this easy-to-interpret, yes/no format is that there is no opportunity to grade the positive reaction to gauge how much antigen (presumably hemoglobin) is present in the sample being detected. This is somewhat problematic since body fluids (other than blood) routinely give a positive reaction with this test. It is not uncommon to encounter body fluids (other than blood) which give positive presumptive tests for blood. These samples typically do not show the characteristic reddish-brown color associated with blood. The most likely explanation for these test results is that body fluids (e.g. saliva, semen, and vaginal samples) do contain trace levels of blood. This can create a problem in interpreting a very sensitive test for a human blood component such as HemaTrace. Specifically, if a sample, other than blood, produces a positive test result, can you unequivocally say that sample is identified as human blood? Abacus Diagnostics warns of this situations in the product instruction sheet when it states: (1) "Even if the test result is positive, careful forensic judgment should be made in conjunction with other information available from other testing and diagnostic procedures" and (2) "Due to the extreme sensi-

tivity of the test, trace levels of hemoglobin might be detected occasionally in body fluids samples other than blood (e.g. urine, semen, stool, vaginal fluid, perspiration). However knowing this fact, this limitation has no practical impact in vast majority of cases." Clearly then, if an analyst is to interpret a positive reaction from a HemaTrace device as meaning that a stain is (or contains) human blood, it will be done in the context of the visual appearance of that stain and chemical or microscopic tests. Unfortunately, the very samples that might require the sensitivity of HemaTrace test (e.g. washed/diluted bloodstains) will also be the samples where these tests (color/presumptive/microscopic tests) fail due to the marginal nature of the sample.

Theoretically, one of the benefits of the HemaTrace over a conventional species test is that the antibody used in the test device is raised against human hemoglobin. Since hemoglobin is a primary constituent of blood, this test is designed to identify a sample as human blood. Most antisera used in forensic species test are raised against more than one human serum protein. It is very common to find that species tests will produce a positive reaction to a wide range of human body fluids (e.g. semen, saliva and blood). Based on a species test, the analyst only knows that the stain is of human origin. The standard species test does not identify the type of body fluid being tested.

Given that the HemaTrace test produces positive results with body fluids other the blood, the only way to claim that it is specific for human blood would be to obtain negative test results with all of the non-hemoglobin constituents of common human body fluids. Without testing the HemaTrace device against a complete bank of human proteins found in all common human body fluids, it is not possible to state unequivocally that the antibodies used in this device are specific for human hemoglobin. If an analyst chooses to use a HemaTrace test to help characterize a biological sample, it will be important to remember to interpret the test result in the context of the standard tests used to characterize body fluids. The primary advantage of this test is its sensitivity. Blood can be diluted 1:1,000,000 and still elicit a positive test result.

The cost of each test device is approximately $3.50/test. The ordering information is as follows: OneStep ABAcard HemaTrace (Blood) (25 tests/kit) Abacus Diagnostics, 6520 Platt Ave. #220, West Hills, CA 91307 Attention: M/S P-31-N. Phone (818) 716-4735.

Acknowledgement: The staffs of the BFS-Fresno Laboratory and the BFS-Riverside Laboratory supplied many of the samples needed to perform this evaluation.

Board of Directors Meeting Minutes

Anchorage, Alaska 8 P.M. 4/20/99

Present: Arnold Melnikoff, Linton von Beroldinger, Roger Ely, Matthew Noedel

Meeting minutes from Sun Valley approved as published.

Secretary Treasurer Report:

-Linton has opened a bank account near Salem (close to his office).

-transferred all accounts
-Dryfus fund ~$18,000
-total ~$40,000

Editorial Secretary Report:

-some problems with current publisher
-agree to fund "Caption This" and perhaps reward top three

Technical Resources Report:

(Arnie Melnikoff for Lisa Caughlin)

The "News and Reviews" committee got off to a slow start with only Gary Knowles submitting an article to Matt Noedel for publication in the newsletter. I have since e-mailed the group and we should be more prolific (in articles that is) in the next quarter.

The "Seminar Planning" committee is working on the development of a workshop evaluation form hopefully to be implemented at the Cheyenne meeting. This will aid us in determining which workshops and instructors are useful in repeating. I have also asked Roger Ely to develop a database in which we can track the workshops, instructors and their evaluation information for later use. Hopefully this will be online by the Cheyenne meeting as well.

