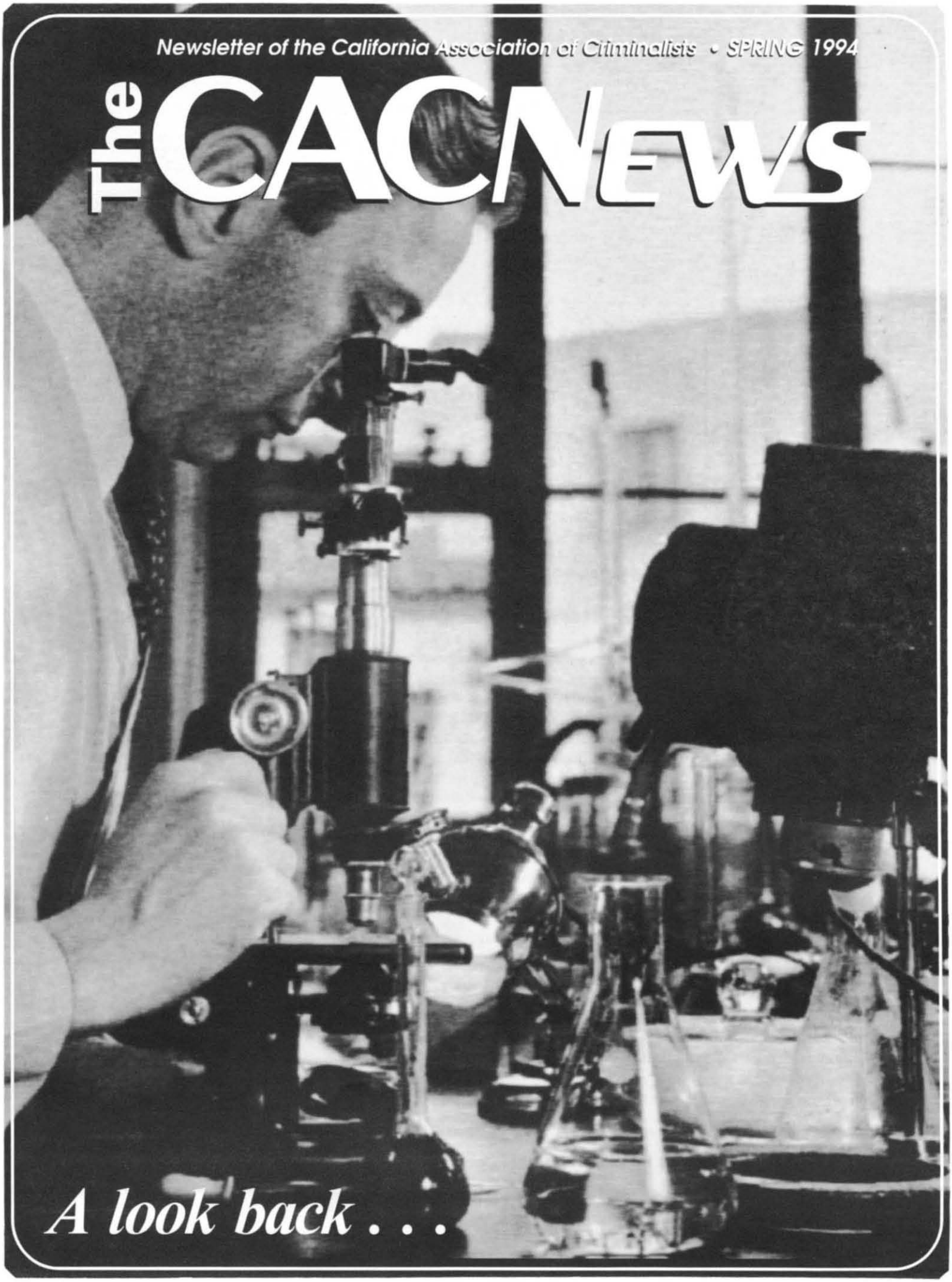
Newsletter of the California Association of Criminalists • SPRING 1994

The CAC News



A look back . . .

The President's Desk

This is the last issue in which I write as President, it is customary to laud the Board and Committee members that have served so selflessly for the past year, to tell how they have spent hours making this organization succeed. I don't think I will do that here—as they work with me, they don't serve me, they serve you. It is you they work for and it is you who should thank them for what they do. Instead I think I'll mention some thing that you will be hearing about soon, either at the Seminar or in these pages.

