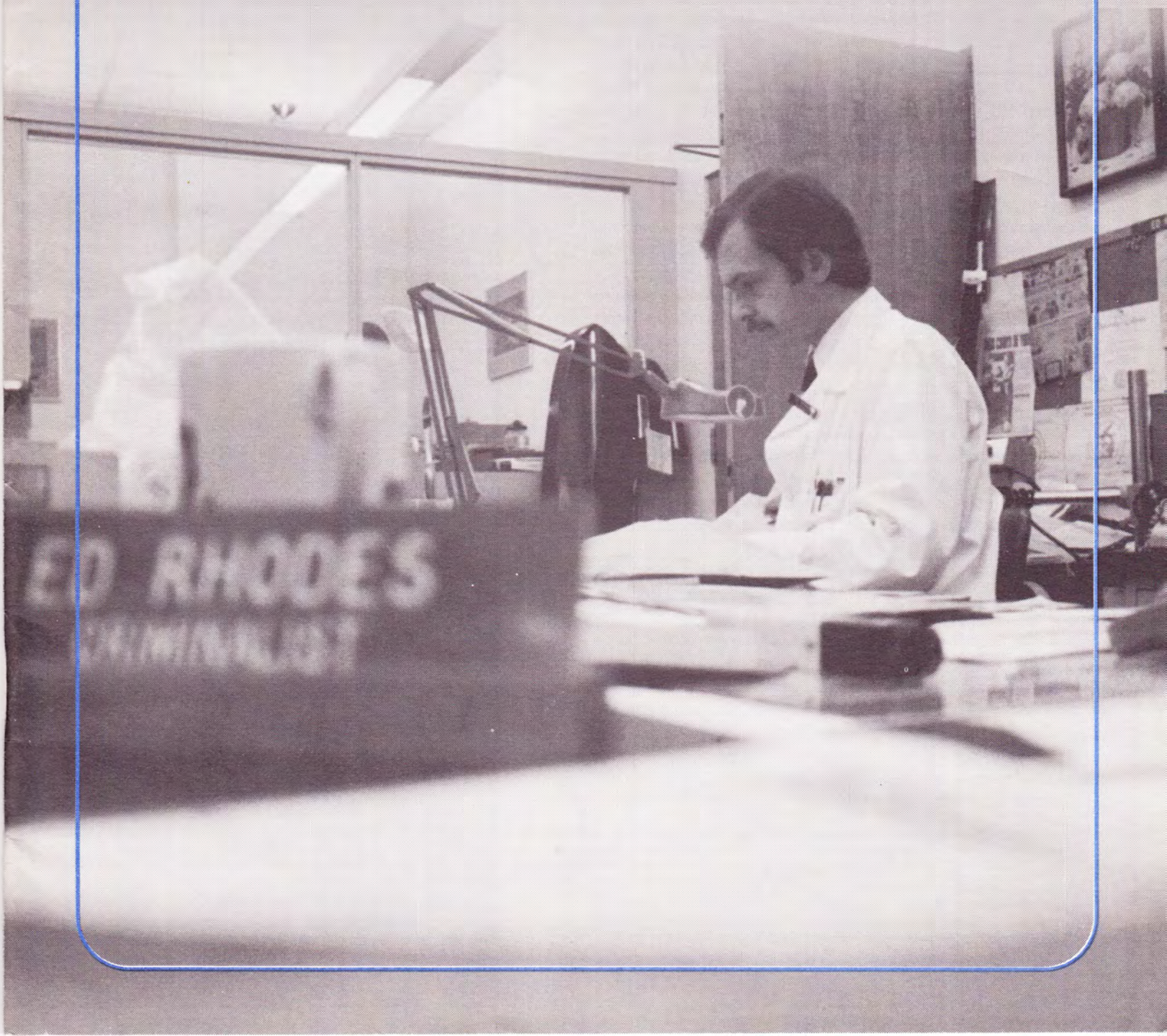
News of the California Association of Criminalists • Spring 1995

The CAC News



The President's Desk

Anyone who has passed the age of twenty-five has confronted one of those ***Great Truths:*** that life passes far too quickly. Despite this realization, we still need to remind ourselves periodically to make the most of every day we have and to appreciate the company of our loved ones and friends. Nothing brings that fact into such stark relief as the death of one of those loved ones or one of those friends, particularly if it comes at an age too young.

The death of Ed Rhodes on February 11, 1995 has given all of us who knew him and those who knew of him a reminder to slow down and consider the things that really count in life. Ed was confronted with those questions early on. He fought every day against his cancer and the toll its treatment took on his physical health. So much of his refusal to give up that fight was channeled into his work and his love for the field of criminalistics. As a teacher and mentor, he was an inspiration to many new members in our profession. He also challenged those of us who have been around for a while with his healthy irreverence for the status quo. We will miss him dearly and we dedicate this issue of the *CAC Newsletter* to his memory.

As this is my last message to you as President, I want to take a moment to thank all the people who helped to make this a very satisfying year for me. To all members who served on committees during my tenure, you have my sincere thanks for jobs well done. The real business of the Association is conducted by those committees. Without their hard work and good counsel the Board would be lost, or at least adrift. I also want to call attention to members of the Board who will be completing their terms of service: Barbara Johnson, who worked tirelessly to coordinate meetings and study groups in the South; Jerry Chisum, who completes his *second cycle* of President-elect/President/Immediate Past President; Lisa Brewer, whose able stewardship of the *CAC Newsletter* has brought terrific improvements in content and format; and lastly Jim White, who has guided the Association's financial affairs with the utmost competence and good judgement. It has been a great pleasure and an honor to work with all of you.

I look forward in May to passing the torch (but not that beautiful chain of office) to your new President, Carol Hunter, and to taking up my new role of Immediate Past President wherein one is expected, according to Jerry Chisum, to preserve an air of calm and offer sage advice.

Best regards,

The CACNews 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.

The CAC News

Spring 1995

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Notice to Contributors

This newsletter publishes material of interest to its readers and is pleased to receive manuscripts from potential authors. Meetings and course announcements, employment opportunities, etc. are also solicited. Advertisements are also accepted, although a fee is charged for their inclusion in The CAC News. Please contact the Advertising Editor for further information. Because of the computerized typesetting employed in The CAC News, we requests that where possible, submissions to the News be made in the form of IBM or MS-DOS compatible files on 5.25 or 3.5 inch floppy disks (high or low density). Text files from word processors should be saved as ASCII files without formatting codes, e.g. bold, italic, etc. An accompanying hardcopy of the file may be submitted along with the disk to illustrate the author's preference for special emphasis. Graphics, sketches, photographs, etc. may also be placed into articles. Please contact the Editorial Secretary for details. FAX submissions are also acceptable. The FAX number for the Editorial Secretary is (408) 298-7501. The deadlines for submissions are: December 15, March 15, June 15 and September 15.

Edward F. Rhodes, III
1950—1995

For those of you who did not know Ed, let me introduce him to you.

Ed was from a family in which both parents were scientists. His father was a paint chemist; his mother had a biology degree and was a teacher, then principal. From a young age his parents taught him to be inquisitive. His father would let Ed help him work on new paint formulations in his home laboratory.

Sometime in his teenage years he learned about this profession called Criminalistics. He heard about the Orange County Sheriff's Crime lab, then directed by Jack Cadman, and went to the lab for a tour. Jack told him what was necessary to pursue this career and about the program at Berkeley. Ed set his goals at this young age.

Ed began his undergraduate degree at Fullerton Community College, where he much later returned as an Instructor in the Police Science Department. He then transferred to "Cal" (UC Berkeley) to complete his undergraduate and fulfill his doctorate degree under John Thornton. Ed would tell you today that John had a great influence upon his career; they remained life-long friends. Although he assisted John in many different research projects, his doctoral thesis was in an area not well explored: handwriting. At that time there was little research into the kinetics of handwriting. Because this seemed to Ed to be the more scientific approach to the comparison of handwriting, rather that other approaches at the time, he dedicated himself to this study. He found that the kinetics of the hand have much to do with handwriting styles and repetition on certain letters and stroke styles, information that document examiners were not extremely interested to learn at that time.

For those of you who knew Ed as a friend and a colleague, his character is well known to you and needs no explanation. You already feel a loss and a void. You wish to call him once again, he is not there for you any longer. For those of you who knew of Ed's dedication to certification, you realize that we have lost a leader to this goal.

—Carol L. Hunter

Joined the CAC

While working on his PhD, Ed was TA to several of the Cal grads — you know who you were. Thus began his teaching career while cloaked as a Criminalist. Sometime during his graduate work, he joined CAC. It was also during these years that Ed was diagnosed with cancer. While studying for his PhD, he also fought for his life for the first time. Ed interned at Contra Contra County Sheriff Laboratory and there met John Murdock. John Murdock was the next great influence on Ed's career and he told many tales, all educational, about his experiences at CoCo. Diligence and thoroughness of crime scene processing is one of the greatest influences from John Murdock.