Membership Secretary Report

-Three members of the Committee were replaced this year, and will serve a two-year term: Nici Wanek, and Steve Taormina will join Julie Doerr and Ann Bradley to round out the Committee at 4

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members.

-There is a terrible lack of communication between the members and the Membership Secretary.

-The following members have submitted letters, email, or phone calls indicating their resignation:

Andre Koch .....S. African Police Forensic Lab
Rupert Page.....Student
Scott Kashuba.....RCMP Laboratory
Allan Gilmore..... Retired-Sacramento, CA
Edward Butvidas.....Kansas City PD Crime Lab
Steven Sottolano.....DEA Western Lab
Eydie Johnson .....DEA Southwest Lab

-At this time, I have received nearly all dues for the year 1999. Twenty-one members, not counting the 4 who are proffered for termination, have not yet paid their dues leaving an outstanding amount of $945 due.

-Termination For Non-Payment of Dues:
Pursuant to Chapter 1: Membership of the Association Bylaws the Committee recommends to the Membership of the Association the following members be terminated for non-payment of dues:

Judy Hoffmann MT Division of Forensic Sciences
David Predmore WA State Toxicology Lab
Dawn Sorenson NIS Regional Laboratory

-New Member Applications
I have received several applications for membership in the Association.

Boaz, James C WSP Crime Lab – Marysville
Fitch, Kelly Phoenix PD Crime Lab, AR
Homan, Tom OSP Forensic Lab – Portland
Hopkins, Barbara UT State Crime Lab – Salt Lake
Jenkins, Kevin WSP Crime Lab – Spokane
McDaniel, Scott UT State Crime Lab
Samuelson, Leland OSP Forensic Lab – Portland
Koppenhaver, David J IN State Police Lab –

-Nominations For Officers – 1999
This year, we will need to find a candidate for Member-At-Large and Membership Secretary. The membership secretary candidate should have strong computer skills.

Old Business

Update Wyoming Meeting: Arnie Melnikoff
-law enforcement combo
-many workshops
-what happened to the NAFTA positioning
--Is still Involved.

ABC Board Position-ABC has filled all positions with other members—NWAFS does not have member on their board

Min quals for presentations—about dead issue will let die as it seems to have been an isolated incident

New Business

Awarding Life Member Issues
-Requirements are in bylaws
-Rely on std and past practice
-in addition we will send letter to supervisor/administration so all legalities can be dealt with. As of today (4/20/99) we will send notification to life member and to supervisor.

Meeting NWAFS in Western Washington—preliminary acceptance, since likely not a quorum to vote on will accept at this level so planning for this meeting can go forward.

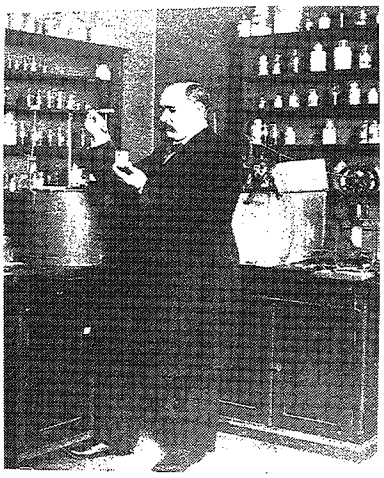
Do we need to spend $$$?—YES
-should we pay CCI tuition –Yes will develop classes and schedules
-send Linton info on tax requirements
-purchase laptop for secretary treasurer ~$2000

Can we have business meting? Will hold but may not vote.**

Meeting ended at 9:30 P.M 4/20/99

**(Due to an insufficient number of voting members present, no official business meeting was held).

NORTHWEST NOTES



Editor's Note: It was brought to my attention that the photo at left was positioned next to Arnold Melnikoff's presidential message in the last issue, and some may have thought that this gentleman was actually Arnie!

. . . . .

To clarify—any resemblance between the current NWAFS president and the gentleman pictured above is purely co-incidental. The current NWAFS president is no gentleman!

Upcoming Meetings:

Cheyenne, Wyoming—
September 27-October 1, 1999.