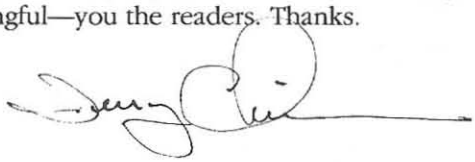
Just when you think the world of forensics is firmly revolving around DNA, we have new developments in firearms that are just as exciting. Southern California Laboratories are participating in "DrugFire", while Northern California Laboratories are trying to get "BulletProof." DrugFire is a computer database of cartridge case information and photos. This system allows the analyst to compare up to 24 casings on the screen at one time and to have a library of thousands. BulletProof is a database of bullet striae, which allows computer matching of bullets (and reportedly cartridge casings). The analyst only does the confirmation. This instrument will revolutionize the forensics field. Both systems make the crime laboratory part of the investigative process. The price tag is high for these systems, however so is the price tag for DNA. The payoff for both DNA and the new firearms systems is high also.

Ron Moore from Orange County has proposed the CAC join in on the Internet. I have appointed him to chair a committee to investigate the process. Welcome to Cyberspace.

The Director of the Division of Law Enforcement is trying to get all the crime labs in the state independent financing. I have asked the Long-Range Planning Committee to speculate as to the impact such funding would have.

There is a lot happening, a lot more will happen in the next year. Give Mary the support you have given me, she has a lot of ideas and the energy to make them a reality.

Now I will thank the people who have made this past year as President meaningful—you the readers. Thanks.



Lisa M. Brewer
CAC Editorial Secretary
Editor

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Ventura Sheriff's Lab
Publisher

The CACNews ©1994 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.

Notice to Contributors

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 CAC news. The acceptance of any advertisement is at the sole discretion of the Editorial Secretary.

Because of the computerized typesetting employed in The CAC News, the Editorial Secretary 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). It is preferred that text files from word processors 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 to The CAC News are: December 15, March 15, June 15 and September 15.

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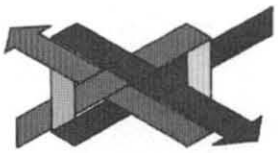
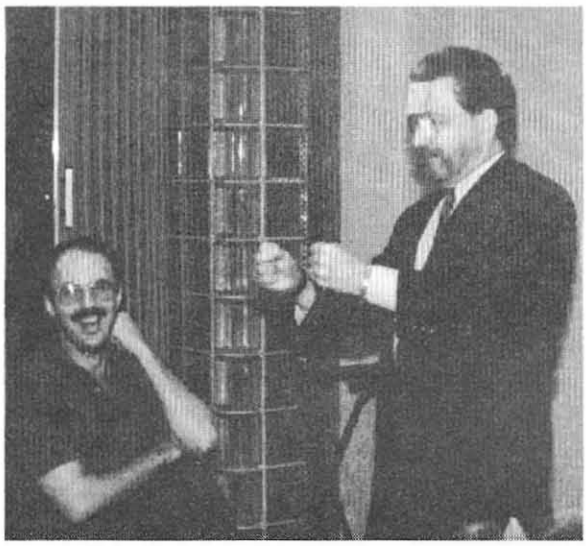
On The Cover:A forensic scientist from about 1943 uses a microspectroscope on suspected bloodstains. From the book "*Inside the FBI*", by John J. Flaherty. For more information on this method, see "*Sourcebook in Forensic Serology, Immunology and Biochemistry*", by R.E. Gaensslen, or "*Detection and Identification of Bloodstains*", by Angelo Fiori.



The CAC News
Spring 1994

"Stress Reduction" Class is Pure Magic



"Balancing the Stress Cycle," was an excellent, informative seminar designed to help us learn to "balance our stress" and learn relaxation techniques. It was the first of two workshops offered free to CAC members. Offered this fall in both the northern and southern sections, will be the complementary workshop, "Managing Time More Effectively." It is slated for September 8 in the south, and September 15 in the north.

For those of you stressed puppies that couldn't make the Stress Workshop for lack of time, we'll want to see you at the Time Management!

Entertainment was provided at the Southern CAC dinner meeting following the workshop by magician Bob Jardine (above, with card on forehead). The event was hosted by several Southland private consultants—Cal Lab, James Warner (firearms), Technical Associates (Marc Taylor) and Richard Whalley and Associates.

—Carol Hunter

Carole Sidebotham Retires

Supervising Criminalist Carole Sidebotham of the Orange County Sheriff-Coroner Department is retiring following over 26 years in criminalistics, 24 of which have been at Orange County. She has worked in many areas within the laboratory, but the bulk of her analytical and supervisory time has been spent in Controlled Substances analysis and Toxicology.

Carole is a member of CAT, CACLD and AAFS along with her long association with CAC. During her later years with CAC Carole was Southern Regional Director as well as putting in three years in the Presidential series.

