NEWSLETTER

CALIFORNIA ASSOCIATION CRIMINALISTS

FIAT JUSTITIA PER SCIENTIAM

OCTOBER 1991

A MESSAGE FROM THE PRESIDENT

As the summer season winds down, it means the fall seminar is just around the corner. From the advance notices, it appears San Bernardino is putting together an outstanding program. Hopefully, many of you will have the opportunity to attend.

The Seminar Committee and I have been working to line up host laboratories for future seminars. We are grateful to those laboratories who have agreed to host a seminar in the future. From experience I know it is a lot of work, and I empathize with the reluctance to take on additional work. But the seminars play an important role in the professional growth of our members, and I hope the management and staff in each laboratory consider it part of their professional responsibility to help provide opportunities for that growth. If your laboratory has never hosted a seminar or hasn't hosted one in many years, seriously consider being the host for a future seminar.

The Seminar Committee is available to offer guidance and to pass on the knowledge that we have gained from previous seminars. All the members of the committee have worked on previous seminars and have a wealth of information on seminar planning. The chair of any upcoming seminar automatically becomes a member of the committee and is invited to the semi-annual meetings. In this way we have been able to make it a little easier for those who have agreed to host a seminar.

Unfortunately, the certification-related suit against the CAC continues. The plaintiff has not agreed to drop the suit, so the legal process drags on. On a positive note, the CAC will again give its certification exam at the annual AAFS meeting which will be in February in New Orleans.

The Nominating Committee has begun its search for members who are interested in serving on the Board of Directors. If you are interested or would like to recommend someone to the Committee, please contact Susan Narveson at 602-223-2394. The offices up for election are President-Elect, Secretary, Membership Secretary, and Regional Director-North.

The DNA Quality Assurance Committee is preparing a letter to be sent to Congressman Edwards expressing CAC's objections to the pending federal legislation regarding forensic DNA proficiency testing.

That's all for now. Hope to see many of you in Ontario!

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JOHN R. PATTY

Supervising Criminalist

"Lingo, you have to learn the lingo", John told me years ago. "Every profession has its own language. The Crime Lab interacts with many agencies. You need to learn the language so that you can relate." I soon discovered that learning the "lingo" was only one example of John's tremendous enthusiasm for every aspect of his life including work. This penchant for "lingo" inspired his nickname - JP. Since John seemed to be able to speak entire sentences in code and abbreviations, his co-workers abbreviated his name. First to JRP (Jerp) and finally shortened to JP.

John's enthusiasm was present in everything he did. Church, family, work, CAC and DSA (Deputy Sheriff's Association) all received his endless attention and devotion. John had a penchant for ACTION. He wanted to know how things worked and if he could make them work better. If not, he was happy just to help keep them going.

John started at the Contra Costa County Criminalistic Laboratory as a student intern in 1973. He learned how everything worked. He just had to help the laboratory to function as smoothly as possible. He became a Criminalist the following year. This need for action and smooth sailing made John seem like a man in perpetual motion. Nothing was too small or inconsequential to escape his eye. However, he seemed to enjoy processing crime scenes the most. Scenes provided him the opportunity to use all of his education, training and observational skills. They also gave him the chance to meet people. John really excelled at working with people.

When John was promoted to Supervising Criminalist in 1983, the excellent rapport and relationship he had built with people throughout the county was evident. He seemed to know everyone. He could rattle off any investigator's phone number because of a prior contact six months ago. We would jokingly call him Mr. Shoephone. John was always (and I mean always) available by phone. Remarkably, he seemed to be able to solve almost any problem with a telephone call. Multi-jurisdictional cases were made to look easy. He loved it all. From processing crime scenes to riding with patrol, he loved every aspect of law enforcement. John always had a story to tell or scene to recount. He was willing to share his experience at any time and any place.

This willingness to share, I'm sure fostered his interest in teaching. John team taught a well thought out and well thought of class on evidence and the crime lab with John Murdock at Diablo Valley College. Many people in the county benefitted from this class. Part of John will go on through this shared knowledge. John also showed his interest in training at a Criminalistic level by his lengthy participation on the Training and Resources Committee with the California Association of Criminalists. John was instrumental in the formation and distribution of the abstract binders. John was one of the first laboratory managers to take and pass the CAC Certification examination. John was also committed to the CAC in supporting his staff's involvement in committees and seminars.

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The DSA had John's full commitment as well. John served on the Board of Directors almost continuously from 1977 to 1989. He organized and kept a watchful eye over the insurance aspects during that time. He served as Secretary (1988), Treasurer (1978, 1979, 1980 and 1982) and President (1983). For his hard work and service to the Association, John received the Jerry Zeller Award (1983). These were all important. However, the most important service was the constant interest that John showed in the membership. He tried to take the time to meet the new members and create that same interest in them.

John's church and family were always present with John. This became most apparent in John's fight with cancer. John was diagnosed as having liver cancer in early 1986. He vowed to fight the cancer with everything he could. He actively participated in his treatment. He learned the "lingo" with great speed. John helped choose a new type of treatment which slowly pumped the chemotherapy on to the tumors. The side-effects of the chemotherapy were greatly reduced by this procedure. This gave John the quality time he wanted with his wife Annette and children John and Cindy. John continued on at work at his perpetual motion pace. In early 1990, the chemotherapy caused John to loose blood. Many of you lined up to donate blood and kept John alive through the bouts of bleeding. I cannot tell you how much this meant to him or how special it made him feel.

Even with all of this, John was always available to help with problems or to give advice. John even served on the Health Care Coalition for the DSA until just recently. He had that need for action.

John died on March 28, 1991 at home. He was where he wanted to be.

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JOHN R. DAVIDSON

1928 - 1991

During the first week of July, 1991, John Robert Davidson passed away. John was employed by the San Bernardino County Sheriff from 1958 until the time of his retirement in 1982.

John graduated from Tulare High School on June 5, 1944, and later attended the Berkeley campus of the University of California. In January, 1949, he received a Bachelor of Science degree in Public Health. He was subsequently employed in the medical laboratories at Fresno Community Hospital in California. John later returned to Berkeley to pursue education in a newborn field called criminalistics. Under the tutelage of Paul Kirk, John obtained another Bachelor of Science degree and pursued graduate studies. In 1957, John served as a teaching assistant for Professor Kirk.

In a letter of recommendation dated June 26, 1958, Professor Kirk stated:

> *As to Mr. Davidson's professional qualifications, I have used him in the investigation of several cases and have found him to be both cooperative and capable. I think that his training and background are completely suitable for the position that is open.*

John became the second criminalist hired by the San Bernardino County Sheriff when he signed the oath of office on August 15, 1958.

He is best remembered for the work that he did in investigations that required the examination of firearms or toolmark evidence. He was instrumental in two famous cases from the 1970's. The "Vinceremos" case blossomed into a statewide investigation originating with the murder of a prison guard during the break-out of a prisoner. John successfully identified ammunition in the suspect's possession as the same type that was used in the prison break. The identification was based upon toolmarks in the cannelures of the bullets.

John was a meticulous and thorough examiner of evidence. A second investigation dubbed the "Norco Bank Robbery" originated in Riverside County and ended in the Lytle Creek area of San Bernardino County. This case involved an extended chase of the suspects and resulted in the death of a Riverside Deputy Sheriff. Literally hundreds of bullet fragments and fired cartridge cases were examined for the trial in this case.

After his retirement, John continued to examine evidence as a consultant for San Bernardino County. He also was an avid collector of firearms magazines and books. During his professional career, John was an active member of the California Association of Criminalists and the Association of Firearm and Toolmark Examiners.

He is survived by two brothers, three nephews and two nieces.

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EMPLOYMENT OPPORTUNITIES

CRIMINALIST III

The Santa Clara County District Attorney's Crime Laboratory is seeking applicants for two Criminalist III positions. Minimum qualifications include an appropriate Bachelor's degree and four years of forensic science experience. Background in serology and trace are needed. Monthly effective salary is $3843 to $4653 (salary increase is currently being negotiated). For further information, contact Benny Del Re, Santa Clara County Crime Laboratory, 1557 Berger Drive, Suite B-2, San Jose, CA 95112,
(408) 299-2220.