Look for a great program to include:
-Science *and* Law Enforcement Program
-Old West Museum Dinner
-Tour an Air Force missile silo
-Ridin' n Ropin' demo & seminar

* * * *

Sacramento, California—
May 15th - 19th, 2000.
Lots of workshops and an appealing array of "Hawaiian" social events.

NWAFS Homepage-Check out links to other members, abstracts, and exciting meetinginformation—

http://users.aol.com/lctox/nwafshome.htm

The Newsletter needs your contribution!

Got an interesting technical note, new procedure, or research project? Send an article in and you could win ***FREE REGISTRATION*** to an upcoming NWAFS meeting. (That can save you $200-$250 or more!!!

The officers vote for the best independent Newsletter submission once a year and award a **FREE REGISTRATION** to the winner. Help keep the Newsletter interesting and informative by sending technical notes, research, or interesting cases to:

Matt Noedel (editor) mnoedel@wsp.wa.gov
2502 112th Street East
Crime Laboratory—2nd Floor
Tacoma Wa. 98445-5104
(253)-536-4296

Plan Ahead—
The Fall 2000 meeting is currently being planned for the Puget Sound Area,

Washington—
October, 2000

Y2K and the Forensic Laboratory

Is your laboratory ready for the Year 2000? Two years ago I was assigned the title of Y2K Coordinator for the Sacramento County Laboratory of Forensic Services. In the past two years I have learned more than I ever wanted to know about Y2K and computers in general. I would like to share some of the tips I have learned so that it may save you some time in your preparation for the end of the year.

Our county requires that all PC's be Y2K compliant, even if they do not have any date calculation functions. This meant that almost every piece of instrumentation in our laboratory needed a fix, since most of them ran off of 486 MHz processors and failed one or more of the three Y2K tests. (If you would like to find out more information about the Y2K PC tests please see the NSTL web site for a Y2K test file to download).

Now for those of you who have several instruments and other PC driven processes in your laboratory you know this has now become a monumental task. Here's the approach that I used and would recommend for others. First, become organized and decide how you will maintain and store the information. I asked Roger Ely to help me design a Microsoft Access database to record and store our laboratories information. As usual Roger did a tremendous job on the database and it serves our needs quite well. We can print out reports for the County officers upon demand and can sort it by unit, section, type of instrument etc.

After organizing the instruments into vendor sorted categories, I then searched the instrument company web sites for their Y2K information. Most of the major corporations have a listing of their products and their Y2K compliance information. This information is often updated daily, so don't rely on it completely. Our county required a written vendor statement from each company stating the Y2K compliance information on it, including who is responsible for any costs associated with upgrades, replacement items etc. This meant A LOT of phone calls to several vendors.

The end result of all of my phone calls resulted in a cost of about $150,000 for our laboratory to become Y2K compliant for instrumentation only. This included patches for software, complete replacement of our BA instrument, and new PCs to run the upgraded software. Call your local vendor for specific information regarding your laboratory.

Now, you may think that you're done after you catalog your instrumentation, but it is just beginning at that point. We soon discovered that our laboratory security system (that was installed in our NEW building three years ago) is not going to function on January 1, 2000. This means another costly replacement item for the building. Other systems you need to check out are fire alarms, elevators, energy management systems (heating/air/freezers/refrigerators/lighting), telecommunications, networks, case management systems and your local energy providers.

Finally, have a contingency plan ready to go for your laboratory in the event the power is off for and extended period of time, your internal systems fail and other unplanned catastrophes occur. Happy planning and enjoy your Year of the Dragon!

--Lisa Caughlin--Sacramento County Laboratory of Forensic Services

ABSTRACTS FROM ANCHORAGE SPRING 1999 MEETING

Serendipity Purification of Psilocyn

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A chance observation resulted in the conclusion that an impure extract of mushrooms containing psilocyn while being analyzed on a FTIR spectrometer underwent a spontaneous purification. This spontaneous purification was shown to be reproducible in several subsequent extracts of mushrooms from different cases.

This paper will present FTIR spectra of the spontaneous purification of psilocyn extracts as well as a discussion of the research which was conducted to try to explain this phenomena.