At her retirement on March 24, Carole was presented with the Meritorious Service Award.

Carole is retiring simultaneously with her husband, Jim, who is a homicide sergeant for the Orange County Sheriff. She does not plan any forensic activities in her retirement, but will keep in touch as a Retired Affiliate member of the Association.

—Jim White

John DeHaan Receives First Fire Diploma

COURTESY FORENSIC SCIENCE SOCIETY

Forensic Science Society President Margaret Pereira presents the first Diploma in Fire Investigation to John DeHaan at the Society Annual General Meeting in Fareham, England, on November 5, 1993. (How appropriate—Guy Fawkes Day!)

Bringing Forensic Science into the 21st Century

Realizing the Potential of Computer Communication

Recently the American Academy of Forensic Sciences sent out a questionnaire to its members asking about the prevalence of electronic mail addresses among members, and if the membership would be interested in either being able to contact the AAFS through E-mail, or a possible Forensic Science E-mail Forum. California can again, as with certification, provide a model for the national effort by developing both a CAC E-mail forum and an administrative CAC E-mail address. The potential benefits to the CAC, its members, and forensic science in general are tremendous.

Electronic mail, or E-mail, is simply the sending of a message from one computer to another. As the computer becomes an omnipresent and indispensable forensic tool this

type of communication will become as common as a phone call. Already millions of people communicate via E-mail between universities, research institutions, industry, and the military. The requirements for E-mail are simple. First there is the computer, which must either have a modem, or be connected directly to a network. Some laboratories are connecting their PC's into an internal network. Networks are the connecting of computers to take advantage of the power of pooled resources, such as sharing printers or large databases. On these internal networks it is possible to send messages from one PC to another. Sometimes the PC will belong to one person, and at other times each person using the PC will log on as a user on the network. In either case each user is understood to have an account on the network, which accords the user certain abilities on the network, and can also serve as an E-mail address. Mail is sent from one account to another over the network.

Electronic mail, or E-mail, is simply the sending of a message from one computer to another.

The internal network, or individual PC's may also be connected to an external network. The external connection may be a permanent connection or a dial-up modem connection. There are a number of different external networks, which provide different network services. Some are small and provide few services, such as the District Attorney's office network being connected to the Crime Lab network, for case results and possibly E-mail. Other networks are global in scope and allow a vast range of services and resources, such as the Internet. Network connection providers may be proprietary, such as CompuServe, America On-Line, Prodigy, Delphi, etc. and provide services to their members only. They may have different levels of connectivity to the Internet. Other network providers offer only Internet connections. Prices vary among providers; with the number of services, and sometimes by usage.

Regardless of the other services associated with a particular network provider there is always the ability to send and receive E-mail via the Internet. The importance of this is that forensic scientists have the ability to talk to other experts around the world via the electronic media. Electronic mail has the advantages over regular surface mail in that it is faster, more reliable, requires no stamps or envelopes, and can be sent in multiple copies in a couple of keystrokes.

The CAC effort to actualize computer network communications between individuals and laboratories will occur in phases. The first is the encouraging of CAC members and laboratories to subscribe to a network service provider or otherwise acquire an E-mail address. E-mail addresses and network connections may be had from the previously mentioned proprietary providers and others, as well as universities and certain government institutions. Laboratories may also wish to secure network connections for the internal laboratory network or a dedicated network connected PC. The immediate benefits would be the ability to send personal E-mail to other CAC members as easy as a phone call. E-mail is as useful or more so than voice-mail. It is easier to save, it can be printed, edited and used in a reply, easily forwarded, and you don't have to worry about hearing it right. Individuals also would enjoy whatever other services are afforded with their choice of network providers, such as on-line topical discussion groups and access to on-line programs and databases.

The second phase is the initiation of an E-mail Forum for the CAC. This forum would serve as a discussion group for the CAC. An E-mail Forum works as follows: members send their E-mail address to the listmaster who adds them to the Forum list. Members then post messages to the forum by sending E-mail to a central E-mail address. The central address then redistributes the message to all the members of the Forum to read. Various readers may then choose to respond, and the discussion continues. Such a discussion group may be used to ask for advice on casework strategies, discuss research or techniques, announce conferences and classes, job openings, or other topics, all in an interactive format. It resembles an on-line topical study group meeting. Responses may be directed back to the group or privately to the individual. One advantage of this system over the older bulletin board system is that the messages go into an E-mail mailbox in whatever network account the member already has. No special logging in to another computer other than the one the user would be logging into anyway to check the stock quotes, read up on gardening tips, or book airline tickets.