Regional Director, South, 1978-80

On Ed went in his career to Orange County Sheriff Laboratory. It seems fitting that he began his career there, after first learning about this field of Criminalistics in this very laboratory. But he didn't stay long. He moved on to Los Angeles Sheriff's Laboratory...

CAC President-Elect, President and Past President.
Ethics Committee, 1985-87

Although OCSD had many of Ed's Cal graduate colleagues, so did LASO, as well as other excellent Criminalists. He spent five years there, most of that time in the Trace Evidence section. During these years, Ed began as an Instructor at the Fullerton Community College cam-

pus in the Police Science division teaching "Crime Scene Techniques" and "Scientific Investigation", taking over for Bob Stettler upon his retirement. So here is Ed, the bench criminalist and continuing as teacher, early in his career. In 1980, Ed was elected to the President-Elect position of CAC, and he was President in 1981, and Past-President in 1982.

Co-Chair, So. Trace Study Group, 1984-88

Eventually, Ed stepped out of the bench criminalist role into a supervisory role at LASO. His goal as a supervisor was to be a barrier between administration and the bench worker. He felt strongly that the bench criminalist should be free to do his casework and not bothered with the whims of the upper Administration. And he especially understood why the trace section had a lower case completion status than the narcotics section!!

Onward for Ed. He grew tired of the commute to LA from his Orange County home, and moved on to a small laboratory— the Santa Ana Police Department. This was quite a change from the large LASD laboratory, but he found it to be a pleasant change at that. And not surprising, Ed continued his teaching role to the new Crime Scene Techs, a new program to the Santa Ana Police Department.

Certification 1986-94 CAC and ABC

In late 1984, and early 1985, Ed developed heart problems that never left him again. He would not want to speak to these difficulties. However, he continued his professional goals, in spite of how he felt on a daily basis. If you knew him and were ignorant of how he felt, then he achieved yet another goal, because he did not want you to know. He had heart surgery in 1985 and a pacemaker implanted in 1986. It was during this time that Certification was discussed and reborn. This was a strong goal of Ed's. He immediately joined the process and, along with the Certification committee, began writing the questions to submit to the testing agency.

In 1989 the Santa Ana Police Department Laboratory ceased to exist. Ed transferred back to Orange County Sheriff Laboratory, where he began his career. He continued his teaching role not only in the academy, but of the criminalists and student workers.

Ad hoc Committee on DNA Quality Assurance. Distinguished Member Award, 1991

Certification was born in California, and then began to spread nationally. Ed became the CAC representative to the national drive toward certification, the ABC. In 1991 Ed made yet another career change to San Diego Police Department. This move made him give up his teaching at Fullerton College. Of course, he did not give up his teaching altogether, and once again, he found himself an instructor to the Crime Scene Technicians, continuing to teach the necessity of diligence and thoroughness when collecting evidence at scenes of crimes. He continued his dedication to the ABC, and the travels about the country to monitor the certification tests. Ed resigned from his ongoing role in the Certification process last May, only after years of dedication to this goal.

Ed was a mentor to some of us, a teacher to many of us. He was opinionated about those ideas for which he felt strongly and knew he could affect a change. His moto was "lead, follow, or get out of the way!" He was a leader who dedicated his life to increasing the professionalism of the Criminalist. This is his legacy that will live within us all. His wish would be for us to continue to pursue these goals.

CACBits

Cigarette Butt Atlas Funded

The A. Reed and Virginia McLaughlin Endowment fund of the California Association of Criminalists, along with the Forensic Sciences Foundation, has underwritten the production of the 14th edition of the Cigarette Butt Identification Aid (CIBA) by Bob Bourhill of the Oregon Department of Forestry. Copies of the CIBA have been made available without charge to Alameda Co. S.O., ATF, CCI, Huntington Beach P.D., Kern Co. D.A's Lab, Long Beach P.D., L.A.P.D., Sacramento Co. D.A's Lab, San Bernardino Co. S.O., San Diego Co. S.O., San Francisco P.D., Santa Clara Co. D.A.'s Lab, and Ventura Co. S.O.

Oakland Criminalist Recovering

The winter sport career of **Diane Bowman**, Criminalist in the Oakland P.D. lab, which started at the ice rink during the CAC Seminar in Pasadena ended abruptly when she fell while skiing for the first time and injured her knee. We all wish Diane a speedy recovery and hope that Mary Gibbons will agree to place the GC/MS on a lower lab bench so Diane can at least do drug cases while she must remain of her feet.

Condom Lubricants Update

AVANTI condoms, a new type of condom made of polyurethane, is now on the market. [Made in the UK and distributed by Schmid Laboratories Division, Sarasota, Florida, of London International U.S. Holdings, Inc.]

I have examined the lubricant used in this brand and it is the same silicone oil, polydimethylsiloxane (PDMS), that is used in many brands of latex condoms. No intentionally-added particulates (corn starch, talc, amorphous silica, etc.) were found upon microscopic examination. Although more expensive than most latex condom brands, these condoms may be used by those who are allergic to latex. Unlike latex, polyurethane is not dissolved or weakened by oil-based lubricants such as petroleum jelly (Vaseline). Procedures for the extraction and identification of lubricant traces on sexual assault evidence items (swabs, etc.) originating from Avanti condoms would be no different from those previously reported for latex condoms.

—Robert D. Blackledge
NCISRFL-San Diego

Memorial Fund Set Up

On Feb. 22, CAC President Mary Gibbons announced the establishment of the **Edward F. Rhodes III Memorial Fund**. His wife, Gloria Rhodes, has requested that in lieu of flowers, donations be made in Ed's name to the CAC for the purpose of establishing a memorial fund. Donations may be directed to Jim White, Treasurer, California Association of Criminalists, c/o Orange Co. Sheriff-Coroner, 320 N. Flower St., Santa Ana, CA 92703.

Section Reports

Northern Section

Diane Bowman of the Oakland Police Department hosted the December 8, 1994 dinner meeting which was attended by 19 individuals. The guest speaker was **Mark Lockwood**, an EMT and instructor at Modesto Community College. His emphasis is in training EMT's in how crime scenes are processed so that they do not unnecessarily compromise a crime scene.

The Computer Study Group, chaired by **Pete Barnett** and **Steve Shaffer,** has been meeting regularly since its inception. Issues have included useful ideas such as photo imaging on CD-ROM. Other issues to come include Crime Scene Drawing on computer.

The Trace Evidence Study Group, chaired by Diane Bowman and Pete Barnett, sponsored a Knife Wound in Clothing Workshop taught by **Anatoly Zolotaryov**. This workshop was an introduction into the area including knife terminology and basic wound examination. The workshop was attended by 13 individuals and was well received. Further workshops which would deal with more in-depth area of the topic are possible.

Southern Section

The Serology Study Group, chaired by **Dave Stockwell** and **Dean Gialamas**, reviewed the papers presented at the CAC Fall 1994 Seminar. "Against All Odds: Inside Statistics", the first of a 26 video tape series was shown to the group. This tape covered the introductory discussions of what statistics involves. Future topics of interest include: basic biochemistry, basic statistics, identification of tissue samples, case approach, bloodspatter issues, DNA contamination/sample handling issues. Seven individuals were in attendance.

The Drug Study Group, chaired by **Pennie Laferty**, discussed quality assurance, and the separation of d and l methamphetamine by GC-MS. Six individuals were in attendance.

The Trace Study Group, chaired by **Lynne Herold** and **Wayne Moorehead**, appointed **Pennie Laferty** as co-chair. **Ed Jones** presented a rape case with eleven types of trace evidence which linked the suspect to victim and the crime scene. Lynne Herold discussed presentation of testimony in two foreign countries. Future topics of interest include: proposed tours for the next year or two (fireworks factory, petroleum refinery, paint manufacturer, Redkin hair care products facility, paper manufacturer), Back to Microscopy (CCI Basic Microscopy class in January, McCrone Research Institute Classes in March, Palynologist lecture/workshop, botanical/wood microscopy lecture/workshop), methodology (discussion of methods used for paint, hair arson, glass, soil, fibers, explosives, GSR and unusual cases), compile laboratory standards list (paints, glass, fibers, hair, soils, explosives, wood, pollens, building materials, safe insulation, liquid accelerants, and list of spectral data), compile list of microscopy journals subscriptions.

Jobs • Meetings • Courses

Positions Open

Firearms/Toolmarks Examiner (Forensic Scientist)

Starting salary $24,515 - $26,800

Qualifications include knowledge and experience in forensic principles, practices, procedures and techniques used to prepare, examine and analyze firearms and toolmark evidence and their identification. Court qualified to present expert testimony in forensic firearm/toolmark cases. A bachelor's degree in physical, natural or forensic science, experience with DRUGFIRE and affiliation with AFTE is prefered. Selected candidate must pass a background security clearance check and have a valid driver's license. Apply by June 15, 1995

For applications call (804) 786-3910 or
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Division of Forensic Science CF130
Commonwealth of Virginia
Department of General Servicies
Human Resources
805 East Broad Street Rm. #117
Richmond, VA 23219

Forensic Scientist 1

Salary $2245 - $2865 per month

Performs begining level laboratory analyses of physical evidence using accepted scientific methods. Interprets analytical results and prepares written opinion reports. Testifies as an expert witness in courts of law.Bachelor of Science degree or higher in forensic science or a natural science which includes a minimum of 20 semester hours or 30 quarter hours of chemistry and five semester hours or eight quarter hours of physics. Location: Downtown Seattle. Open until further notice. See Forensic Scientist 3 for address.