FORENSIC SEROLOGIST (Forensic Scientist 2)

The State of Minnesota is seeking applicants for forensic serologist positions with the State of Minnesota, BCA Forensic Science Laboratory in Saint Paul. Qualifications include two years experience as a forensic serologist with a minimum of a Bachelor's degree in Biology, Molecular Biology, Genetics, Biochemistry, Chemistry, Forensic Science (other physical science degrees will be considered). A Master's degree can be substituted for 6 months of experience or a Ph.D can be substituted for 1 year of experience (degree to be in the areas mentioned above). Prefer course work in biochemistry, molecular biology and genetics, experience with DNA analysis techniques is helpful. Scientists appointed to our Biology section will eventually be trained and perform both serology and DNA examinations. Salary range is $31,642 to $43,515. Depending on experience, moving and relocation expenses may be considered for new employees. For further information, contact Frank Dolejsi (pronounced 'Dolish') or Terry Laber at 612-642-0700. Applications will be accepted until further notice.

MEETING ANNOUNCEMENTS

AMERICAN ACADEMY OF FORENSIC SCIENCES
February 17-22, 1992
The 44th Annual Meeting of the American Academy of Forensic Sciences will be held at the Hyatt Regency Hotel in New Orleans, Louisiana. For further information, please contact: Anne H. Warren, AAFS, PO Box 669, Colorado Springs, CO 80901-0669 (719) 636-1100

CALIFORNIA ASSOCIATION OF CRIMINALISTS
May 7-9, 1992
The Semi-Annual Seminar of the California Association of Criminalists will be held in at the Pines Resort at Bass Lake in Madera County. It is being hosted by the Department of Justice, Fresno Regional Laboratory. For further information, please contact: Gary Cortner, Department of Justice, 6014 North Cedar, Fresno, CA 93710 (209) 278-2982

NORTHWEST ASSOCIATION OF FORENSIC SCIENTISTS
May 18-22, 1992
The Semi-Annual Seminar of the Northwest Association of Forensic Scientists will be held at the Nugget Hotel/Casino in Sparks, Nevada, which is just minutes from the Reno Airport. The program will include two days of workshops in specialized areas of criminalistics and two days of technical presentations. For further information, please contact: Floyd Whiting, Washoe County Sheriff's Crime Lab, 911 Parr Blvd., Reno, NV 89512-1000 (702) 328-2800

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ALEX '91 - Analytical Laboratory Equipment Exposition and Conference
October 29-31, 1991
San Jose, CA. Contact: ALEX '91, The Interface Group, 300 First Ave., Needham, MA 02194; (617) 449-6600 x5767.

CALIFORNIA ASSOCIATION OF TOXICOLOGISTS, QUARTERLY MEETING
November 2, 1991
Host: Joseph DiPietri, San Diego, CA. Contact: Bob Fogerson, Pharmchem Labs, 1505 A O'Brian Drive, Menlo Park, CA 94025; (415) 328-6200.

EASTERN ANALYTICAL SYMPOSIUM
November 11-15, 1991
Somerset, NJ. Contact: EAS, P.O. Box 633, Montchanin, DE 19710-0633; (302) 453-0785.

CALIFORNIA SEMINARS IN PATHOLOGY
December 4-7, 1991
Sponsored by the California Society of Pathologists in San Diego, CA. Contact: California Society of Pathologists, 1303 J St., Suite 250, Sacramento, CA 95814; (916) 446-6001.

ANNUAL MEETING OF THE INSTRUMENT SOCIETY OF AMERICA
October 28-31, 1991
Anaheim, CA. Contact: ISA, 67 Alexander Drive, P.O. Box 12277, Research Triangle Park, NC 27709.

CAC SEMI-ANNUAL SEMINARS HOSTS

	SPRING	FALL
1980		DOJ Modesto
1981		Washoe County Sheriff
1982	Orange County Sheriff	DOJ Sacramento
1983	San Francisco PD	San Bernardino Sheriff
1984	DOJ Salinas	San Diego PD
1985	Oakland PD/UC Berkeley	Los Angeles PD
1986	Contra Costa Sheriff	DOJ Riverside
1987	Washoe County Sheriff	Huntington Beach PD
1988	Inst. of Forensic Science	Orange County Sheriff
1989	DOJ Sacramento	Santa Ana PD/Cal Lab
1990	San Mateo Sheriff	Los Angeles Sheriff
1991	San Francisco PD	San Bernardino Sheriff
1992	DOJ Fresno	Ventura Sheriff
1993		San Diego PD

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1991-1992 COMMITTEE ASSIGNMENTS

Please note the following committe changes. An editorial committee has been added to assist the editorial secretary. For a complete listing of 1991-1992 Committee Assignments, refer to the July 1991 CAC Newsletter.

CERTIFICATION
Mary Gibbons - Chair
Gary Cortner
Steve Renteria
Dan Gammie
Jim Stam
Steve Schliebe

EDITORIAL
John Houde - assembly
Paul Sedgwick - meetings & classes

MERCHANDISE
John DeHaan
Carolyn Gannett
Warren Loomis
Patty Lough

CERTIFICATION

Greg Matheson and I have been serving as your representatives to the American Board of Criminalistics, the national group working toward certification. Greg has been working with the Board. I have been working with the Examination Committee.

The CAC has peer groups in the areas of fire debris, drugs, serology, and trace evidence (currently only hairs/fibers) working to develop tests in conjunction with peer groups from other regional associations. Our peer groups are being chaired by John DeHaan, John Bowden, Laurie Rawlinson, and Pete Barnett respectively. Currently the peer groups are in the process of putting together bibliographies for study guides and item writing.

While the tests are being written, the ABC Board has put together a **DRAFT** of the project proposal. This **DRAFT** is herein published along with a questionnaire and recertification worksheets. It is being published while *still* in its *formative* stage so that you may provide input to **fine tune** or **modify** the program proposal. It is lengthy, but worthy of the investment of your time for a critical review. Only with input from potential users, via survey and comment, can this become a viable and supported program. If, for example, you are supportive of the general concepts, but have some difficulty with the handling of a specific part of the proposal, say so. Please identify those areas you think could be improved by making alternative suggestions.

Greg will be giving a full report at the seminar in October. He will include the results of this survey if received by that time.

Please read the proposal before completing the questionnaire.

Dorothy Northey

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CALL FOR NOMINATIONS FOR CAC OFFICERS

The Nominating Committee solicits your nominations for the following offices, the election for which will take place at the California Association of Criminalists' 1992 Spring Seminar.

PRESIDENT-ELECT

RECORDING SECRETARY

MEMBERSHIP SECRETARY

REGIONAL DIRECTOR-NORTH

PRESIDENT-ELECT is a three year commitment, including one year each as President-Elect, President and Immediate Past President. The incumbent is responsible for presiding over meetings of the Board and official correspondence of the Association; previous Board experience is highly desirable, as is access to secretarial assistance.

RECORDING SECRETARY holds office for a two year term. The incumbent is responsible for keeping a full and complete record of the proceedings of the Board of Directors and of the meetings of the members; keeping the seal of the Corporation and affixing the same to such papers and instruments as may be required in the regular course of business. The Recording Secretary is also responsible for the supervision and control of the books and accounts of the Corporation and other duties as prescribed by the Board.

MEMBERSHIP SECRETARY holds office for a two year term. The membership secretary reviews applications for membership, maintains the membership files of the Association and performs related duties.

REGIONAL DIRECTOR-NORTH holds office for a two year term. The incumbent is responsible for coordinating, arranging and reporting activities of the Association in Northern California; acquaintance with a large section of the membership in the northern region is necessary; recent participation in hosting/arranging regional meetings, study groups, seminars, etc. is highly desirable.

If you have an interest in serving the Association in one of the positions up for election at the 1992 Spring CAC Seminar, please contact one of the following Nominating Committee members:

Susan Swarner
Contra Costa Co. Sheriff's Laboratory
(510) 646-2455

Gordon Deeg
San Mateo Police Department
(415) 377-4588

Susan Narveson
Arizona Department of Public Safety
(602) 223-2394

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NOW YOU SEE IT, NOW YOU DON'T, NOW YOU SEE IT

Martha Blake, Forensic Document Examiner, San Francisco Police Department
Verle R. Truman, Senior Document Analyst, US Postal Inspection Service, San Bruno, CA

Physical Developer is a silver-based aqueous reagent used for the detection of latent fingerprints on paper which has been wet, or as a post-ninhydrin treatment for development of additional latent fingerprints. This modified silver nitrate formula originated and has been in use in Great Britain since the early 1980's. In most laboratory settings, the document examiner works independently from the latent fingerprint examiner, with the fingerprint processing of paper (hopefully) being performed last. Unfortunately, there is often too little communication between these two specialists, with the one having little knowledge of the capabilities of the other.