The third and fourth phases would be to develop an on-line database of abstracts, rosters, and other CAC information. Information would be available via anonymous FTP or E-mail, with a directory published monthly in the E-mail Forum. Thus updated information would be immediately available. Depending on available resources, library holdings at various crime labs and other information may be added. Next would be establishing an administrative CAC E-mail address where members can communicate with the CAC officers or committees.

As chairman of the Ad Hoc Committee on Electronic Communication I will serve initially as listmaster for the E-mail Forum. The central address is still being determined, but will be an internet address. People on other networks should be sure to address communications so that the mail is directed to the internet gateway for that network and not to the internal network. To subscribe to the Forum send E-mail to kd6lff@netcom.com with the text "subscribe CAC Forum" plus your name, position, laboratory, address, phone number, and E-mail address each on separate lines. Mail volume will be light until the forum catches on and more people acquire E-mail addresses. To help on the committee or if you have further questions contact me at kd6lff@netcom.com or at PO Box 4188, Irvine, Ca. 92716-4188.

Ronald L. Moore, Orange County Sheriff-Coroner, Forensic Science Services, 320 N. Flower St., Santa Ana, California, 92703

Plan AHEAD!

CAC Fall '95 Seminar

October 18-21, 1995

Hosted by LAPD Crime Lab

For more info:

Joe Hourigan
(213) 237-0058
Larry Blanton
(213)237-0061

A look back . . . Bits from the CAC's past

Frank Cassidy, Santa Barbara DOJ, saved this article from a local paper about 6 to 8 years ago:

Jailyard Football Packed with Drugs

LIVERMORE (UPI) - The inmates at the Santa Rita Rehabilation Center not only lost a football game to their jailers but they lost the football - it was packed with narcotics.

Documents filed in Municipal Court Friday said that the football, which inmates kept from Alameda County Sheriff's deputies in a wild chase that featured forward passes, laterals and defensive blocking, was loaded with marijuana, cocaine and a hypodermic syringe.

The impromptu football game began at the jail Dec. 16 when a guard became suspicious because of the way three inmates were tossing the ball in an exercise area, the documents said.

Deputy John Freeman decided to question the inmates when Phillip Morris tucked the toy football under his arm and spurted off in a broken field run. Freeman tackled Morris after a 50-yard gain, but the ball fumbled loose and headed in the direction of another inmate.

While the unidentified inmate scooped up the doped-up football, Roosevelt Smith Jr. threw a block on deputy Ronald Hoffman and then caught a lateral from the other prisoner to run the ball out of bounds and into the nearby barracks.

Cornered, Smith rolled the ball to Tyrone J. Tinney, who scooped it up and sprinted out the door. As the officers closed in on him, he avoided a roughing penalty by tossing the ball over the compound fence.

Deputies said they later recovered the game ball and awarded it to Alameda County Assistant District Attorney Jack Baldwin.

Baldwin filed illegal procedure charges against Morris, Smith and Tinney for possession of narcotics.

FORTY YEARS AGO . . .

Reprinted from the *"Newsletter" of the California Association of Criminalists*, Vol. 1, No. 2, December 10, 1954.

Report on Semi-Annual Meeting

The Association concluded a very successful session in Orange County held under auspices of the Sheriff's Office with C.A.C. member Jack Cadman presiding as Conference Chairman on November 5-6, 1954. The agenda, with notes on the presentations, is as follows:

November 5

1.**Microchemical I.D. Tests for the Dangerous Drugs: amphetamines, barbiturates, narcotics, etc., with emphasis on altered forms and interferences** — presented by *George W. Lacy, Head Forensic Chemist*, Los Angeles County Sheriff's Department, Los Angeles, California. It was decided that the ultraviolet spectrophotometric approach is the most practical for those laboratories having this instrument. It was decided also that infrared spectrophotometry and X-ray diffraction analysis are of application in certain cases. The classical methods of melting point, characteristic microscopical crystals, and specific spot tests, although of some use, are less reliable and less sensitive than the instrumental methods.

2.**The Value of the Acid Phosphatase Test for Seminal Stains** — presented by *Jack W. Cadman, Criminalist*, Orange County Sheriff's Office, Santa Ana, California. It was decided by the group that the acid phosphotase activity test has acceptable validity in criminalistic work for stains of seminal origin. It was pointed out that positive tests have been obtained on five-year-old known seminal stains. Sources of contamination were discussed, and it was felt that further investigation into various possibilities is indicated, especially sources from contraceptives and vaginal stains.