Forensic Scientist 2

$2470 - $3162 per month

Performs laboratory analyses of physical evidence using accepted scientific methods. Interprets analytical results and prepares written opinion reports. Testifies as an expert witness in courts of law.Bachelor of Science degree or higher in forensic science or a natural science which includes a minimum of 20 semester hours or 30 quarter hours of chemistry and five semester hours or eight quarter hours of physics.

In addition, two years full time paid technical experience in an analytical, research or crime laboratory. One year of which must have been in a forensic sciences laboratory preforming analyses of physical evidence and testifying as an expert in courts of law.

An advanced degree in forensic science or a natural science may substitute for one year of experience in an analytical, research or crime laboratory. Open until further notice. To fill vacancies in Seattle, Everett, Tacoma, Kelso, Kennewick and Spokane. See Forensic Scientist 3 for address.

Forensic Scientist 3

$3011 - $3852 per month

Performs complex laboratory analyses on physical evidence. Devises analytical approach to casework which may include method modification. Interprets analytical results, prepares written opinion reports, and testifies as an expert in courts of law. Complex analyses, examinations and manipulations, or applied research is required. or a single definite conclusion is not possible and a weighted conclusion is warranted, or which involves reconstruction of an event or a series of events.

In addition, two years experience as a Forensic Scientist 2 or three years of full time paid experience in a forensic science laboratory performing analyses of physical evidence which included testifying as an expert witness in courts of law. Open until further notice. To fill vacancies in Seattle, Everett, Tacoma, Kelso, Kennewick and Spokane. Open until further notice. The following address is for Forensic Scientist 1,2 and 3:

Apply to:
Department of Personnel
600 South Franklin
P.O. Box 47561
Olympia, WA 98504-7561
(206) 763-5368 Or (206) 753-3758
TDD (206) 753-4107

Forensic Scientist

The State of Wisconsin Department of Justice is now recruiting for the position of Forensic Scientist within the Crime Laboratory System. Current vacancies are Latent Fingerprint Examiner and Firearms/Toolmarks Examiner. In addition, a list of eligible candidates in all other forensic disciplines will be established for future vacancies should they occur. Applications will be accepted on a continuous basis until the needs of the Department are met. For further information, please contact the Department of Justice Personnel Office, 123 West Washington Avenue, Room 415, P.O. Box 7857, Madison, WI 53707-7857, (608) 267-1332.

Frank Cassidy Calls it a Career

The educated person adapts and grows with the inevitable changes of their lifetime; I want to tell you about my friend Frank Cassidy, recently retired from his latest career as Senior Criminalist.

I met Frank at Aerojet General Corp. in Azusa, CA. Frank was from "Big Sky" country, graduating from Scoby High School in Scoby, Montana. He then went into the Air Force serving on a B-25 medium bomber in the Pacific Theatre of Operations. He later earned a degree in chemical engineering at Gonzaga University in Spokane.

At Aerojet, he worked in a restricted area called the "test site". Once in those early days, a new rocket was being tested and it lurched free, flashing over Foothill Blvd. and crashing into Azusa Mountain two miles away (I think that's why all rockets are tested in horizontal mode now).

Frank worked on exotic stuff, He'd bring me degraded plastic pans from torpedoes, heat exchanger fluids from rockets, and components out of satellites. I'd do chemical testing using IR, GC, NMR (In my case NMR meant no more results), I worked with him there for five years.

Just after the company moved him to Sacramento, a contract cutback came out of DOD. Frank was now out of a job, just like so many chemists and engineers in 1971. He had four young children and a will to carry on. Among his newly developed talents were — enrolling in business college, learning to bake breads, back yard farming (not gardening), and rebuilding surveyed cars purchased from state auction. Frank never quit. He just found other opportunities.

DAVE BARBER

In that time our families visited and went on trips, campouts, and shared books (we still have one of their beautiful sets now used by our children). Frank's charming wife Ann, their two daughters, and two sons were part of our extended family. In 1972, Frank tested for a criminalist opening with DOJ. He was assigned to the San Luis Obispo laboratory and later moved to the full service lab in Santa Barbara. In this setting he showed his Renaissance Man talents.

He was always adapting common items to new uses, re-engineering equipment, and applying his broad experience to many interests. He studied geology and astronomy. He wrote a total of *89* articles in various journals covering subjects on blood alcohol, chewing gum pyrolysis, bullet trajectory, crime scene documentation, and many other topics. He was an early instructor in DOJ microscopy and instrumentation courses. He never stopped giving.

His retirement party was attended by many friends coming from various laboratories and agencies. The group presented him with a Celestron C-90 telescope, which he will use to find the next comet. CCI staff presented him with a signed group photo and a CCI deerstalker cap. Frank has a nice formula for real success:

Make your own choices • *Do good*
Make responsible choices • *Have fun.*

—Lou Maucieri
CCI Sacramento

Court of Appeal Gives Criminalists a Cure for Ruined Vacations

No criminalist with many years of service has been spared the spectre of a ruined vacation or cancellation of a long awaiting training class when a court case, which has been trailing for months, finally gets underway just in time for your testimony to be needed right in the middle of your planned absence. No supervisor has escaped the gray hair brought on by last minute reanalysis of a sample originally performed by a vacationing criminalist. The California Court of Appeal (Fifth District) has provided us all a bit of breathing room with their decision in *People v. Parker*[1].

FACTS

Defendant Warren DeWayne Parker was charged with sale of cocaine base and possession for sale of cocaine base based upon his alleged sale of material on October 19, October 30, and November 1 to an undercover informant for the Bakersfield Police Department. The suspected controlled substances were submitted to the Kern County Regional Crime Laboratory and were analyzed separately, the October 19 sample by one criminalist, the October 30 and November 1 samples by another.

The criminalist who analyzed the October 19 sample testified at trial regarding her determination of the weight and controlled substance, cocaine base, contained in the sample. She also testified that the substances seized on October 30 and November 1 were analyzed by one of her colleagues, whose handwriting she recognized. The second criminalist's reports were admitted into evidence and the first criminalist allowed to testify from those reports regarding the controlled substance identified, the prosecutor relying of Evidence Code Sections 1280 (record by a public employee) and 1530 (cope of a writing in official custody).

LAW

Evidence Code 1280 provides an exception to the hearsay rule for a writing made as a record of an act, condition or event when offered to prove the act, condition or event (a) if the writing was made within the scope of duty of a public employee, (b) it was made at or near the time of the act..., (c) the sources of information and method and time of preparation were such as to indicate trustworthiness.

APPEAL

On appeal, the defense argued that the second criminalist's reports were inadmissible as the defense had no opportunity to cross-examine the second criminalist. The defense concedes the reports were by and within the scope of duties of a public employee and were made at or about the time the analysis was done. They attack the report's trustworthiness citing a 1977 Court of Appeal case[2] which indicates the overriding consideration to be trustworthiness.

The defense argues there was no testimony regarding the second criminalist's qualifications to offer an expert opinion, about the laboratory's hiring practices and requirements, about the tests performed, or the methodology employed in the analysis. They further criticize the report for having no information regarding the types of analyses performed or procedures used, even though the first criminalist testified she had checked the laboratory notes relating to the second criminalist's analysis.

The court noted that during her testimony, the first criminalist offered information on the laboratory's evidence handling procedures and the tests she performed and that she has reviewed the second criminalist's notes and that there was nothing out of the ordinary in them with regard to the analyses.

The court of appeal observed the trustworthiness requirement "is a matter within the trial court's discretion"[3] and that the trial court was obviously satisfied as to the trustworthiness of the second criminalist's reports based upon the first criminalist's identifying the reports and detailing the tests and procedures used by all criminalists employed by the laboratory. Further the trail court's finding of trustworthiness is amply supported by sufficient evidence independent of the reports themselves, hence the trial court did not abuse its discretion in admitting the reports.

The court further noted that evidence is admissible under Evidence Code 1271, the business record exception, however this requires a witness to testify as to the identity of the record and its mode of preparation in every instance. In contrast Section 1280, as does existing law, permits the court to admit an official record or report without necessarily requiring a witness to testify as to its identity and more of preparation of the court takes judicial notice or if sufficient independent evidence shows that the record or report was prepared in such a manner as to assure its trustworthiness.