Over the past few years some rather interesting "discoveries" and evidentially significant results have been obtained using Physical Developer on paper evidence. An early discovery was the development of rubber or steel abrasion marks, usually caused by tongs used to grip the paper during processing. A more significant observation was the development of rubber shoe impressions.

More recently, Lloyd Cunningham, while Questioned Document Examiner for the San Francisco Police Department, had a case involving a series of bank robbery notes. The first note was examined with the Electrostatic Detection Apparatus (ESDA) for indentations in the paper fibers. No indented writing was developed. The second note was examined with the ESDA and indented writing corresponding to the first note was developed. This result was repeated with subsequent notes until the fifth note was examined with the ESDA with negative results. This note was then processed for fingerprints using ninhydrin, also with negative results. Physical Developer was then applied as a final attempt to develop latent fingerprints. The results were surprising because Physical Developer produced an image of the fourth note. This image, however, was a "negative" image in that the text of the fourth note appeared white against a grey background (see Figure 1). All of the notes were written on the same type of note pad paper. The mechanism for this reaction is not presently understood.

A few months ago one of the authors (Blake) received a phone call from a woman whose car had been substantially damaged in what she presumed was a hit-and-run. The car was parked on a street in San Francisco on a rare rainy day. She found a piece of paper left on the windshield and tried to read what used to be a note but since the writer used a pen with a water soluble ink she could only see a few indentations of letter forms and a small amount of diffused blue ink. She brought the note to Blake to see if the message could be restored. The note was examined with strong oblique light and a few numerals of a phone number and a few letters were discerned. The note was then examined with the Polilight light source to determine if different wavelengths of light would provide better contrast. This did not prove successful. The note was examined with the ESDA for indentations with negative results, although this was not expected to work due to the water-soaked history of the paper.

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It was then suggested by Stephen Kasarsky, the Latent Fingerprint Examiner of the Postal Crime Laboratory in San Bruno, that Physical Developer be tried. The results of this processing were dramatic: the entire message on the paper was developed clearly (see Figure 2). The writer of the message was a witness to the accident which caused the damage to the woman's car.

Due to the presence of visible pen tracks in the paper we concluded that the writing instrument was probably a roller ball pen with water soluble ink. In an attempt to study the cause of the Physical Developer reaction, we tried to recreate the conditions used to prepare the note. Several rollerball pens with plastic and steel balls were obtained along with some fiber/porous tip pens. A total of eighteen pens were studied, manufactured by Bic, Papermate, Pentel, Pentech, Pilot, Niji, Le Pen, and Faber-Castelle. Blake spoke to the witness who wrote the note and he said it was written with a Faber-Castelle blue ink Uniball pen which was included in the study. Written material was produced with each pen on white lined paper. Each of the sheets of paper was soaked in water for approximately five minutes before processing with Physical Developer. It is of interest to note that very few of the inks were completely or nearly completely water soluble. Several produced a diffused ink line which was quite readable. As expected, the fiber/porous tip pen inks were the most soluble. If an ink was insoluble or nearly insoluble in water it was not processed with Physical Developer. If the ink was approximately one-half soluble (but in many cases entirely legible) it was processed with Physical Developer. Only two of the pens examined resulted in dramatically enhanced images of the text using Physical Developer. One of these was a Papermate Micrometal Roller with blue ink which was approximately one-half soluble. Physical Developer produced a dark blue-black image of the diffused writing. The other pen was a Papermate Accupoint steel rollerball pen which was nearly dry. A portion of the text written with this pen was not visible, although a pen track of the writing was visible. Physical Developer produced a grey-black image of the invisible writing. The Uniball blue pen of the type used by the witness did turn a darker blue-black but the reaction was not as profound as expected. We assume the reactions observed are caused by the abrasion of the paper fibers by the steel balls of these pens, a reaction previously described for the metal tongs used to grip paper. Additional experimentation needs to be conducted to determine the effects of different paper surfaces and other factors which could affect the reaction.

The primary application of the Physical Developer to questioned document problems appears to be the examination of water-soaked or otherwise damaged documents. This procedure has been successful in the examination of papers removed from the clothing on a decomposed body (investigative leads). It may also be indicated when ESDA results are negative and/or for papers already processed for fingerprints with ninhydrin.

Editor's Note: Marty Blake's presentation of this paper at the Spring 1991 CAC Seminar was judged to be the "Most Outstanding Presentation" and she will receive a Merit Award and a $100 stipend. Future presenters that are judged to have the "best presentation" at a CAC Seminar will be strongly encouraged to publish their paper in the CAC Newsletter.

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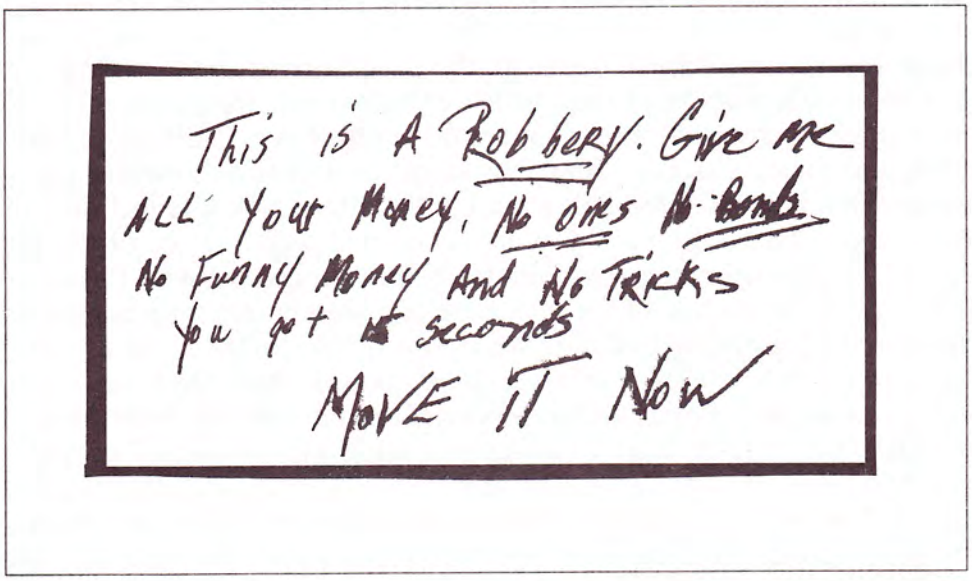
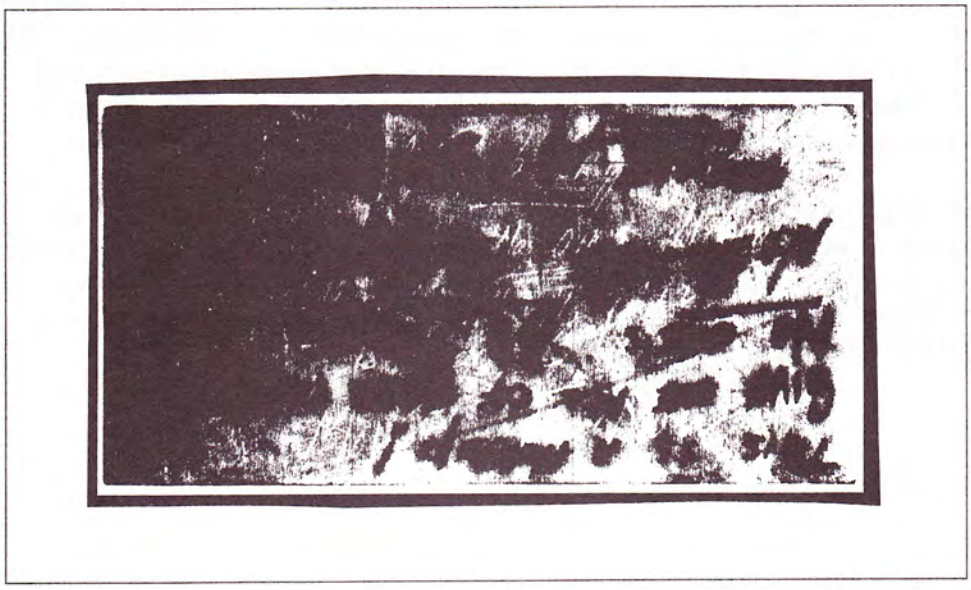
Figure 1. San Francisco Bank Robbery Case