3. **Problems in the Field of Typewriting I.D.**— presented by *Ray H. Pinker, Chief Forensic Chemist*, Crime Investigation Laboratory, LAPD. The use of gauges in connection with typewriting identification was discussed. It was pointed out that off-vertical alignment and off-anvil characteristics are the most significant features in the individualization of a new machine when damaged letters are not present.

4.(a) **Recovery of Volatile Flammables in Cases of Suspected Arson By Vacuum Distillation**— submitted by *Ralph F. Turner, Associate Professor*, Department of Police Administration, Michigan State College (at present graduate student at University of Southern California on sabbatical leave from Michigan State College).

(b) **Recovery of Volatile Flammables in Cases of Suspected Arson By Steam Distillation**— presented by *James W. Brackett, Jr., Associate Criminalist*, Laboratory of Criminalistics, Office of the DA, Santa Clara County, CA.

Vacuum distillation apparatus and processes in the recovery of flammables were discussed with comments on time of distillation, percentage recovery, sample size, and identification of recovered fractions. Steam distillation procedures were discussed in respect to the same points, and it was pointed out that by use of elevated boiling point modifications there is a superiority in performance of the steam distillation procedure over the vacuum distillation procedure in respect to: (1) Quick recovery; (2) Maintaining identity of original sample; (3) Cost of apparatus; and (4) Physical space of apparatus.

5. **Discussion of Odd and Unusual Contaminants of Food and Drink**— submitted by *Don M. Harding, Criminologist*, Pasadena Police Department. The general problem confronting criminalists in connection with the examination of food and drink materials were discussed with each member present indicating some of the novel incidents in his experience. A systematic analysis procedure for such problems was then detailed.

6.**Skeletal I.D.** — submitted by *Don M. Harding.* General aspects of this subject were discussed and various sources of technical assistance pointed

out. The role of the physical anthropologist, importance of related physical evidence, importance of dental evidence, and the use of photo-overlays (skull over portrait) were gone into in some detail.

7.**Dermal Nitrate Test**. This subject came up spontaneously and was discussed with a great deal of enthusiasm. It was unanimously agreed that the paraffin-diphenylamine test for dermal nitrate residues from revolvers should be discontinued as a criminalistics procedure. It was agreed that the examination of the hands microscopically for powder-burn residues has merit as a proper procedure for the detection of residues resulting from firing a revolver. Negative findings, nevertheless, are inconclusive.

* * *

Report of Business Meeting, NOVEMBER 6, 1954:

A business meeting was held with Executive-Secretary Lowell W. Bradford presiding. Members present were as follows: Brackett (late), Bradford, Briglia, Burd, Cadman, Cooper, Davis, Greene, Harding, Harper, Jones and Lacey.

Items discussed are as follows:

1. A secretarial report was given, indicating that a technical article containing breath alcohol analysis has been prepared and disseminated by the Association.

2.The model constitution was discussed, corrections were made, and it was decided that a final version of the constitution would be mailed to each member. Each member, as enumerated in the constitution, is then to submit either as "Yes" or "No" vote on the final approval of the constitution by mail to the Executive-Secretary.

3.*Membership Committee.* It was decided that the Executive-Secretary would appoint a Membership Committee for the purpose of screening applicants following ratification of the constitution.

4.*Historical Record.* It was decided that the Executive-Secretary would create an historical log of the development of the Association and a list of purposes accomplished.

5.*American Academy of Forensic Sciences Dinner.* It was decided that the C.A.C. sponsor a get-acquainted dinner for members of the Police Science Section of the American Academy of Forensic Sciences at the forthcoming meeting in February, 1955, in Los Angeles. Ray Pinker was appointed as the member in charge of arrangements.

6.*Job Specifications Collection.* It was decided that the Executive-Secretary would immediately begin a file of job specifications in connection with any of the specialties or general practice of criminalistics and that these specifications be available for information and study within the purpose of the Association.

7.*Dermal Nitrate Test Article.* It was decided that the next technical undertaking of the Association would be the preparation of an article regarding the ethical use of and limitations of tests for powder burns on the hands of a person firing a revolver. It was unanimously decided that Ray Pinker be designated the representative of the Association for the purpose of preparing the article.

8.*Code of Ethics.* A round table discussion ensued on the subject of ethics; no action was taken other than to continue further study and discussion at the next meeting.

9.*Seminar Chairman - February, 1955.* It was agreed that the meeting of the American Academy of Forensic Sciences be the occasion for meeting constitutional requirements for the first meeting of the year in 1955. Ray Pinker was designated as Seminar Chairman.