As a matter of practice in San Bernardino, we have send a supervisor on several occasions to testify based upon another analysts reports and/or notes and the tactics of each prosecutor vary somewhat. Some use the supervisor to establish the three criteria set forth in EC 1280, i.e. public employee, at or about time of analysis, and that the tests run are the usual ones employed. Other have used the supervisor to establish that the notes, rather than the report, are an official record and then based upon the results recorded within the notes, ask the supervisor for an opinion regarding the identity of the substance based upon the supervisor's qualifications and experience.

The questionnaire developed by the District Attorney's Office for officers' use in interviewing a criminalist about an analysis under Proposition 115, has reduced the court appearances and streamlined the system considerably at the preliminary hearing stage. *People v. Parker* has been very valuable in moving cases along in a timely fashion at trial where the analyst is "unavailable", both in relatively straightforward controlled substance cases and in clandestine laboratory cases where the opinion that the site investigated is a clandestine drug laboratory is a crucial and less obvious element of the case. Even though in practice here in San Bernardino, a "Parker case" has used a supervisor to testify in the analyst's stead, we feel it is a good trade off to a dismissal and refiling or yet another postponement of a trailing case, particularly in as much a getting a judge to take judicial notice of a laboratory report seems extremely unlikely.

[1] 8 Cal.App.4th 110.

[2] *People v. Flaxman*, 74 Cal.App. 3d Supp 16,20 and 141 Cal.Rptr. 799.

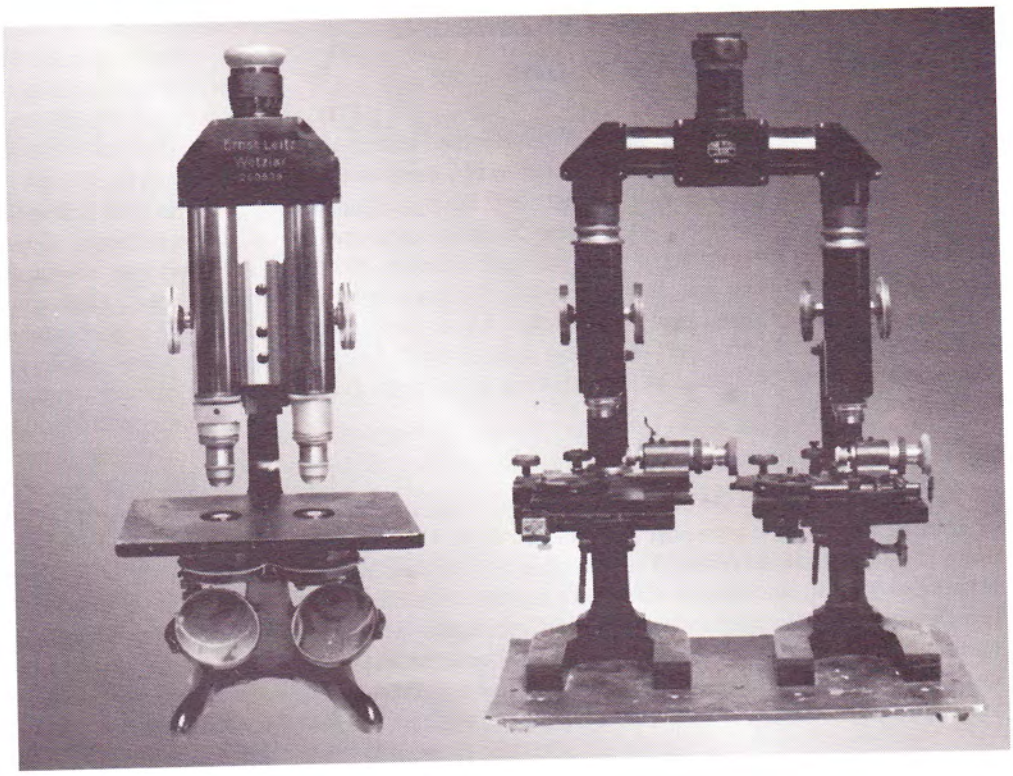
[3] *People v. Joiner*, 54 Cal.App. 3d 910,917 and 127 Cal.Rptr. 166.

—Hiram K. Evans, M.Sc, F-ABC
San Bernardino County Sheriff's Department
Scientific Investigation Division
San Bernardino, CA 92415-0056

Diversions

What they used . . .

At left is Paul Kirk's original comparison microscope, ca.1920's, purchased from his estate. On the right is E.C. Crossman's late 1920's copy of Goddard's comparison microscope. This specimen is possibly the last remaining one in the U.S. *Courtesy Paul Dougherty Collection.*

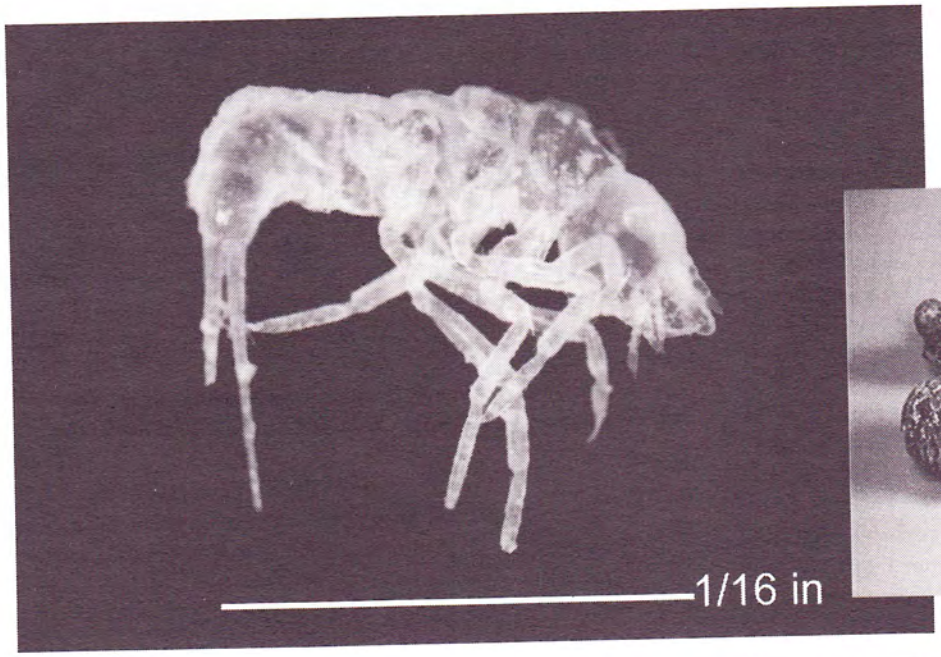


TOM CULBERTSON

Mysteries From the Miocene Era

The tiny microfossil pictured below is actually a 15 million year old predaceous diving beetle. Having been completely converted to glass, this ancient specimen is preserved perfectly, right down to the antennae on its head, seen on the right end. It was recovered from unusual nodules like those displayed at right, found in the Calico Mountains of California. These rock-like objects are pricipally of calcium carbonate but also contain significant quantities of petroleum, which can be observed and smelled as the nodules are dissolved away with acid, freeing startling creatures such as you see below.

—Collection of Edwin L. Jones, Jr.



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For more information about how to join, please contact
Lisa Skinner, Membership Secretary
Santa Clara Co. DA's Crime Lab
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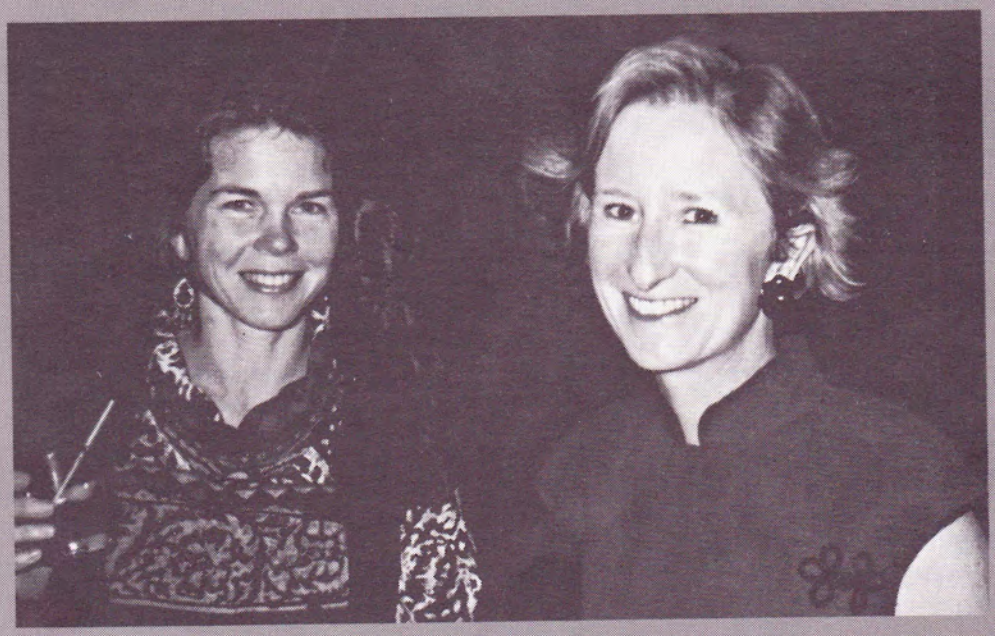
Scenes from a Seminar