Note #4



Note #5 (black/upside down) and image of Note #4 developed by Physical Developer (white)

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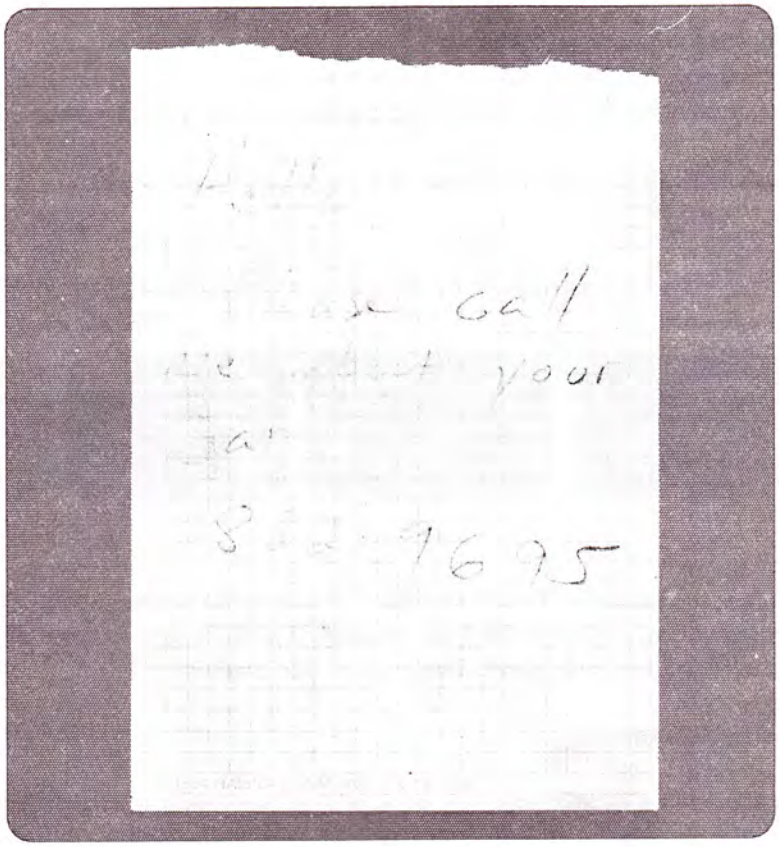
Figure 2. Note left on car - processed with Physical Developer.



PHYSICAL DEVELOPER

Use dedicated, clean glassware which has been rinsed with distilled water. See reverse for suggested source of chemicals and additional notes.

1. Preparation of Stock Detergent solution

a. Rinse a large magnetic stir-bar with distilled water and place in a 2 liter beaker.
b. Pour 1 liter distilled water into beaker and turn on magnetic stirrer.
c. Add 4g N-dodecylamine acetate to the water.
d. Add 4g synperonic N to water.
e. Stir solution for 30 min.
f. Transfer to a clean 1 liter bottle and let sit 24 hours before use.

2. Preparation of Physical Developer solution

a. Rinse a small magnetic stir-bar in distilled water and place in a 100ml beaker.
b. Pour 50ml distilled water into beaker and turn on magnetic stirrer.
c. Add 10g silver nitrate to water.
d. Stir for one minute and then set aside (solution should be clear; if cloudy it may not work).
e. Rinse a large magnetic stir-bar with distilled water and place in a 2 liter beaker.
f. Add 900ml distilled water to beaker.

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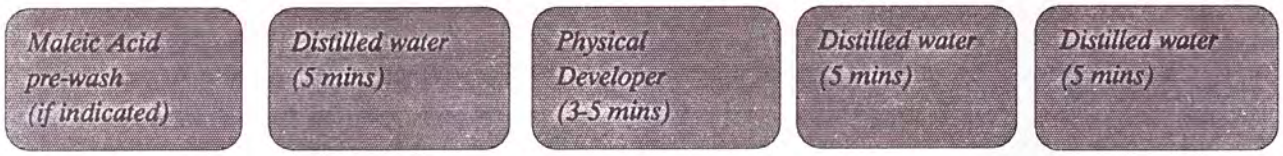
g. Weigh out the following chemicals and add to the water in the order listed:
   30g Ferric Nitrate
   80g Ferrous Ammonium Sulfate
   20g Citric Acid
h. After all is dissolved, stir for additional 5 minutes.
i. Pour 40ml of stock detergent into beaker and stir 2 minutes.
j. Inspect the silver nitrate solution: if not all in solution continue stirring until it is, then add to beaker.

The Physical Developer solution will be a yellow color (if it is cloudy it may not work).

3. Use of Physical Developer (need 5 glass trays, 8" by 10" or larger; use rubber-tipped or wooden tongs for transfer between trays)



An 8" by 10" tray containing approximately 300ml of Physical Developer will process about 100 checks or 25 pages of paper. It then must be discarded and replaced with fresh solution. Watch the development of the image until maximum contrast (the background will turn pale grey), usually about 3 to 5 minutes

- The stock detergent is good for at least one year
- The maleic acid pre-wash is necessary when glossy paper (e.g. magazine paper) is processed; it is a good idea to dip a corner of any unusual paper into the Physical Developer solution after the water soak; if the corner turns black immediately the maleic acid prewash is necessary.
- The Physical Developer solution (one liter) is best used in half-batches (or less): pour about 300-500ml into the tray and use until the paper no longer develops a grey background, then discard and use the remaining solution

After final distilled water rinse use tap water for final wash, about 5 minutes, dry on paper towels (or photography drying rack) and examine.

SUGGESTED SOURCES OF CHEMICALS

Lightning Powder Co. of Salem, Oregon sells a two-part solution kit for the stock detergent and the ferrous/ferric buffer solution; they also sell N-dodecylamine acetate and Synperonic-N separately as well as silver nitrate

Any local catalog source of the following:

Silver Nitrate (Baker Reagent crystal, for example)
Ferric Nitrate (crystals)
Ferrous Ammonium Sulfate (6-hydrate, fine crystals)
Citric Acid (anhydrous powder)
Maleic Acid (2.5% solution for pre-wash as indicated by type of paper (sized paper (magazine pages) or greeting card paper, etc.)

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CAC SECTION ACTIVITIES

SOUTHERN SECTION

On July 24, 1991, a CAC Southern Section Dinner Meeting was held at Tamayo's Restaurant (a 1928 restored hacienda) in Commerce. The Dinner Meeting was hosted by Manuel Munoz of the Los Angeles County, Chief Medical Examiner-Coroner's Office. The guest speaker was Steve Dowell, Research Criminalist of the Chief Medical Examiner-Coroner's Office. His topic was "Toolmarks in Biological Material", a review of selected cases from 10 years of toolmark examinations including recent work on bone fragments. The dinner meeting was attended by 58 individuals. The presentation was videotaped by Don Jones.

Southern Study Groups met on the same day and are described below.

TOXICOLOGY STUDY GROUP

(Chair: Manuel Munoz, Los Angeles County, Chief Medical Examiner-Coroner)

Guest Speaker was Dr. Vina Spiehler, Technical Director of Diagnostic Products Corporation (Los Angeles), who presented an extensive overview on Radioimmunoassay. Her topic, entitled "RIA in the Forensic Field", dealt with the theory and mechanism of this field. 22 individuals attended this study group.

SEROLOGY STUDY GROUP

(Chairs: David Hong, LASD and Don Jones, San Bernardino Sheriff)

Aiko Lawson, San Diego Police Department, presented her Desert Storm experience in reassociating body parts using Miragen antibody profiling.
Rob Keister, Orange County Sheriff-Coroner, reviewed the International Symposium on the Forensic Applications of PCR Technology hosted by the FBI Laboratory, May 29-31, 1991.
Jim White, Orange County Sheriff-Coroner, reviewed the Serology papers presented at the Spring CAC Seminar in San Francisco.
Tina Chan, Orange County Sheriff-Coroner, discussed collaborative studies on non-probative and laboratory donor samples for DNA validation; contact her for further information.
Carol Hunter solicited ideas for projects or training courses to be considered by the Training and Resources Committee for submission to the McLaughlin Endowment Fund Committee by August 31.
San Bernardino Sheriff's Crime Laboratory has been videotaping Serology's "Back to Basics" lecture series since 1990. A list of lectures that have been taped will be generated. The Training and Resources Committee will be asked to look into copying the tapes and/or providing copies to labs for review.
25 individuals attended this study group.