Improved Analysis of Highly Degraded Forensic Specimens by "Mini-Primer Set" mtDNA Amplification and Sequence Analysis

Mark J. Wadhams*, MS, Matthew N. Gabriel, M.F.S., John H. Ryan, Ph.D., Suzanne M. Barritt, MFS, Richard E. Wilson, MFS, Edwin F. Huffine, MS, Thomas J. Parsons, Ph.D., and Mitchell M. Holland, Ph.D.
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The opinions and assertions expressed herein are solely those of the authors and are not to be construed as official or as the views of the United States Department of Defense or the United States Department of the Army.

The Armed Forces DNA Identification Laboratory (AFDIL) was established to aid in the identification of American service members missing from previous military conflicts, such as Southeast Asia, Korea, Cold War, and World War II, by using mitochondrial DNA (mtDNA) analysis. The skeletal remains that are recovered after 25-40 years have been exposed to extreme environmental insult yielding highly degraded DNA and overall loss of DNA. For these highly degraded specimens, mtDNA is often the only DNA obtained.

Currently, two Hypervariable Regions (HV1 and HV2) of the mtDNA displacement loop are amplified using four pairs of overlapping primer sets, each producing an amplicon of approximately 250 base pairs. Using this amplification and sequencing scheme, approximately 80-85% of the cases analyzed produce reportable sequence information. The remaining 15-20% of the specimens tested in our laboratory produce no mtDNA sequence data for numerous reasons. These reasons include the possibility that the template DNA may not contain DNA fragments of sufficient length to span the distance between primers, or that low level contamination with modern DNA could overshadow the ancient DNA sequences. It has been demonstrated that decreasing the amplicon size from approximately 250 bases down to approximately 100 bases in length can dramatically increase the number of relative amplifiable units contained within a severely degraded specimen (Handt et al., Am. J. Hum. Genet. 59:368-376, 1996). This fact can greatly increase the rate of successful amplification for DNA extracts that contain damaged or highly degraded DNA. The number of relative amplifiable units is also important to the quality of amplification

results. Amplifying damaged DNA from a low number of relative amplifiable units can lead to irreproducible PCR results due to PCR mispriming in an early cycle or misincorporation of bases due to a damaged DNA substrate. Finally, while decreasing the size of the amplicon should dramatically increase the number of relative amplifiable units of degraded DNA, the number of relative amplifiable units for the modern contaminating DNA should stay relatively constant. Therefore by reducing the amplicon size, the effects of low level contamination by modern DNA may be reduced.

An amplification scheme utilizing a number of overlapping mini-primer sets is being actively pursued in our laboratory. Conditions were optimized for each MPS, using serial dilutions of a known mtDNA control. The sensitivity of the MPS was compared to the current primer sets using pristine DNA. The MPS's were then tested on bone extracts that previously gave full sequence to samples that generated no sequence. Data will be presented that demonstrates the suitability of these mini-primer sets to be used for casework.

The Forensic Examination of Benzylpiperazine and Phenylpiperazine Homologs

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A little over two years ago, an individual operating a chemical supply firm in Santa Barbara, California, noted a paragraph in the book *"Phenethylamines I Have Known and Loved (PIHKAL)"* (A. Shulgin and A. Shulgin, Transform Press, 1992) referring to the possible pharmacological activity of benzylpiperazine in man. Over the course of the next several months, this individual offered benzylpiperazine and several other ring-substituted phenylpiperazine homologs for sale via his World Wide Web site. In addition, this individual shared his personal experiences taking these substances, while thinly disguising the ingestion of these materials as "accidental," using the Internet newsgroup *alt.drugs.chemistry.*

In November of 1997, a sample of powder seized by a local Pennsylvania police department was examined by National Medical Services in Willow Grove, Pennsylvania, and identified as benzylpiperazine. Around this time, the chemical supplier and his girlfriend were arrested for assaulting an airline crew and the business folded.

More recently, discussions in the Internet discussion group *alt.drugs.chemistry* suggest a renewed interest in these compounds. As such, analytical data for benzylpiperazine and its homologs is not readily available to the forensic community.

The authors have examined benzylpiperazine and 6 other phenylpiperazine homologs using common color screening tests, thin-layer chromatography, infrared spectrophotometry, gas chromatography-mass spectrometry, and gas chromatography-infrared spectrophotometry. A booklet containing this analytical data will be provided to the attendee.