Photographs submitted by Carol Hunter

(CAC Members Only)

TRAINING & RESOURCES VIDEO

SEROLOGY

Back to Basics Series:

TAPE 1:
- Electrophoresis Basics — *Ron Linhart*
- Glycogenated Vaginal Epithelia —*Ed Jones*
- Erythrocyte Acid Phosphatase — *Berni Rickard*
- Phosphoglucomutase —*J. White / M. Hong*
- Haptoglobin — *David Hong*

TAPE 2: • Immunology — *David Stockwell*
TAPE 3: • Gm / Km —*Stockwell / Wraxall*
TAPE 4: • Peptidase A — *Colin Yamauchi*
TAPE 5: • ABO —*Jeff Thompson*
TAPE 6: • Saliva —*Terry Spear* (incl DNA Kelly-Frye/Howard Decision)
TAPE 7: • Presumptive Tests/Human Determination—*Peterson/Mayo*
TAPE 8: • Gc—*Devine/Navette*
TAPE 9: • Statistics—*M. Stamm*
TAPE 10: • Fibers—*Mumford/Bailey/Thompson*

Also available:

Population Genetics & Statistics Course, *Dr. Bruce Weir, Instructor*
Eight two-hour tapes, PLUS the course notebook.

Bloodspatter Lecture — *Fall '92 CAC Meeting (Knowles)*
Bloodspatter Lecture — *J. Chisum*
Micro. Exam. of Sex Assault Evidence—*Ed Jones*
DNA Workshop — Spring 1993 CAC Meeting, 4 Tapes

GENERAL INTEREST

TAPE 1:
- ABC News 9/23/91: "Lab Errors"
- CBS News 4/27/92: "Animation Reconstruction"
- Alex Jason / Jim Mitchell: "Trial Animation"

TAPE 2: • 48 Hours 9/25/91: "Clues"

Founder's Lectures by: Stuart Kind— Fall '93
Walter McCrone—Spr '90
J. Osterburg—Fall '91
Lowell Bradford—Spr '93

"Against All Odds—Inside Statistics" (13hours)

FIREARMS / TRACE EVIDENCE

Basic Microscopy Lecture—*Ed Rhodes, Instructor,* Two tapes
Tire Impressions as Evidence—*Lawren Nause, RCMP, Instructor*
Five two-hour tapes PLUS the course notebook
(from the three day course at SBSD)
Evaluation of Lamp Filament Evidence—*Lowell Bradford, Instructor*
FTIR Lecture—*Wayne Moorehead, Instructor*
Gunshot Residue Lecture—*Ray Calloway, Aerospace, Instructor*
Footwear—*Bodziak, Instructor,* Two tapes
Footwear Mfg. Tour —Van's Shoes
Glass Methods—*Bailey / Sagara / Rhodes*
Forensic Firearms Evidence —*L. Haag*
Deadly Effects: Wound Ballistics—*A. Jason*

Please address requests to

Dean Gialamas , T&R Chair
c/o Cal Lab of Forensic Science
3890 Prospect Ave. Ste. A
Yorba Linda, CA 92686

Saliva Mapping Followed Up

As a follow up to the "Saliva Mapping" (Houde, *CAC News*, Fall 1993) procedure, I did some testing on other body fluids. This testing consisted of two sets of known samples of saliva, semen, semen-free vaginal swabs, sweat, urine, feces, blood, and a negative control. One set of samples had been kept frozen and the other set at room temperature for approximately one and one half years. Out of curiosity, I also tested ketchup and mustard stains that had been stored at room temperature.

PROCEDURE: I followed Houde's technique, which consists of overlaying the areas to be tested with starch-impregnated filter paper, dampening with distilled water and press ing firmly to obtain good contact with the stained material. The paper is allowed to stand for approximately 20 minutes, and then incubated in a moisture chamber at 37 deg.C for one hour. It is then removed from the incubator and allowed to dry. The paper is sprayed with a solution of 1% iodine (Lugol's) in water. Positive results are visualized by observing the colorless areas. Negative areas stain blue with a starch-iodine mixture.

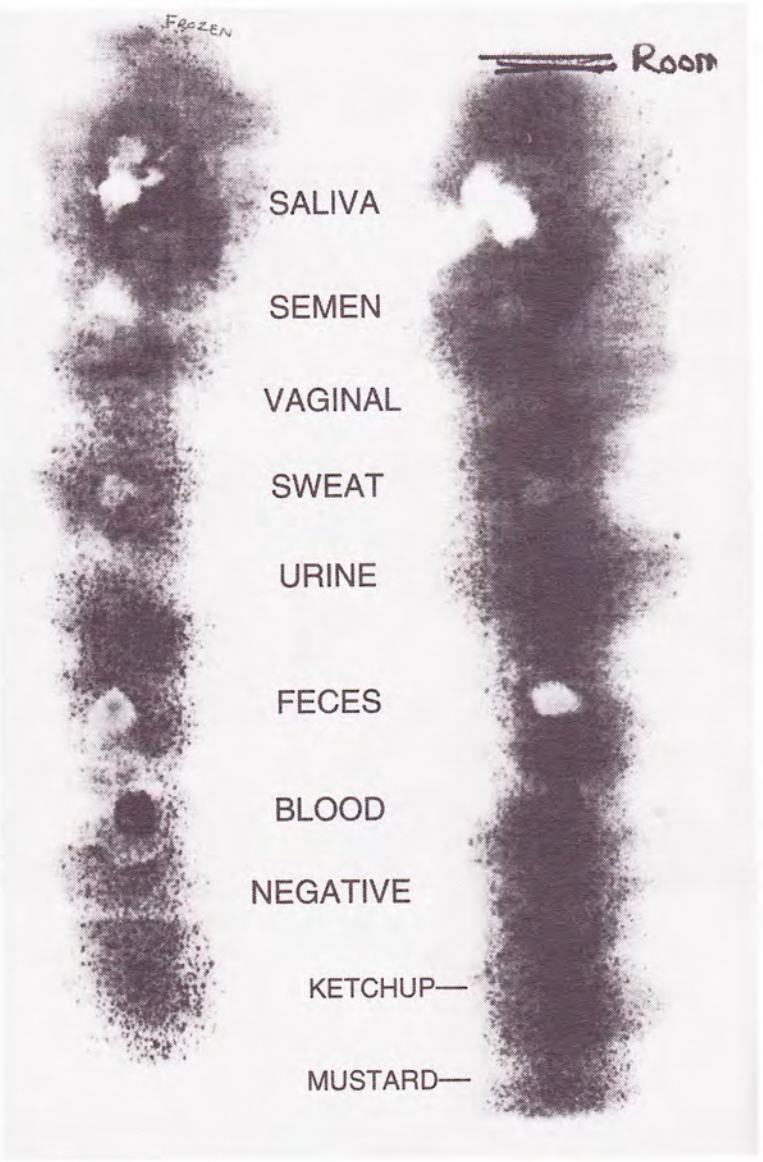
RESULTS: Results were graded from 0 to 4, with 0 being negative and 4 being a very strong reaction (white area).

Frozen Sample: Saliva - 4, Semen - 3, Vaginal - 1+, Sweat - 2, Urine - 0, Feces - 2, Blood - 1, Negative Control - 0.

Room Temperature: Saliva - 4, Semen - 2, Vaginal - 1, Sweat - 2, Urine - 0, Feces - 2+, Blood - 1, Negative Control - 0, Ketchup - 0, Mustard - 0.

CONCLUSIONS: Although the body fluids other than saliva produced some reactions under these test conditions, the results would not be mistaken for those of saliva.

Margaret Schaeffer
Ventura Sheriff's Crime Lab

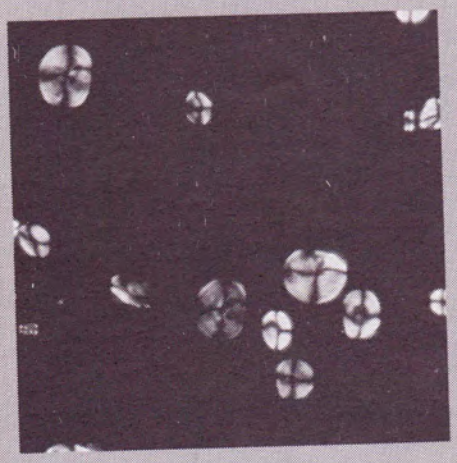


Frozen Sample Room Temp

Starch Atlas

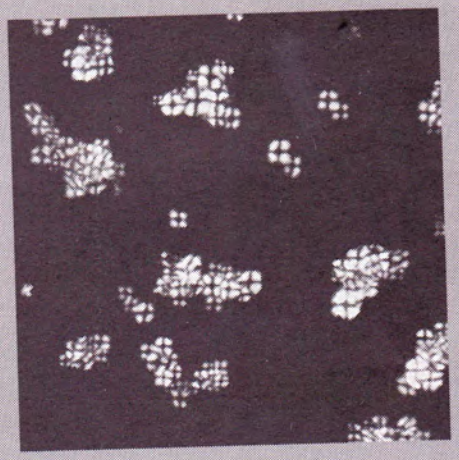
Featured on these pages is the contents of our library of starch reference particles. Each sample was photographed under crossed polars, with a final magnification of 375x as published here.