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TRACE STUDY GROUP
(Chairs: Lynne Herold, LASD; Jeff Thompson, Huntington Beach PD and Wayne Moorehead, Orange County Sheriff-Coroner)

Reviewed FBI Trace/Physical Evidence Symposium held in June 1991.
Reviewed papers presented at the Spring CAC Seminar in San Francisco.
Round table presentation and discussion of interesting cases.
25 individuals attended this study group.

BLOOD ALCOHOL STUDY GROUP
(Chair: Dan Nathan, LASD)

Informal discussion relating to DMV Per Se Law, 2100:1 ratio and IR-300 programs.
3 individuals attended this study group. (Low turnout is due, in part, to a conflict with the Forensic Alcohol Supervisor Class held all week in Orange County. 40 individuals from Southern California attended this class.)

DRUG STUDY GROUP
(Chairs: Elizabeth Thompson and John Davis, Orange County Sheriff-Coroner)

New chairs appointed, will meet in conjunction with the next dinner meeting on September 25, 1991.

NORTHERN SECTION

Kris Garvin of the Cetus Corporation hosted a dinner meeting on August 1, 1991 at Crogan's Bar and Grill in Oakland. The guest speaker was Anita Wonder. Her topic was "Evidence on Trial - The Alexander Lindsay Inquiry". The meeting was attended by 32 individuals.

SEROLOGY STUDY GROUP
(Chairs: Michele Horne and Gary Sims, DOJ Berkeley)

The Serology Group met on August 1, 1991 prior to the dinner meeting. The speaker was Ed Blake and his topic was the Glenn Woodall case out of West Virginia. This case involves a PCR DQ alpha exclusion in which the DA strongly opposed the results. The evidence was reanalyzed by a second lab with the same results.

DRUG STUDY GROUP
(Chairs: Diane Bowman and Pam Sartori, Oakland Police Department)

The Drug Study Group met on June 19, 1991 at the CCI Advanced Training Center in Sacramento. The meeting was attended by over 30 individuals. The topics included clandestine labs in Southern California, impurities in heroin, and the benzaldehyde-nitroethane route to P2P and amphetamine. The speakers were Tom Abercrombie (DOJ-Riverside), Mark Kalchik (DOJ-Fresno) and Roger Ely (DEA-SF).

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NWAFS SPRING 1991 MEETING ABSTRACTS

The following papers were presented at the Spring 1991 meeting of the Northwest Association of Forensic Scientists, held in Anchorage, Alaska.

GENERAL PAPERS

"Buried Bodies, Scattered Surface Skeleton Recovery and a Burning Body Case"
Gary Knowles, Oregon State Police, 650 Royal Ave., #11, Medford, OR 97504
A review of the processes of identifying burial sites, excavation, diagramming, sexing and determining racial origin of buried bodies and scattered surface skeletons.

"Primer Residues: Why Are We Wasting Our Time?"
Robert Shem, Alaska State Crime Lab, 5500 E. Tudor Rd., Anchorage, Alaska 99507
Volumes and volumes of texts and procedures for the collection and analysis of firearm primer residues have been written and re-written for many years now. This presentation will highlight how the interpretation of analytical results clouds the issue of who pulled the trigger.

"Evidence Collection/Packaging Protocol for Fire Scene Debris"
Robin Bussoletti, Washington State Patrol, Public Safety Building, 2nd Floor, Seattle, WA 98104
Evidence collection and packaging protocol for fire scene debris used in the Seattle Crime Lab is discussed. Information is included on the testing of the Kapak polyester and Grand Rivers' nylon bags.

"Courtroom Displays on a Shoestring: Help at Last for the Non-Artist"
Irene Brady, US Fish & Wildlife Forensics Lab, 1490 E. Main St., Ashland, OR 97520
Information is presented to assist the non-artist in planning and preparing more effective professional-looking courtroom visuals on a limited budget.

"Permeability Testing of Nylon Evidence Bags for Arson Evidence Packaging"
Bill Dietz, BATF
Larry Pederson, City County Forensic Lab, Greely, CO 80632
Grand River Products in Mount Clements, Michigan markets nylon evidence bags for packaging arson evidence. Testing sought to determine the permeability of the bags to the "standard accelerant mixture (SAM)" used by ATF and the detectability of background volatiles inherent to the bags.

"The Association of Australian and Pacific Area Police Medical Officers"
Dr. W.P. Ryan, P.O. Box 267, Nowra, N.S.W.
An outline of the history and function of the above Association; its aims and plans for future meetings with occasional reference to Clinical Forensic Medicine.

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"Alien Gasoline Identified in North Carolina"

Kristen Nelson and Chris Beheim, Scientific Crime Detection Lab, 5500 E. Tudor Rd., Anchorage, Alaska 99517

Arson investigators usually identify any accelerants present by their distinctive chromatographic patterns. Gasoline patterns vary dependant upon the crude oil used to produce the gas as well as the differences in refinerly production which add further distinction. The gasoline produced and sold in Alaska is unusual as a result of both of these factors, and may provide valuable evidential information for arson investigators. This presentation will introduce these differences and explain why Alaskan refineries produce such distinctive gasoline.

"DNA Typing Using PCR; HLA DQa and Other PCR-Based Systems"

Nicola Fildes, Cetus Corp., 1400 53rd St., Emeryville, CA 94608

The Polymerase Chain Reaction (PCR) is a method for the enzymatic amplification of specific regions of DNA. PCR makes possible the analysis of genetic variation from samples containing minute quantities of DNA. This report describes the PCR-based analysis of sequence polymorphisms at the HLA DQa locus as well as other PCR genetic markers. The HLA DQa system detects six alleles and has a discriminating power of approximately 0.93. Population frequency data as well as forensic casework data will be presented.

"Sexual Asphyxia-Not Your Average Death!"

Larry Campbell, Vancouver Regional Coroner, 4595 Canada Way, Burnaby, B.C. V5G 4L9

Cases of sexual asphyxia continue to cause problems for death investigators as well as the family of the deceased. Many deaths which appear to be suicidal in nature are in fact cases of accidental autoerotic behavior. When the scene has been altered by persons trying to "protect" the reputation of the deceased, investigation becomes difficult. This paper discusses the characteristics of these scenes and gives some insight into the evidence found.

"Statistics of Rape Cases from 1979-1990 in Greater Youngstown, Ohio, USA"

Bari Lateef, Kimberly Carlini, John Vitullo, James Vitullo*, Vijary Sharma**
**Department of Criminal Justice, Youngstown State University, Youngstown, Ohio 44555*
Tri-State Laboratories, Youngstown, Ohio

A total of 545 rape cases were analyzed between 1979-1990. Victim analysis included race, sex, age and injuries (or death). Assailant analysis included race, number of assailants and weapons used. Assault analysis included location, time of day and a monthly breakdown.

"Clandestine Drug Manufacture and Controlled Substances Analysis in the Kingdom of Sweden or What is the "Clay Pot" Method?"

John Bowden, CA Dept of Justice, CCI, 4949 Broadway, Sacramento, CA 95820

This presentation will discuss the types and analysis of controlled substances seizures in the country of Sweden. Commonly encountered methods used in the clandestine manufacture of controlled subtances in that country will also be presented. The analytical profiling of drug seizures to determine the source of origin will be highlighted.

"Presenting Your Laboratory Data: Tips and Tricks for Looking Good"

Irene Brady, US Fish & Wildlife Lab, 1490 E. Main St., Ashland, OR 97520

While it is entirely possible to present research without any visuals at all, some time spent creating simple visuals and utilizing image enhancement can improve audience comprehension and reception of the material presented, hold their attention from start to finish, and enhance their opinion of the presenter's professionalism. This presentation introduces some methods which can be utilized (even with limited funds, artistic expertise and equipment) to improve any presentation's quality, impact and professional appearance. Information covered will include overhead transparencies, slides, easel displays, etc.

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"The Taipei International Symposium of Forensic Sciences-Crime Laboratories in Taiwan"
George Taft, Jr., Alaska DPS, 5500 E. Tudor Rd., Anchorage, Alaska 99507
The Taipei International Symposium on Forensic Sciences was held on March 21-23,1991 in Taipei. A discussion of the attendees, papers presented and tours is given.