The Development of a Laboratory Information Management System (LIMS): One Laboratory's Trials and Tribulations

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A Laboratory Information Management System (LIMS) has the potential to increase laboratory productivity and efficiency through the use of more stream lined computer software. The Armed Forces DNA Identification Laboratory has been developing its own LIMS over the past several years. Once fully functional, laboratory analysis will be almost totally automated and virtually

paperless. All aspects of our cases, from evidence receipt until final evidence disposition, will be tracked within the LIMS. Not only will evidence transfers be recorded, but the system will also track each laboratory processing step involved with a case. All of our forms have been computerized and workstations have been installed in all of our laboratories. While this system does have the potential for increasing laboratory productivity and efficiency, we did encounter several "road blocks" that needed to be addressed. These obstacles included security issues, chain of custody and user friendliness of the system. Specific details of our system as well as problems that we encountered will be presented in more detail.

Lead Patterns Observed in Ricochets

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One explanation for the presence of vaporous lead in the absence of supporting gunpowder particles or Nitrites is ricochet. Experiments exploring this phenomenon in the context of Seattle Washington's worst drive-by shooting are presented.

Victim Sexual Assault Kits—Survey of Laboratory Findings

Janeice Amick
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This presentation surveys the laboratory results from victim sexual assault kits processed over a 2½ year time period. The purpose of the survey was two-fold: (1) to determine the number of cases in which foreign hair was found in the victim's pubic hair combings and how this related to sperm findings, and (2) to determine the value of examining panties when the victim's vaginal/rectal samples were negative for sperm.

This study surveyed more than 150 sexual assault cases involving adult female victims. Those cases classified as sexual homicide or sexual abuse of a minor were not included.

Pubic hair combings were submitted from approximately 120 women; close to 6% of the samples contained foreign hairs. The foreign hairs were found to be "significant" (similar to the suspect) in about half of these instances. In addition, each case with significant foreign hair also contained sperm in the vaginal sample or on the panties. In all of the cases where this sperm was subjected to

CAPTION THIS!

O.K. folks—back by popular demand here's another chance for you to win a pound of Starbuck's coffee.

Provide a caption for the picture at left and submit by e-mail to:

mnoedel@wsp.wa.gov

Editor's decision is final.

DNA typing, the suspect was included as a possible source of the sperm.

Vaginal samples were collected from each woman included in the survey; sperm were detected in approximately half of the cases. Nearly 100 rectal samples were examined; sperm was detected in roughly 30% of these samples. Panties were examined when the vaginal/rectal samples were negative for sperm. Approximately forty pairs of panties were examined for this reason. Sperm were detected on about 36% of the panties. In 3 of these cases, DNA typing included the suspect as a source of the sperm.

Silica vs. Polymer Based Solid Phase Extraction and Solid Support Liquid/ Liquid Extractions: A Comparison of Techniques

Max Erwine
(800) 926-3000 donna.sellman@sgl..varian.com
Varian
2700 Mitchell Drive
Walnut Creek, CA 94598

Rapid Confirmation of Hallucinogens After Minimal Sample Preparation by GC/MS and GC/MS/MS

Cheryl Ann Ehorn
(800) 926-3000 donna.sellman@sgl.varian.com
Varian
2700 Mitchell Drive
Walnut Creek, CA 94598

Digital and Analog Imaging for Law Enforcement

Alan Myers
(425) 837-8856 or armyers@kodak.com
Eastman Kodak Co.
Area Manager Law Enforcement Markets
14611 245th Street SE
Issaquah, WA 98027-8326

An overview of both digital and analog photography within the law enforcement community. The emphasis will be on digital imaging and the surrounding issues such as equipment, reproduction, access, and retrieval software plus the legality issues. A hands-on session would be possible if interest exists. This presentation will be complementary to the FBI digital imaging workshop, which will emphasize the use of video and surveillance methods while the Kodak presentation will emphasize still photography, particularly at crime scenes or for documentation.