—John Houde
Ventura SO

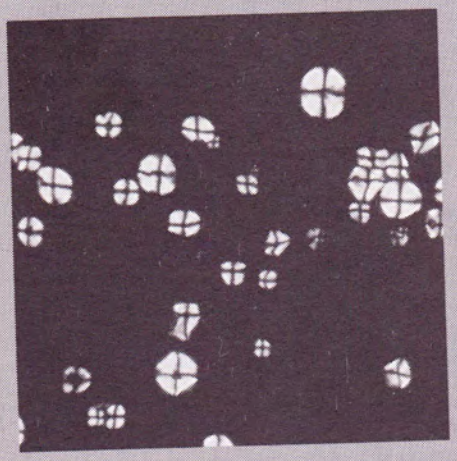


Barley
Hordeum sativum Jess.

Bean
Phaseolus sp.

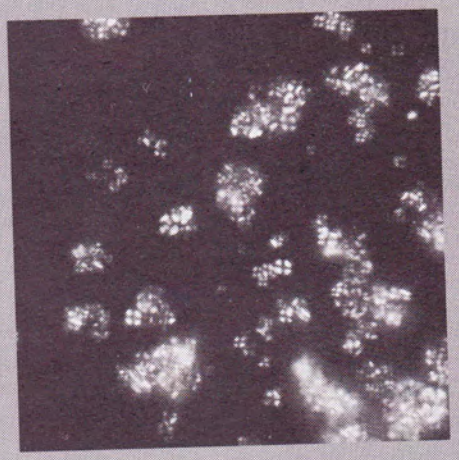


Buckwheat
Fagopyrum esculentum Moench.



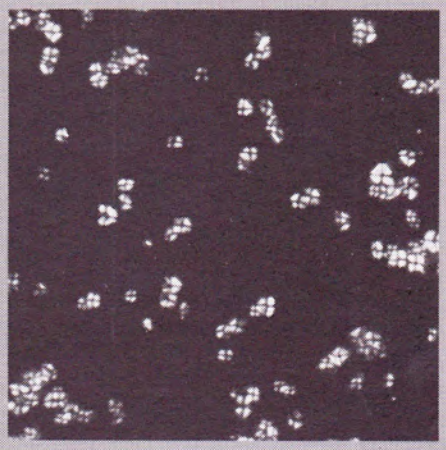
Corn
Zea mays L.

Ginger
Zingiber officinale Roscoe



Oat
Avena sativa L.

Wheat
Triticum sativum Lam.

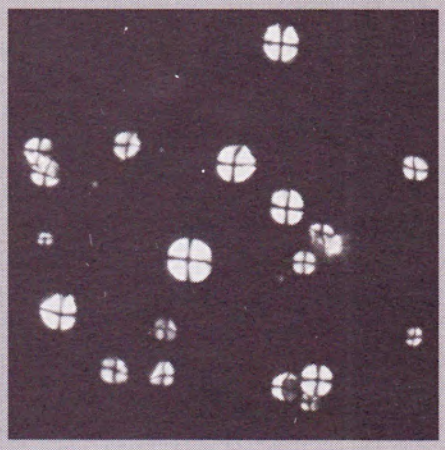


Rice
Oryza sativa L.

Pea
Pisum sativum L.

Potato
Solanum tuberosum L.

Rye
Secale cereale L.



Tapioca
Manihot ultissima Pohl.

A Review of the Trace Metal Detection Technique (TMDT) and the Suitability of 8-Hydroxyquinoline as an Investigative Tool

Brian Burritt[1] and **Louis A. Maucieri**[2]

ABSTRACT

The Trace Metal Detection Technique, or TMDT, is a chemical method used to visualize the latent image of trace metal ions transferred during the contact of a metal object and another surface. This technique is commonly used to determine whether a person has recently held a handgun. The subject's hands are sprayed with a 0.1% solution of 8-hydroxyquinoline in isopropanol and viewed with an ultraviolet light. Previous concerns over possible health hazards of this reagent are addressed in the light of recent information. This reevaluation suggests that the reagent should not be barred from use as it has not been shown to be a carcinogenic or particularly hazardous substance.

INTRODUCTION

In 1930, Edmond Locard described what has come to be known as the Locard Exchange Principle, which states that if two objects come into contact with each other, there will be two-way transfer of material between them. This principle becomes important in criminal investigations when an attempt is made to establish a connection between two or more elements of a crime, i.e. a suspect with a crime scene, a victim with the suspect, or a suspect with a weapon used in the crime. While this concept is generally considered to be true, due to the small amount or nature of the material transferred, it may not always be detectable. The key for the Forensic Scientist is developing techniques that will visualize certain types of trace evidence that would otherwise be invisible.

A chemical method exists that can be used to visualize the latent image of trace metal ions transferred during the contact of a metal object and another surface. This method is called the Trace Metal Detection Technique, or TMDT. The most common application of this technique has been to help determine whether a person was recently holding a gun or some other type of metal object. In general, the technique involves spraying the area to be examined with a TMDT reagent. Different reagents will chelate with some metal ions that may be present, producing complexes that are either colored under normal light or fluorescent under short-wave ultraviolet light. Observing this reaction indicates that the surface was in contact with a metal object. The observed pattern may indicate the type of object. It is possible in many cases to distinguish between the patterns produced by different types of metal objects, i.e., a handgun vs. a pipe, and in special cases, to identify certain class characteristics of the metal object.

The U.S. Department of Justice published the first account of the use of TMDT for law enforcement purposes[2]. This manual described the use of a solution of 8-hydroxyquinoline (8-HQ) (Fig. 1). This compound is also known as 8-Quinolinol; oxine; and hydroxybenzopyridine. When reacted with certain metal cations, 8-HQ may form a chelate complex that is fluorescent when irradiated with short-wave ultraviolet light. The fluorescent pattern produced can then be photographed[3]. This reagent was found to react with a variety of common metals.

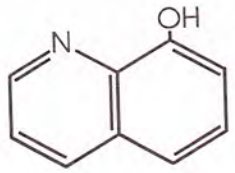


Fig. 1: 8-hydroxyquinoline

Some examples of fluorescent colors produced by various metals are:

Steel-Iron	Blackish Purple
Brass-Copper	Purple
Galvanized Iron (Tin)	Bright Yellow
Aluminum	Mottled Dull Yellow
Lead	Buff (Flesh Tone or Tannish)[2]

8-HQ itself has a slight yellow fluorescence. This provides a background against which the other fluorescent colors are silhouetted.

Although 8-HQ was an effective TMDT reagent, problems arose because of the sensitive nature of fluorescence photography and the difficulties involved in using this technique in the field. Because of these difficulties, several researchers sought alternate TMDT reagents that would produce a colored compound under visible light. In 1976, Goldman and Thornton published the results of their investigation of 3-(2-pyridyl)-5,6-diphenyl-1,2,4-triazine-p,p'disulfonic acid, disodium salt trihydrate, also known mercifully as PDT or ferrozine[4]. This reagent reacted with ferrous cations and produced a magenta colored complex. Visualization of the pattern did not require the use of ultraviolet light and thus eliminated some of the problems associated with the use on 8-HQ.

Because PDT could only be purchased as the disodium salt, it required the use of a polar solvent such as water or methanol. Pattern interpretation was difficult, because, when sprayed on the hands, the solution tended to run and distort the pattern. A compound identical to PDT, except that it lacked the sulfonic groups on the benzene ring, was synthesized by Thornton and Stoney in 1977[5]. This compound could be dissolved in a volatile solvent such as acetone. The high volatility of the solvent reduced the amount of running and improved pattern resolution significantly. A study by Lee investigated the improved sensitivity of PDT when used with a reducing agent that shifted ferric ions to ferrous ions[6]. He also described the interference effects of other metals on the use of PDT.

While PDT eliminated the problems associated with the use of ultraviolet light, it could only detect iron. Searching for a test with broader application, the use of 2-nitroso-1-naphthol as a TMDT reagent was described in two separate papers[7,8]. This compound produced a deep green color when reacted with a variety of common metals such as iron, copper, and galvanized zinc. All the colors produced could be seen under visible light. Although 2-nitroso-1-naphthol reacted with a variety of metals, it was significantly less sensitive than 8-HQ.

Even though several other reagents had been evaluated, 8-HQ remained the most commonly used TMDT reagent. It provided the best combination of sensitivity and the ability to react with a variety of metals.