"Crime Scene Blood Pattern Interpretation for Investigators and Criminalist Type People"
Gary Knowles, Oregon State Police, 650 Royal Ave., #11, Medford, OR 97504
Bloodstain patterns at crime scenes have often been overlooked or misinterpreted. This presentation will review the basic principles of blood spatter analysis and actual case examples. Included is a mud spatter case.

WILDLIFE FORENSIC PAPERS

"The Art and Craft of Wildlife Forensic Courtroom Displays"
Irene Brady, US Fish & Wildlife Lab, 1490 E. Main St., Ashland, OR 97520

"The Wildlife Forensic Perspective: Genetic Variation in Populations of Black Bear"
Steve Fain, US Fish & Wildlife Lab, 1490 E. Main St., Ashland, OR 97520

"DNA Profile Testing for the Analysis of Northwest Wildlife Species"
William Gergits, Barbara Schall, Elena Camposano and Nancy Casna, Therion Corp., 185 Jordan Rd., Troy, NY 12180

"Species Identification Using Restriction Enzyme Constant Band Patterns: Additional Studies"
"Differentiation of Cervids (Elk, Red Deer, Sika Deer and Moose) by Isoelectric Focusing Electrophoresis of GC on Agarose Gels"
C.M. Stern, S.A. Miller and M.S. Schanfield
AGTC, 7808 Cherry Creek S. Dr., #201, Denver, CO 80231

"Identification of Tauro-Ursodeoxycholic Acid, a Principal Component in the Bile Salts of Bear (Carnivora: Ursidae)"
Edgard Espinoza and Jo Ann Shafer
US Fish & Wildlife Lab, 1490 E. Main St., Ashland, OR 97520

"Molecular Genetic Studies of Endangered Species"
Jonathan Longmire, Graham Mark, Nancy Brown and Robert Baker
Genetics Group, MS M-886, Los Alamos National Lab, Los Alamos, NM 87545

"The Use of Isoelectric Focusing Electrophoresis (IEF) for Species Identification and Detection of Polymorphisms in Various Wildlife Species"
Moses Schanfield, Shirley Miller, Clay Stern and Thomas Wahl
AGTC, 7808 Cherry Creek S. Dr., #201, Denver, CO 80231

"Digital Skull-face Superimposition for Accident or Violent Crime Victim Identification with Application to Wildlife Antler Identification"
Michael Charney, Colorado State University, Fort Collins, CO 80523
Tom Moore, WY Game & Fish Lab, University Station, Box 3312, Laramie, WY 82071

"Physical Matching and Wildlife Evidence (Cheaper than DNA, But Smellier)"
James Wolfe, Alaska State Crime Lab, 5500 E. Tudor Rd., Anchorage, Alaska 99507

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CCI COURSE SCHEDULE

1991 FALL QUARTER (Oct - Dec)

A101 Forensic Academy
A103 Courtroom Presentation of Evidence
B202 Forensic Examination of Sexual Assault Evidence
C100 Supervisor's Training - Controlled Substances
E101 Firearms Safety in a Laboratory Environment
E151 Latent Print Techniques
L101 Online Forensic Science Information Resources
M201 Principles of Hair Identification and Comparison
M202 Principles of Fiber Identification and Comparison
S201 Bloodstain Pattern Interpretation

1992 WINTER QUARTER (Jan - March)

B101 Forensic Serology
B202 Forensic Examination of Sexual Assault Evidence
B250 DNA - Polymerase Chain Reaction
C152 Analysis of Low Explosives
C201 Clandestine Laboratory Analysis and Synthesis
E102 Overview of Firearms and Toolmark Identification
E151 Latent Print Techniques
S212 Forensic Crime Scene Investigation II (offsite)

1992 SPRING QUARTER (April - June)

A103 Courtroom Presentation of Evidence
B100 Supervisor's Training - Serology
E101 Firearms Safety in a Laboratory Environment
E251 Specialized Latent Print Techniques
L101 Online Forensic Science Informational Resources
M101 Forensic Microscopy
S213 Forensic Crime Scene Investigation III

For detailed information regarding a specific course, please contact the California Criminalistics Institute (CCI) at (916) 739-4380.

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SELECTED REFERENCES

"Illegal Drug Laboratories: A Growing Health and Toxic Waste Problem"
G. Gardner, Pace Environmental Law Review 7(1): 193-212, Fall 1989.
The operation of clandestine drug laboratories, resulting in mass destruction of life and property, creates a law enforcement challenge. This article examines how existing laws may be used to alleviate the illegal drug manufacturing dilemma. This article discusses the use of federal legislation, such as the 1988 anti-drug bill and environmental statutes.

"Liquid Chromatographic and Mass Spectral Analysis of 1-(3,4-Dimethoxyphenyl)-2-propanamines: Analogs of MDMA"
Noggle et al., Journal of Chromatographic Science 29(6): 253-257, June 1991.
1-(3,4-dimethoxyphenyl)-2-propanamine and its N-methyl, N-ethyl and N,N-dimethyl derivatives are prepared and analyzed as potential designer analogs of the 3,4-methylene-dioxyamphetamine-type (MDA) drugs of abuse.

"Inhalation Efficiency of Free-Base Cocaine by Pyrolysis of 'Crack' and Cocaine Hydrochloride"
Nakahara et al., Journal of Analytical Toxicology 15(3): 105-109, May/June 1991.
The inhalation efficiency and pyrolysis products of cocaine by the pyrolysis of crack and cocaine hydrochloride at various temperatures are described. This study proposes a new method of discrimination between cocaine HCl and crack by GC or GC/MS with a curie point pyrolyzer.

"Reduced BAC Limits for Young People (Impact on Night Fatal Crashes)"
Hingson et al., Alcohol, Drugs and Driving 7(2): 117-127, Apr-Jun 1991.
Since 1983 nine states have passes laws that lower the legal BAC level for adolescent drivers. This paper examines fatal crash data in the four states that passed laws before 1989 and have accrued sufficient data for evaluation. Adolescent and adult night fatal crash trends were compared in these states and four nearby states with similar drinking age laws, but which did not lower BAC levels for teen drivers. As a group, states that lowered their BAC levels for adolescents had significantly greater post-law reductions in night fatal crashes among adolescents relative to adults than was observed in comparison states.

"Reply to 'Incorrect Reanalysis of Breath/Blood Alcohol Data'"
Simpson, Journal of Analytical Toxicology 15(4): 220-222, July/August 1991.
Letter to the Editor.

"Alcohol and Human Performance"
Glencross, Drug and Alcohol Review 9(2): 111-118, 1990.
This paper presents a comprehensive review of studies concerned with the effects of alcohol on human performance. It attempts to review the studies within the framework of the information processing model.

"Two States Report Numerous Problems with Intoxilyzer 5000"
Drinking/Driving Law Letter 10(12): 151-154, June 7, 1991.
The Intoxilyzer Model 5000 has been the subject of adverse comments by the health departments of two states because of problems with reliability. The letters are printed in the article.

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"The Behavior of Flammable and Combustible Liquids"
Lentini et al., Fire and Arson Investigator 42(1): 39-45, Sept 1991.
This article describes the behavior of liquids in general and of flammable and combustible liquids in particular. The article attempts to explain in plain language the relationship between the properties of a liquid, such as volatility, explosive limits and flash point.

"Case in Review: Charcoal Lighter Fluid Used as an Arson Accelerant"
Lincoln, Fire and Arson Investigator 42(1): 46-47, Sept 1991.
Discusses an actual case where a charcoal lighter fluid was found to contain gasoline and heavy petroleum distillate instead of the expected medium petroleum distillate.

"Physical Evidence of Arson: Its Recognition, Collection and Packaging"
Dietz, Fire and Arson Investigator 41(4): 33-39, June 1991.
The collection of physical evidence from the scene of a suspected arson involves more than the retrieval of some burned debris and a request for the forensic laboratory to find the presence of an accelerant. Debris may actually contain the residue of a chemical incendiary mixture. If the request or laboratory practice is to only analyze for the presence of a flammable or combustible liquid, then the laboratory report might not support the theory of arson. In addition to collecting physical evidence that supports the theory of arson, evidence should also be sought that eliminates any other possible causes.