10.*Seminar Chairman - Fall, 1955.* It was agreed that the second meeting of the year in 1955 be held in Oakland, California, under the sponsorship of John E. Davis, Criminologist, Oakland Police Department Laboratory.

The meeting was adjourned and informal discussion continued at a delightful dinner at the home of Jack Cadman.

Jobs Offered

DOCUMENT EXAMINER

The Las Vegas Metropolitan Police Dept. is accepting applications for the position of Document Examiner. Applications will be accepted until a sufficient number of qualified applications are received. The minimum qualifications include a Bachelor's degree in criminalistics, forensic science, chemistry, biology or a related field AND three years of professional research and practical experience as a questioned document examiner in a forensic lab. The annual salary range is $41,219 to $54,242. (Compensation level is currently under review and adjustments may be made to the pay range at a later date.) The Dept. offers an excellent employee benefit plan including 100% employer paid retirement, employee health, vision and dental care insurance, 3 weeks of paid vacation per year and 13 recognized holidays per year. Additionally, there is no Nevada State income tax. Interested candidates may request an application by contacting: Las Vegas Metropolitan Police Dept, Personnel Bureau, 400 E. Stewart, Las Vegas, NV 89101, (702) 229-3497. Inquires regarding the position may be directed to Linda Errichetto, Forensic Lab. Director, (702) 229-3497.

FORENSIC SCIENTIST 3

The Washington State Patrol Crime Laboratory Division is seeking experienced applicants to fill a firearms and toolmarks examiner position within the division. Minimum requirements are a bachelor of science degree in forensic science or a natural science which includes 20 semester (30 quarter) hours of chemistry and 5 semester (8 quarter) hours of physics, plus three years of full-time, paid technical experience in a forensic laboratory, which includes testifying as an expert in courts of law. Five years of experience performing independent complex casework in firearms/toolmarks will suffice in lieu of the bachelor of science degree. Annual salary: $36,132 - $45,096. For further information, please contact: Capt. Robert Leichner, Washington State Patrol, Crime Laboratory Division, PO Box 42632, 621 Woodland Sq. Loop, Lacey, WA 98504-2632.

Southern

A CAC Southern Section General Meeting and Dinner was held at the Jet Propulsion Laboratory in Pasadena on November 10, 1993 (no study groups met). It was hosted by **Bill Moore**, Los Angeles Police Department and **Fred Mintz**, Systems Engineer of the Jet Propulsion Laboratory in Pasadena. The afternoon program included the presentation of JPL's Public Safety Technology Program, part of which includes transferring their technology such as telemetered drug detection badges, firearms training simulators, software system to compress FBI's fingerprint records, solid-state chemical sensor technical technology for narcotics interdiction, to the Criminal Justice System. A film presentation on outer space and a tour of the Space Flights Operations Facility and Assembly Facility were also part of the program. Seventy people attended the afternoon program and fifty-two people attended the dinner meeting.

Northern

Debbie Madden of San Francisco Police Department Laboratory hosted the November 19, 1993 dinner meeting. The guest speaker was **Alexander Shulgin**. His topic "Some Thoughts on Harm Reduction Related to Drugs and the Inevitable Legalization of Drugs" was very controversial and the discussion following was very exciting. Thirty-nine individuals attended the meeting.

SEROLOGY STUDY GROUP

Chairs: Pam Sartori, Oakland PD and Nancy Marte, Santa Clara Co

The Serology Study Group met prior to the dinner meeting on November 19, 1993. **Rod Andrus** discussed haptoglobin. His presentation was videotaped for the Training and Resources library.

DRUG STUDY GROUP

Chairs: Diane Bowman and Mary Trudell, Oakland PD

The Drug Study Group met on December 9, 1993 at the Oakland Police Department. The guest speaker was **Jeff Buntrock** from Chemical Waste Management. His topic was Safe Packaging, Handling, Transportation and Disposal of Hazardous Materials.

TRACE STUDY GROUP

Chairs: Diane Bowman and Mary Trudell, Oakland PD

The Trace Study Group met on January 13, 1994 at Forensic Science Associates. The guest speaker was **Steve Shaffer** from Microdataware. His presentation dealt with the Basic Microscopical Analysis of Trace Evidence as part of the Back-to-Basics series. His presentation was videotaped for the Training and Resources library.