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EXPERIMENTAL

Prior to any spray applied to a subject's hands, it is advisable to photograph each to reveal any injuries or possible existing marks. A stock solution of 0.1% 8-HQ in isopropanol is prepared for use with a spray applicator having no metal parts. A light spray is applied covering the front surface of the subject's hand and the back of the web area of the thumb for a possible overhang mark from a semiautomatic pistol. The hands are held vertically so that the spray will not puddle. Drying of the alcohol solution is hastened by the subject waving his hand back and forth.

In a darkened area, the hands are illuminated with short-wave ultraviolet light. Ambient light can be blocked by using a cardboard enclosure around the hand. A 35mm camera on a tripod mount is used for documentation. The UV lamp should have an exciter filter and the camera should be equipped with a barrier filter to block any reflected UV light. For our tests Ektachrome 200 ISO was exposed at various settings near f/2.8 at 1/2 second. Bracketing should be used to ensure adequate documentation. Some empirical tests should be done by those using the technique in order to determine the most effective camera settings for their equipment.

Figures 2-6 illustrate some of the different types of patterns that can be produced by handling different metal objects. All the items were held for three minutes, then the hand was sprayed with a light coat of 0.1% 8-hydroxyquinoline in isopropanol and photographed.

Fig. 2a
.45 Colt semi-automatic pistol

Fig. 2b
Pattern produced after holding item in 2a.

Fig. 3a
Mod. GT 27 .25 cal with pot metal frame and broken grip.

Fig. 3b
Pattern produced after folding item in Fig. 3a.

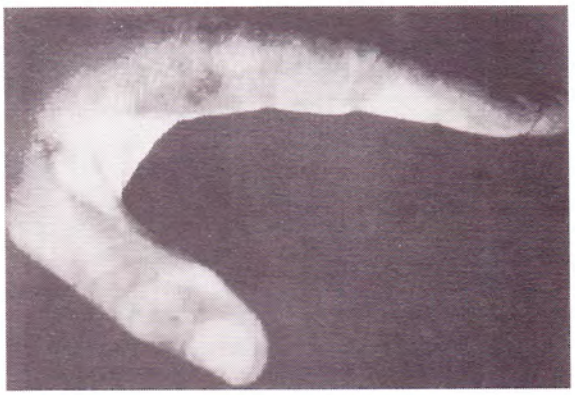

Fig. 3c
Pattern on web of hand produced by metal overhang on item in Fig. 3a.

Fig. 4a
Sturm Ruger .357 magnum revolver with blued steel frame.

Fig. 4b Pattern produced after holding item in Fig 4a.

Fig. 5a 1/2" galvanized steel pipe

Fig. 5b Pattern produced from holding item in Fig. 5a

Fig. 6a 1" copper pipe.

Fig. 6b Pattern produced after holding item in Fig. 6a under short-wave UV light.

QUESTIONS OF POSSIBLE CARCINOGENICITY

Concern over the use of 8-HQ developed after the publication of a study by Hueper in 1965 that suggested it might be a carcinogen[9]. Subsequent studies were performed in an effort to confirm or refute this conclusion. In 1980, it appeared on a list, generated by the California Department of Justice, of possible carcinogenic chemicals and was thus banned from use in the California Department of Justice laboratories. Uncertainty about the possible carcinogenicity of 8-HQ became wide-spread and many additional laboratories nationwide discontinued its use.

The concern was considerable, but the evidence that 8-HQ was a carcinogen was minimal and equivocal at best. A review of the carcinogenic data on 8-HQ published by the World Health Organization's International Agency for Research on Cancer (IARC) in 1976 stated that based on the studies that had been done, no evaluation could be made[10]. A National Toxicology Program study sponsored by the U.S Department of Health and Human Services and published in 1985 stated that, "Under the conditions of the study, there was no evidence of carcinogenicity[11]".

Under the State of California Safe Drinking water and Toxic Enforcement Act of 1986, also known as Proposition 65, the Governor must annually publish a list of all chemicals known to the state to cause cancer or reproductive toxicity[11]. While the list includes such commonly encountered chemicals as tobacco smoke, saccharin, and unleaded gasoline fumes, it does not include 8-HQ.

Far from being treated as a highly carcinogenic chemical by the Food and Drug Administration, 8-HQ can be found in at least three over-the-counter medical products (Fig. 7). The product New Skin, which has an 8-HQ concentration of 1% (ten times greater than solutions used for TMDT tests), is marketed as a liquid bandage and is designed to be sprayed on open wounds. This product has been formulated and sold since 1900. Currently, distribution is about 600,000 containers annually. Another topical pharmaceutical is Burntame, made by Otis Clapp Co. Burntame is a spray that is designed to treat sunburns, and contains 0.5% 8-HQ as an antimicrobial. It also has been sold for many years. Lastly, the product Foille, which is manufactured by the Blistex Corp. is a topical antiseptic and contains from 0.1 - 0.2% 8-HQ. It can be purchased as a spray or an ointment, and has been sold for over thirty years with current annual sales of approximately 250,000 containers. Interestingly, these over-the-counter pharmaceutical products, with annual sales close to 1 million containers, contain concentrations of 8-HQ at least as great as suggested for forensic use, and are designed to be used in an identical manner as the TMDT test, that is, a direct spray onto the skin.

Fig. 7: Three over-the-counter pharmaceuticals containing 8-hydroxyquinoline

QUESTIONS OF POSSIBLE TOXICITY

8-Hydroxyquinoline does not appear to pose a toxicity threat through its use as a TMDT reagent. The Merck Index lists the LD20 as 1,200 mg/kg for guinea pigs. Considering that a typical application is less than 1 ml of a 0.1% solution, no more than 1 mg of 8-HQ would be applied in a normal test. Assuming a worst case scenario in which 100% of the compound sprayed during a TMDT test was absorbed into the skin of the person being tested, 84,000 consecutive tests would have to be performed to reach the same level in an average 70 kg person.

DISCUSSION

The situation with 8-HQ as a TMDT reagent is a case with a "negative corpus". The absolute absence of a hazard is difficult to demonstrate, making it almost impossible to overcome all concerns about potential hazards once they have been raised. The trend of information with 8-HQ has taken it from a suspected carcinogen to a questionable hazardous substance. Presently many laboratories nationwide have refrained from using 8-HQ while questions persist about whether it represents a substantial health hazard to laboratory personnel. As a result of unsatisfactory results obtained when using other TMDT reagents mentioned above, many laboratories have discontinued the use of the test altogether. Thus, much of the Forensic Science community is being deprived of an effective investigative tool.

Potential hazard questions arise from the effects not so much on the individual being tested who, under normal circumstances, would probably not be the subject of this test more than once or twice in his life, but from the effects on investigative personnel who may be more frequently exposed during evaluation and testing procedures. There are many simple and effective safety procedures that could be used during the testing process that would reduce the amount of exposure of 8-HQ to all involved. While it is not necessary to use all of these safety procedures to provide a safe environment, they could all easily be used by those seeking maximum protection. The subject whose hand is sprayed should immediately, after proper documentation of the results, wash his hands thoroughly. If possible, the test should be performed with both the hand or surface being tested and the spray bottle in an enclosure, preferably a fume hood, in a well ventilated room. If the test is done outside the laboratory, it should be applied away from other people and outdoors to allow rapid diffusion of the spray. Furthermore, protective gloves could be worn by the tester, and protective eye glasses and simple face masks could be worn by both participants to reduce exposure to the aerosol. These are all common containment and control measures that are applicable to the use of any potentially hazardous substance.

CONCLUSION

The Trace Metal Detection Technique is an effective method used to detect trace amounts of metal ions deposited on a surface that has been in contact with a metal object. Most often used to determine whether a person had been holding a gun, the technique can often give an indication of the type of metal object held. For instance, a pipe would produce a different pattern than a handgun. While several reagents have been evaluated for use as a TMDT reagent, 8-hydroxyquinoline was found to be the most effective.

Concern arose over the possible carcinogenic properties of 8-HQ and it's use in crime laboratories declined substantially. Upon investigating the relevant studies, it was found that 8-HQ has not been shown convincingly to be even a weak carcinogen. It does not appear on the list of chemicals known to the State of California to cause cancer or reproductive toxicity. Also, its inclusion in three over-the-counter medical products, with annual sales close to 1 million units, is evidence that the Food and Drug Administration believes it to be safe enough to be included in pharmaceuticals. During a normal test, no more than 1 mg of 8-HQ is used, and through the use of a variety of common safety procedures, the person performing the test would be exposed to only a very minute fraction of this. Based on this information and the need for its use, there seems to be compelling evidence to reestablish the use of 8-hydroxyquinoline as a TMDT reagent.

ACKNOWLEDGMENTS

The authors are grateful to the California Department of Justice, Division of Law Enforcement for supporting this work. We are indebted to T.E. Valentine and Dr. John P. Christopher for valuable input, John Bowden for the CAD drawing of 8-HQ, and David Bay for his technical support in formatting this manuscript.