"An Investigation into Propellant Stability"
Stine, Analytical Chemistry 63(8): 475A-478A, April 15, 1991.
A study of a particular lot of propellant was conducted due to concern about its stability. This article describes the analytical methods used to evaluate the propellant.

"Identification of the Skeletal Remains of a Murder Victim by DNA Analysis"
Hagelberg et al., Nature 352(6334): 427-429, August 1, 1991.
This paper reports the successful identification of the 8-year-old skeletal remains of a murder victim, by comparative typing of nuclear microsatellite markers in the remains and in the presumptive parents of the victim.

"Extraction strategy for obtaining DNA from bloodstains for PCR amplification and typing of the HLA-DQ alpha gene"
Jung et al., International Journal of Legal Medicine 104(3): 145-148, July 1991.
A simple, practical approach for the extraction of PCR-amplifiable DNA for the HLA-DQ alpha gene from bloodstains deposited on various substrates is described.

"Recent Advances in the Polymerase Chain Reaction"
Erlich et al., Science 252(5013): 1643-1651, June 21, 1991.
Recent developments in instrumentation, methodology and applications of the PCR technique are presented in this review.

"Human Error in Forensic DNA Typing"
Higuchi, American Journal of Human Genetics 48(6): 1215-1216, June 1991.
Letter to the Editor.

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"Identification of fetal hemoglobin and simultaneous estimation of bloodstain age by high-performance liquid chromatography"
Inoue et al., International Journal of Legal Medicine 104(3): 127-131, July 1991.
A method using reverse-phase high-performance liquid chromatography (HPLC) for the identification of fetal hemoglobin (Hb F) and the simultaneous estimation of bloodstain age is described.

"Application of ELISA-ABC method to the identification of minute human bloodstains"
Tokiwa et al., International Journal of Legal Medicine 104(3): 123-126, July 1991.
Bloodstained threads (1 cm) were tested to identify human origin by a direct ELISA-ABC method using biotinylated antibody against human HbAo. By this method, human bloodstains were clearly distinguishable from bloodstains of other species.

"Stability of Phosphoglucomutase-I (PGM), Glyoxalase-I (GLO), Adenosine Deaminase (ADA), Esterase-D (EsD) and Erythrocyte Acid Phosphatase (EAP) from Bone Marrow and Dental Pulp of Cadavers"
Parmar et al., Indian Journal of Forensic Sciences 4: 119-124, 1990.
Bone marrow and dental pulp from 103 dead bodies were studied for the determination of various genetic markers. The results obtained from bone marrow and dental pulp are in agreement with the results obtained from the cardiac blood.

"ABO Blood-typing of Bloodstains by Dot-ELISA Method"
Ito et al., Jpn J Legal Med 44(3): 199-204, 1990.
The ABH antigens of bloodstains which were effectively solubilized in phosphate-buffered saline by crushing in a mortar were detected on a nitrocellulose membrane by ELISA.

"Identification of human esterase D subunits from the homodimeric and heterodimeric forms of five phenotypes by a new two-dimensional isoelectric focusing method"
Alonso et al., Electrophoresis 12(5): 348-351, May 1991.
A new two-dimensional isoelectric focusing method was developed to identify the human esterase D (EsD) subunits from the homodimeric and heterodimeric forms of five EsD phenotypes. EsD polymorphism was also analyzed by one-dimensional isoeclectric focusing under reducing and mild denaturing conditions to study the influence of dithiothreitol and low concentrations of urea on the focusing pattern of the EsD dimers.

"Rapid measurement of basic drugs in blood applied to clinical and forensic toxicology"
Dawling et al., Annals of Clinical Biochemistry 27(5): 473-477, 1990.
A gas chromatographic method is presented to measure blood, serum or plasma concentrations of more than 40 basic drugs. This paper describes a single step extraction from basic solution into n-butyl acetate containing maprotiline internal standard.

"Gunshot Residue, Ten Years Later"
Wilber et al., American Journal of Forensic Medicine and Pathology 12(3): 204-206, Sept 1991.
Gunshot residues may be central to a competent reconstruction of a shooting incident. A ten year old case was examined.

"An Unusual Entrance Wound Associated with Rimfire Rifles"
DiMaio et al., American Journal of Forensic Medicine and Pathology 12(3): 207-208, Sept 1991.
In many cases of self-inflicted contact wounds of the head with rimfire rifles, we have noted that the entrance wound appears unusual: in 50% of cases studied, a pencil-like extension or zone of blackened and seared skin extends downward from the entrance.

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"Gunshot Wounds Caused by Fiocchi Anticrime Cartridges (Plastic Bullets)"
Missliwetz et al., American Journal of Forensic Medicine and Pathology 12(3): 209-212, Sept 1991.
This article presents four cases of injuries. According to our tests, the Fiocchi Anticrime cartridge may well cause fatal injuries within firing distances of up to 4-5 m.

"What Exactly Does a .22 Bullet Do Downrange?"
Jamison, Shooting Times 32(10): 50-53, 102, October 1991.

"Practical Ballistics"
Sundra, Guns Magazine 37(9): 69-76, Sept 1991.
Trajectory, point blank range, wind effect, up and downhill angles; here's what you really need to know to improve your long range shooting performance.

"What is Recoil Energy? or Understanding Why Guns Kick"
Pearce, Shooting Times 32(9): 70-75, Sept 1991.

"The World's Most Popular Cartridge: Tracing the History of the Mighty Little .22 Rimfire"
Askins, Guns Magazine 37(8): 62-64, 66-67, August 1991.

"Paint Sample Presentation for Fourier Transform Infrared Microscopy"
Allen, HOCRSE Report #734, 1991.
General spectroscopic processes associated with the use of FTIR microscopy to examine paint samples are described. These are then related to various sample preparation options. Full experimental procedures are given for eleven methods of sample preparation with observations as to their applicability to various sample conditions including size, degree of fragmentation and substrate. Guidelines are provided to assist caseworkers in optimizing a particular sample examination.

"Diaminobenzidine: A Simple, Safe and Sensitive Method for the Enhancement of Blood Marks at a Scene of Crime and in the Laboratory"
Allman et al., HOCRSE Report #733, 1991.
Diaminobenzidine (DAB) is demonstrated to be an excellent scene of crime reagent for the enhancement of blood marks. It lends itself to easy storage as ready-made aliquots in a freezer as well as quick and simple application to all types of surface. The reagent is quite specific and highly sensitive for blood. It is recommended that DAB should be used to Scenes of Crime and should supersedes Amido Black for the development of blood marks in the lab.

"The Removal of Paint Smears from Tools and Clothing for Microscopical Examination and Analysis"
Allen et at., HOCRSE Report #732, 1991.
A method is described for removing paint smears from tools and clothing. The smear could be lifted with adhesive tape or epoxy resin and then subsequently embedded in an epoxy resin if required. Sectioning then provides sub-samples for microscopical examination, microchemical tests and spectroscopic analysis using FTIR microscopy. Lifting of smears with adhesive tape also allowed ready comparison with standard color squares as used in non-stop road traffic accident cases. Interference from the underlying color of the clothing or other objects was therefore reduced.

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"Detection of foreign particles in traumatized skin"
Bajanowski et al., International Journal of Legal Medicine 104(3): 161-166, July 1991.
the aims of the medico-legal investigation of wounds are a description of the wound morphology, the characterization of the force used and finally identification of the weapon. The demonstration of foreign particles in the depth of a wound or in the surrounding area can be of great value. In the present series of experiments, the suitability of imaging methods (low energy X-ray imaging, direct X-ray magnification, NMR) for the detection of relevant foreign particles has been investigated.

"Fibre identification and the quantitative analysis of fibre blends"
Greaves, Review of Progress in Coloration and Related Topics 20: 32-39, 1990.
the fibre composition of a textile is a fundamental characteristic in determining the product's behavior, end use and value. This paper reviews recent developments in the fields of fibre identification and blend analysis, several of which are extensions of more traditional methods. Difficulties and advantages associated with the techniques described are considered.

"Material Safety Data Sheets: A User Perspective"
Altvater, Professional Safety, pp. 17-19, October 1990.

"Forensic Science and Criminal Justice Technology: High-Tech Tools for the 90's"
Rau, NIJ Reports (224): 6-10, June 1991.
The NIJ has long been a pioneer in researching new technologies and encouraging criminal justice agencies to make full use of emerging new tools. This article traces the Institute's efforts over the past several years and highlights some of the most significant research efforts now under way.