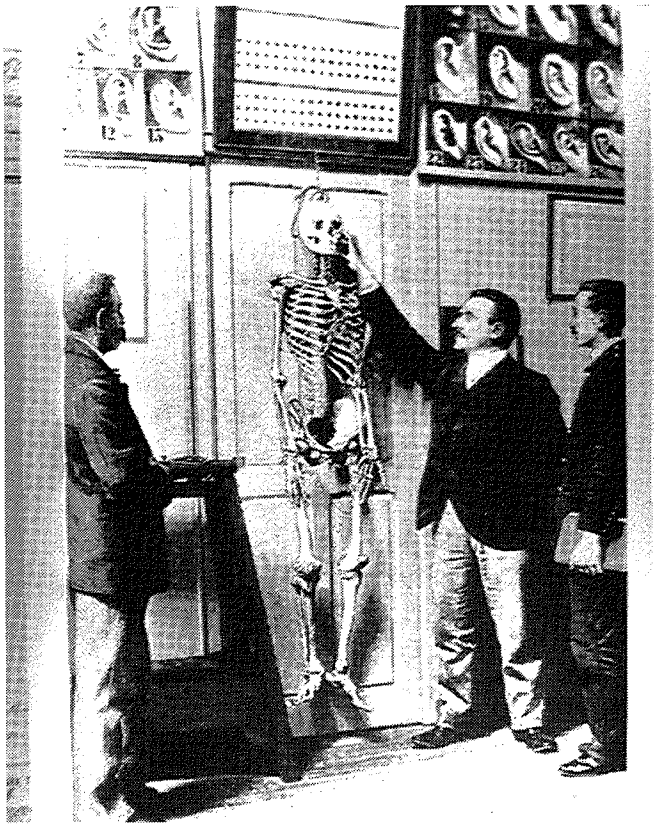
National Law Enforcement and Corrections Technology Center

Dave Hart
Information Services Coordinator
National Law Enforcement and Corrections Technology Center
(800) 248-2742 / (301) 519-5439
dahart@nlectc.org
2277 Research Blvd., MS 8J
Rockville, MD 208050

The National Law Enforcement and Corrections Technology Center (NLECTC) is a program of the National Institute of Justice (NIJ) Office of Science and Technology (OS&T). NLECTC provides criminal justice (law enforcement, corrections, and the courts) professionals with information on technology, guidelines and standards for these technologies, objective testing data, and science and engineering advice and support to implement these technologies.

The NLECTC system includes the national center in Rockville, Maryland, and four regional centers operating in Charleston, South Carolina (Southeastern Region); Denver, Colorado (Rocky Mountain Region); El Segundo, California (Western Region); and Rome, New York (Northeastern Region). Also included in the system are four special offices: the Office of Law Enforcement Standards (OLES), the Office of Law Enforcement Technology Commercialization (OLETC), the Border Research and Technology Center (BRTC), and the National Center for Forensic Sciences.

CAPTION THIS !



Win a pound of Starbucks Premium Coffee!!

And The Winner is.....
.....**John Bowden** with:

"Look here! I found a quarter!!!"

Honerable Mention:

I've got a bone to pick with you.
-Jerry Massetti
and

Oooh, is that Ellen? (I heard she'd come out of the closet.)
-Daniel Petersen

About the Newsletter...

The Newsletter is the official publication of the Northwest Association of Forensic Scientists. It is published 4 times a year in the months of January, April, July, and October. The Newsletter welcomes submissions from its membership such as technical tips, case studies, literature compilations, workshop or training notifications, reference citations, commentary, historical accounts, and other topics of interest to the membership. While not currently required, please submit material for publication in Microsoft Word for Windows format as an e-mail attachment or on a 3.5" floppy disk. For more information regarding the Newsletter contact

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(253)-536-4296
fax (253)-536-4290

mnoedel@wsp.wa.gov

Association for Crime Scene Reconstruction

9th INTERNATIONAL TRAINING CONFERENCE Date: September 10-12, 1999 Place: Marriott Hotel, Overland Park, Kansas City, Kansas, USA Cost: $225/members - $250/non-members--Contact

Ross Gardner Conference Chairman

770-477-5107

Email: 100022.1453@compuserve.com

ICITAP

International Criminal Investigative Training Assistance Program

Forensic Development Unit

The Forensic Development Unit is requesting the assistance of the forensic community in achieving ICITAP's goal of assisting project countries in establishing a system of justice based on forensic principles and the use of physical evidence.