Training & Resources
(CAC Members Only)

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 Yamaguchi*
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*

Also available:

Population Genetics & Statistics Course
Dr. Bruce Weir, Instructor
Eight two-hour tapes, PLUS the course notebook.
(from the three day course at SBSD)

Bloodspatter Lecture — Fall 1992 CAC Meeting
Gary Knowles, Instructor, 2 Tapes

Microscopic Exam. of Sex Assault Evidence
Ed Jones, Instructor

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"

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

Please address requests to:
Carol L. Hunter, T&R Chairperson
Cal Lab of Forensic Science
17842 Irvine Blvd. Suite 224
Tustin, CA 92680

Alexander T. Shulgin

Some Thoughts on Harm Reduction Related to Drugs

THE INEVITABLE LEGALIZATION OF DRUGS.

Presented at the CAC Dinner Meeting, November 19, 1993, in the Machiavelli Room at Kuleto's Italian Restaurant, in San Francisco.

I am honored to be here tonight, to have the privilage of expressing my thoughts on how the harm related to drug use can be reduced to a much lower level than that seen in our society today, and how that will certainly require the repeal of much of our present law.

I am flattered that some 44 persons would weather a downtown parking problem and a $30.00 dinner price tag just to hear an old constitutional reactionary present some arguments about ending the drug wars.

And I am amused to be speaking in the Machiavelli room — an Italian philosopher of some 500 years ago, whose name is synonymous with his credo:

"Politics is amoral, and any means, however unscrupulous, can justifiably be used in achieving political power."

I think that that quite fairly frames the way that a social phenomenon which I see as a rather minor problem, illegal drug use, has been escalated into a Hydra of mythical proportions. Illegal drugs are now presented as a threat to our public health, to our economic stability, even to our national security. We are consequently required to submit to increasingly outrageous laws and regulations that primarily serve the role of reinforcing the security and the power of those presently in Government. I suspect that I will be speaking to the conscience of many of you here tonight. Many will disagree with some of my points. And some will disagree with many of my points. But I believe that everyone here will have to quietly acknowledge some aspects of truth in my statements.

I was invited to give the final plenary address at the 4th International Conference on the Reduction of Drug Related Harm, on March 18 of this year, in Rotterdam, and my title there was: "The American Approach to Drug Control: The Wrong Model for Harm Reduction." The thoughts I presented there were based entirely on the scene that I have seen unfolded here in the United States, most dramatically over the past ten years, involving the changes in laws, in the patterns of drug use, and in both the official and private attitudes towards the social consequences of our national drama that has been called, "The War on Drugs." I presented as candid a picture as I could, of where we are at the moment, and I tried to foresee where the political and social movements now under way might lead us in the future.

There are three distinct areas that must be looked at in any discussion of harm reduction, and each of them requires some quantitative measurement of the extent of harm, before one can choose a path of action. First, the harm that is presently a continuing price associated with drug use must be determined. Second, we must estimate the harm decrease that might accompany any specific changes in our attitudes towards drugs. And third, the secondary harm that would accompany these changes must -- in turn -- be evaluated. In short, the amount of damage now being done must be diminished, but not at a cost that would increase the overall total of harm. An ideal "scientific" approach would be to make these three measurements, and design a strategy that would decrease current harm, effectively, at an acceptable cost.

"Politics is amoral, and any means, however unscrupulous, can justifiably be used in achieving political power."
—Machiavelli

Unfortunately the "scientific" approach is, in this complex problem, not useful, simply because there are no absolute values that can be given to the measure of harm. There are no acceptable dimensions.

There was a marvelous maverick, a Nobel Prize winner in physics, who gave a simple answer to this type of question. This was Richard Feynman, who was at the time being interviewed by a psychiatrist to determine his qualifications for induction into the army. At one point in the exchange the psychiatrist asked:

"How much do you value human life?"

"Sixty four."

"Why did you say sixty four?"

"How are you supposed to measure the value of life?"

"No. I mean, why did you say 'sixty four,' and not 'seventy three' for instance?"

"If I had said 'seventy three,' you would have asked me the same question."

And that, unfortunately, is exactly where we founder in our search for a quantitative measure of the harm that is related to drug use. Something that might be of only minor importance in one person's eyes is seen as being of immense value to another. Each person must decide for himself the comparative size of each of the many degrees of harm.

What are these degrees?

All drugs have the capacity to cause harm, and yet most of them do so very rarely. If damage is done, it may be immediate — or eventual —and it may follow acute — or chronic — administration of the drug. It can reflect the purity of a drug or the protocol for its use, but above all it reflects the relationship between the drug and the drug user. The user may acquire a dependency that can be of a psychological nature -- or of a physical nature. With drugs that have a pleasurable effect, a repeated pattern of reinforcement with social or sensory rewards can establish habits of use. And with drugs that can change the body's chemistry, the dependency is called addiction.