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Recreations

Important Laws in Science

A Review by A. Kohn

There are many laws in science. Many are taught in high schools: such as the laws of Newton, Boyle-Mariotte, thermodynamics, Ohm, etc. In the last decade some new important Laws were discovered:

1. ***Parkinson's Laws.*** Most of these laws are well described in Parkinson's book (1), Recently a new Parkinson's Law for Medical Research has been described (2): It States: SUCCESSFUL RESEARCH ATTRACTS THE BIGGER GRANT WHICH MAKES FURTHER RESEARCH IMPOSSIBLE.

2. ***Maier's Law*** *(3):* IF FACTS DO NOT CONFORM TO THEORY, THEY MUST BE DISPOSED OF.

3. ***Murphy's Law*** *(4):* IF ANYTHING CAN GO WRONG WITH AN EXPERIMENT, IT WILL.

4. ***Paradee's Law*** *(5):* THERE IS AN INVERSE RELATIONSHIP BETWEEN THE UNIQUENESS OF AN OBSERVATION AND THE NUMBER OF INVESTIGATORS WHO REPORT IT SIMULTANEOUSLY.

5. ***Hersh's Law*** *(5):* BIOCHEMISTRY EXPANDS SO AS TO FILL THE SPACE AND TIME AVAILABLE FOR ITS COMPLETION AND PUBLICATION.

6. ***Old & Kuhn's Law*** *(7,8):* THE EFFICIENCY OF A COMMITTEE MEETTING IS INVERSELY PROPORTIONAL TO THE NUMBER Of PARTICIPANTS AND THE TIME SPENT ON DELIBERATIONS.

7. ***Gordon's First Law*** *(9):* If A RESEARCH PROJECT IS NOT WORTH DOING AT ALL, IT IS NOT WORTH DOING WELL.

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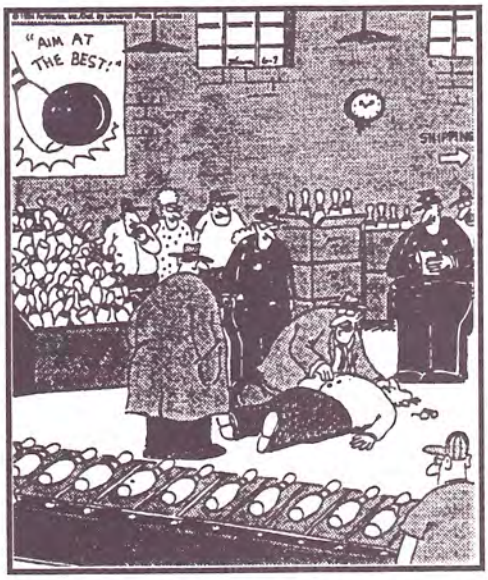
THE FAR SIDE By GARY LARSON



"Struck from behind, all right...and from my first examination of the wound, I'd say this was done by some kind of heavy, blunt object."

"Same as the others, O'Neill. The flippers, the fishbowl, the frog, the lights, the armor... Just one question remains: Is this the work of our guy, or a copycat?"

For President-Elect

Peter Barnett

Forensic Science Associates

After 25 years in the CAC, I ask myself why I have finally decided to run for president. While there is no single answer to this question, in large measure my decision to run now results from the fact that many of the programs I have worked on for the past 25 years are now beginning to develop a life of their own:

Certification - first through the CAC and now through the ABC - is a reality. Within the next few years, virtually everyone who works in a crime laboratory will be certified by a responsible professional group of peers through a program based on the concepts developed by the CAC: Educational and experience prerequisites; Broad background and specific scientific knowledge, skills and abilities assessed by a written examination; Continued technical proficiency demonstrated by external, public proficiency testing; And, continuing education to keep knowledge and skills honed.

Standardization - specific, recognized methods for testing, evaluation, assessment, and management - is a process that is moving forward on several fronts. Twenty five years ago the CAC abdicated responsibility for blood alcohol testing to the State Department of Health. Learning from that experience, the CAC Ad Hoc DNA Advisory Committee took the lead in California, and combined with TWGDAM nationally, to develop standards for DNA testing. New TWGs are being formed (fibers, paints) and other organizations are developing standards (ASTM Committee E30, IAAI Forensic Science Committee, to name but two). We cannot, nor should we, stop or ignore these processes. Rather, we should join in them and encourage laboratory and agency administrators, courts, and clients (and colleagues) to endorse and expect peer-developed, consensus standards.

Education - formal, academic curricula leading to a degree in criminalistics or forensic science - has suffered due to funding shortages and failure to demand that forensic science positions be filled by people with forensic science education. As educational opportunities for criminalists have been reduced, the CAC along with other regional associations have stepped up to fill the gap. Usually with volunteer effort and sometimes in conjunction with governmental agencies, workshops and training programs have been developed. While such training is valuable, it does not replace formal academic curricula in forensic science.

We have developed mechanisms to develop, maintain and document professional competence. The time has come, now, for these efforts to be recognized. We must convince lawyers, judges, investigators, police administrators, and, indeed, some laboratory administrators that our judgments are to be sought and valued, that our efforts and accomplishments should be recognized, and that our common goals are achieved based on mutual respect and trust.

We must convince educators and politicians that education of criminalists is not something that should be left to one or two week courses, but must be done in an academic setting.

We must convince administrators that they should require and reward demonstration of technical competence and professional commitment.

We must convince investigators and lawyers that we should participate in the fact finding and evidence gathering process.

We must convince the courts that our judgments are to be sought, our evaluations valued, and our opinions relied upon when decisions are to be made concerning the reliability, relevance, and admissibility of scientific evidence.

Finally, we must convince the public (who, as jurors, often have the ultimate say as to the value of our opinions) that our opinions and conclusions can be relied upon when the time for their decision arrives.

If you support these goals, I ask for your vote for President Elect.

For Treasurer

Michael J. Parigian

Ventura County Sheriff's Crime Lab

The treasurer receives all funds of the Corporation and deposits them in banks designated by the Board of Directors. The incumbent maintains financial reports and is responsible for the collection of dues. All expenditures are countersigned by a second member of the Board of Directors.

I have served as the treasurer-trainee of the CAC for the past two years and have monitored the endowment fund investment activities. Although a financial adviser handles this account I have been able to track the fund and inspect it for financial stability without allowing any funds to go into *risky* investments.

I have gained experience as treasurer in other organizations which will be of benefit to the CAC. I have also held church positions dealing with large sums, creating budgets and handling the distribution of monies. I have also prepared financial reports for my business and also for the CAC Fall 1992 Seminar. This experience has prepared me for the additional responsibility of preparing financial reports for the CAC. I believe my experience and conservative financial philosophy will be of value to the membership. I would like to thank you for your consideration of my candidacy.

For Regional Director—South

Dave Stockwell

San Bernardino County Sheriff's Crime Lab

As candidate for the office of Regional Director South I am looking forward to continuing the development of the CAC as a leading force in the profession of criminalistics. I joined the CAC in 1983 because I was impressed with the integrity and knowledge I found among its membership. The CAC quickly became my first stop on what is now called the information highway. The combination of study groups, dinner meetings, and seminars provided a vehicle to obtaining information that I could not easily find elsewhere. As my professional career has grown, so has my need to interact with my peers. The best way I have found to do this is to become involved with the CAC. I have served on the Awards Committee since 1989; I have served on the Forensic Biology Peer Group to the ABC; and most recently I have cochaired the Southern Section Serology Study Group. My desire in serving as your CAC Regional Director South is to see that more members, especially young members, become involved with the CAC. I hope that these members will find, as I have, that the rewards of membership and involvement are well worth the time and effort. I am honored that the Nomination Committee has asked me to run for this office, and I will greatly appreciate your vote and support at the May Seminar in Contra Costa.

1995 CAC
Slate of Candidates

For President-Elect
Peter Barnett
Forensic Science Associates

For Treasurer
Michael J. Parigian
Ventura Co.Sheriff's Crime Lab

For Editorial Secretary
Raymond Davis
Santa Clara Co. DA's Crime Lab

For Regional Director—South
Dave Stockwell
San Bernardino Co. Sheriff's Crime Lab

Candidate's Statements, cont'd

For Editorial Secretary
Raymond Davis
Santa Clara County DA's Crime Lab

My name is Raymond Davis and I am running for a position on the CAC Board of Directors as Editorial Secretary. I am looking forward to continuing the good work begun by my colleague, Lisa Brewer. Also, by making a contribution to the growth and vitality of the CAC through active participation.

I have had some previous experience in the position I'm currently seeking when I was the Editor of the Department of Justice publication, *TIE-LINE*, in 1979. I had a lot of fun putting that quarterly publication together. In one particular issue we had 96 pages of fact and fun-filled information. The purpose of *TIE-LINE* then was to allow everyone to contribute information from humor to hubris at their discretion. My challenge, then, was simply to organize the material for publication. I'm hoping I'll have the same challenge with the CAC Newsletter. I would appreciate your vote at the Business Meeting set for the Spring '95 CAC Seminar in Walnut Creek.