"AIDS: The Covert Killer"
Mckenna, RCMP Gazette 53(6): 18-23, 1991.
Describes for the law enforcement community what AIDS is, precautions, evidence collection, needlesticks and cuts, human bites, CPR and Hepatitis B.

"A procedure for hazardous waste reduction in the general chemistry laboratory"
Burke et al., American Laboratory 23(11): 15-16, July 1991.

"Cyanide Ingestion: Case Studies of Four Suicides"
Fernando et al., American Journal of Forensic Medicine and Pathology 12(3): 241-246, 1991.
Deliberate ingestion of cyanides is relatively rare. there are no pathognomonic specific autopsy findings and even the distinctive smell may be missed by some individuals. Presented are four cases and the problems involved in investigating deaths from cyanide ingestion are discussed.

"Determination of morphine and 6-acetylmorphine in plasma by high-performance liquid chromatography with fluorescence detection"
Barrett et al., Journal of Chromatography 566(1): 135-145, 1991.
A method is described for the simultaneous determination of morphine and 6-acetylmorphine in small volumes of human plasma by normal-phase high-performance liquid chromatography using solid-phase extraction, dansyl derivatization and fluorescence detection.

"High performance liquid chromatographic assays of the illicit designer drug "Ecstasy", a modified amphetamine, with applications to stability, partitioning and plasma protein binding"
Garrett et al., ACTA Pharmaceutic Nordica 3(1): 9-14, 1991.

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"Determination of Morphine and Codeine in Blood and Bile by Gas Chromatography with a Derivatiztion Procedure"
Lee et al., Journal of Analytical Toxicology 15(4): 182-187, July/August 1991.
Two gas chromatographic methods for the simultaneous quantitation of morphine and codeine in blood and bile from cases of opiate-related deaths are described. both methods employ simple solvent extraction followed by hexane-ethanol partitioning clean-up and use nalorphine as the internal standard.

"Toxicological Screening of Drugs by Microbore High-Performance Liquid Chromatography with Photodiode-Array Detection and Ultraviolet Spectral Library Searches"
Turcant et al., Clinical Chemistry 37(7): 1210-1215, July 1991.
We use UV data, acquired with a photodiode-array detector coupled to a reversed-phase liquid-chromatographic system, to identify unknown drugs in plasma samples of acutely poisoned patients.

"Automated screening procedure using gas chromatography-mass spectrometry for identification of drugs after their extraction from biological samples"
Neill et al., Journal of Chromatography 565(1-2): 207-224, 1991.
A novel analytical screening procedure has been developed, using computer-controlled GC-MS to detect 120 drugs of interest to road safety.

"Determination of Methamphetamine and Amphetamine in Urine by Headspace Gas Chromatography/Mass Spectrometry"
Tsuchihashi et al., Analytical Sciences 7(1): 19-22, Feb 1991.

"Introduction to the Forensic Pathology of Cocaine"
Karch, American Journal of Forensic Medicine and Pathology, 12(2): 126-131, 1991.
A brief review of recent observations that bear on the forensic aspects of cocaine abuse.

"Forensic analysis of triazolam in human tissues using capillary gas chromatography"
Kudo et al., International Journal of Legal Medicine 104(2): 67-69, March 1991.
A reliable and sensitive method has been developed to assess the concentrations of the hypnotic drug triazolam in human tissues, including putrefied tissues. The method involves a 3-step solvent extraction, clean-up on a silica gel column and gas chromatography using a nitrogen phosphorus detector and a capillary column. Estazolam was used as an internal standard.

The preceding abstracts of technical papers are for the benefit of the CAC members. If any difficulty is encountered in obtaining an article, contact the CCI Library at (916) 739-4380. The CCI staff are very resourceful in quickly tracking down citations.

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CAC MERCHANDISE

Show your colors (or colours) at home, at work, or at play. Be the first (and probably the only) person on your street to have one of these. Limited stocks are on hand at CAC Seminars and by mail (via John DeHaan California DOJ/CCI-Sacramento). Special order items and colors are available on request. All CAC clothing items bear a specially embroidered emblem. A full range of FORENSIC SCIENCE SOCIETY items are also available. These goodies are offered to you at cost, so you won't find a better deal. REMEMBER - We have gone to considerable trouble and expense to get these special items. Please show your support for the CAC!

The current offerings are listed here. if you would like to see a particular product offered, contact John DeHaan at BFS-CCI, 4949 Broadway, Room A-104A, Sacramento, California 95820, (916) 739-4380.

MERCHANDISE

We are pleased to announce that the long-awaited **LADIES SCARVES** are available now and sale-priced at just $12.00 each. White with red and blue trim, they have the CAC logo silk-screened at one end.
MEN'S TIES with the CAC logo embroidered in silk are also available for $12.00 Choice of Blue or Burgundy.
We have, at last, gold **CAC NAME BADGES.** Get your own personalized one for just $6.00. There are also **MUGS** ($6.50), **SWEATSHIRTS** (Hooded for $16.00, and Plain for $12.50), **GOLF SHIRTS** ($15.50), and **SWEATERS** ($16.50 to $17.50) in stock. We are also considering ordering **POLO SHIRTS** in blue and white. Contact John for more information.
Hats (one size fits all, mesh and foam, various colors with white): $5.50
Patches (CAC logo only, black-on-white): $5.00
Vests (sleeveless acrylic pullovers): $16.50
Sweaters or Vests are available in: black, brown, burgundy, tan (camel), light blue, red and navy.
(100% Orlon available at extra cost)
Forensic Science Society Ties (Embroidered FSS motif): $6.50 (navy brown, burgundy)
Woven multiple scale/microscope motif: $6.50 (burgundy)
Plaques: $20.00

PUBLICATIONS

The following publications are available from the CAC. These are available at the CAC table at our semi-annual seminars. For further information, contact John DeHaan.

Explosion Investigation, Yallop $25.00
Science Against Crime, Kind/Overman $15.00
Eight Peak Index of Mass Spectra $65.00
Measurement of Breath Alcohol $13.00
Bibliography on Ethyl Alcohol, Holleyhead $25.00
The Controlled Substances Act: A Resource Manual of the Current Status of the Federal Drug Laws,
Alexander Shulgin $25.00
CAC Policy Manual, complete with By-Laws, Officer Duty Statements, CAC Policy Statements,
Ethics Enforcement Procedure with Binder: $20.00
Index to CAC Seminars - free to members, $10.00 to non-members.
CAC Abstracts (with index, in a three ring binder with the CAC logo) - $25.00 for members, $50.00 for non-members
Three Ring Binders: Blue & Grey with CAC Logo: $10.00

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Notice to Contributors

The California Association of Criminalists Newsletter is published four times a year (January, April, July, and October) by the California Association of Criminalists, a non-profit, professional society dedicated to the furtherance of forensic science in both the public and private sectors.

This newsletter publishes material of interest to its readers and is pleased to receive manuscripts from potential authors. Meeting announcements, employment opportunities, course announcements, etc. are also solicited.

Advertisements are also accepted, although a fee is charged for their inclusion in the Newsletter. The acceptance of any advertisement is at the sole discretion of the Editorial Secretary.

This Newsletter is prepared using Ventura Publisher™ Ver. 3.0, running on an IBM compatible 386/25MHz microcomputer and printed on an HP Laserjet™ III printer. Because of its mode of preparation, the Editorial Secretary requests that, if possible, all submissions to the Newsletter be made in the form of files contained on 5.25 inch IBM formatted diskettes (Either 360KB or 1.2MB) or on 3.5 inch IBM formatted diskettes (Either 720KB or 1.44MB). The following word processing programs can be accommodated: Wordperfect 4.2, 5.0 or 5.1; Wordstar 3.0, 4.0 and 5.0; Microsoft Word; XyWrite, and Multimate. Because of its widespread availability, Wordperfect 5.0 or 5.1 is preferred. Output from wordprocessing programs not listed above should be submitted in ASCII format. If possible, the submitted files should contain as few enhancements (bold, italic, centering, multiple typefaces) as possible. Drawing and images can also be directly imported, contact the Editorial Secretary for details and acceptable file formats. FAX submissions are also accepted. The FAX number for the Editorial Secretary is (510) 486-6681.

The deadlines for submissions to the newsletter are December 15, March 15, June 15, and September 15.

Lisa M. Brewer

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