On Site Training and Evaluation

ICITAP provides on site training in all aspects of forensic science to the forensic personnel in developing nations. Topics include an overview of forensic investigative techniques, basic crime scene processing, crime scene photography, latent finger prints, conventional serology, firearms and tool mark identification, trace analysis and forensic chemistry as well as on site evaluations and needs assessments.

Contact the ICITAP Forensic Development Unit if you have a teaching and/or a language ability and would like to share your knowledge with your counterparts in our project countries.

Internships

Part of the Forensic Development Unit's training philosophy is to provide 3 month internships to selected individuals from our project countries. We are currently looking for laboratories to host interns in: conventional serology, firearms and tool marks, toxicology, fingerprint examinations, crime scene processing, crime scene photography, drug analysis, pathology and questioned documents.

If you are interested in assisting ICITAP's Forensic Development Unit contact:
Donnell Christian, Forensic Coordinator
International Criminal Investigative Training Assistance Program
1331 F Street, Suite 500
Washington DC 20004

phone 202-305-4255
fax 202-305-4273
e-mail donnell.christian@usdoj.gov

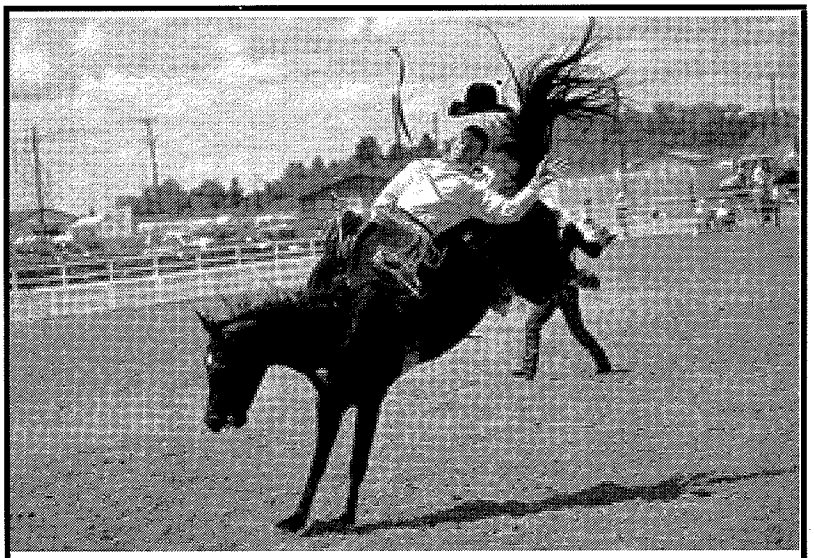
The ATF Forensic Laboratory - San Francisco has announced a job opening for the position of Firearms and Toolmark Examiner (GS9/11/12) at our Walnut Creek Forensic Laboratory. The job requirements, application information, forms, and salary ranges may be found on the ATF "Jobs" page found on: http://www.atf.treas.gov/jobs/list.htm Note: The closing date is October 4, 1999. You must be a U.S. citizen to apply.

Robert M. Thompson Senior Firearms and Toolmark Examiner Alcohol, Tobacco and Firearms Forensic Science Laboratory-San Francisco Telephone (510)486-3170 FAX (510)486-3166

E-mail RMThompson@sfdi.atf.treas.gov

NWAFS FALL 1999 MEETING CHEYENNE, WY

Sept. 27 thru Oct. 1



"Wild" Bill Adrian, next NWFS President, begins to prepare to take the reigns at the Cheyenne meeting.

Confirm Early at the Best Western Hitching Post Inn

Plan ahead to get into valuable and interesting work-shops!!

Look for meeting and event information in the mail and be sure to take advantage of the great program!!!

NWAFS Golf Tournament

1:00PM

SUNDAY MAY 14, 2000

Join us for the 1st NWAFS golf tourney. It will be a shotgun start best ball 4 man scramble. We need to get a head count to see how many people are interested, so give me a call and let me know. This will precede the Spring meeting in Sacto, May 2000.

CALL FOR MORE INFO:

LISA CAUGHLIN, SACRAMENTO COUNTY LABORATORY OF FORENSIC SERVICES
4800 BROADWAY SUITE 200, SCRAMENTO, CA 95820, 916-874-9240