The extent of harm associated with drug use reflects the statistical probability of some damage being done. Ignorance of a drug's potential of doing damage, or more important yet, the acceptance of misinformation as a fact, can increase the harm risk. The more a drug user knows factually about the properties of a drug, the less the likelihood of his being harmed by it. And, the more a drug user feels

rewarded from the use of a drug, the less importance that harm measure will have. But this measure is made at the individual level, and each person will give it a different value.

There is another type of personal harm, neither physical nor medical, but one that takes the form of damage to the self-image, to the sense of self-worth. Here, the weighing of this loss involves dealing with intangibles, and is even more difficult to make.

Let me take as an example the random urine screening analysis that can be required of you whenever an employer or an arresting officer asks for it, as is the case now in the United States. You are being assumed guilty of some felonious crime, and it is beholden upon you to provide the evidence that is needed to establish your innocence. This is one of the most outrageous and intolerable recent developments made in the United States, the blanket insistence on random urine screens to prove to some authority that you have not been doing things that he does not approve of. If there were cause, there could be justification. Bad judgment or improper performance might be a reflection of some form of intoxication; one could rationalize that drug use might be a contributor. But if I were the employer, and I insulted an employee of mine with a capricious demand for a sample of his urine, I would be saying that I completely control him, and that I don't think he is worth much.

I want you to look at the cost, the damage as seen through the eyes of the suspected guilty party, the urine giver. What is the price that he has paid, in his self esteem, to say, "No, I do not want to change my chosen life-style and accept someone else's way of life. But I must earn a living (or go to school, or give birth to my child, or get a driver's license) and he has me in a hopeless situation. Even if I do a superior job, I can be hurt by not behaving the way he wants me to."

What has been lost in the way of dignity and self-respect, for a person to give up and agree to a urine test as part of his application for a job with industry or with government? What has been lost when a mother refuses to accept prenatal medical care because a urine screen might show the past use of an unacceptable drug which would threaten her custody of the unborn child? What has been lost when, at the time of labor, a urine analysis shows some illegal drug to be present, and the state has the legal right to confiscate her child?

How large is the harm that is intrinsic in these scenarios? Is the human life now worth sixty four? Perhaps ninety five. A very close chemist friend of mine, many years ago, had a number two son who was interested in marine biology, and who gave promise of a brilliant future in that area. The son was arrested in a small California town by a sheriff who found a dose of an illegal drug in his possession, and told him that his future was — as of that moment — destroyed. As a criminal, he would be blocked from pursuing any professional career. The young man committed suicide. To his distraught father, the value of that human life might well have been one hundred thousand and twenty. We cannot begin to measure the size, the worth of harm when it is seen as a warping of our freedom and of our future.

The moves that employ economic sanctions as an attempt to control the drug use problem, the legal maneuvers associated with the War on Drugs, are more easily evaluated in terms of dollars. In this area, some measure can be made of the extent of damage. Here one finds the overt measures such as civil seizure, and the more subtle nuances of military and political economics.

The governmental encouragement of civil seizure in connection with suspect drug-associated behavior has become a scandal in the United States today that is every bit as threatening to our liberties as are the urine screen regulations. If the possession of a person such as a car, a house, a boat, a bank account, is thought to have been associated with the commission of a drug crime, then that possession may be seized by the state and its recovery requires that the owner take the initiative in court. No charges of illegal action need ever be brought against the owner. The proceeds of such seizures can go directly to the law enforcement groups involved, and be used by them as a source of income. This is, quite simply, robbery with official sanction. Money is, after all, the ultimate measure of power in the political structure, and there can be no surprise that it is used as a measure of the harm that comes with drug use.

It is the use of the legal code, the body of written law, against the individual that is perhaps the most destructive agent of harm. The invocation of the mass of existing law against the small person, is the source of some of the most extensive damage that can be seen in this area. The United States had a Constitutional amendment called prohibition (the 18th amendment enacted in 1920) that outlawed the manufacture, sale, importation or exportation of any alcoholic beverage. But there were no restrictions in that amendment directed to the personal possession or use of alcohol. An individual could make his own beverages, and use them when and as he chose. But even this limited effort at attempting drug control was acknowledged as a failure and it was repealed with the 21st amendment some thirteen years later.

But today we have laws in effect that not only attempt to control the manufacture, sale, importation, and exportation of the named illegal drugs, but which also attempt to control the personal making of them, the possession and use of them, any conspiracy with someone to make, possess, or use them, and even the intention to make, possess, or use them.

". . . civil seizure in connection with suspect drug-associated behavior has become a scandal in the United States today."

Today it is a crime to use a drug that has not even been made illegal, if that drug might have the action of another drug that has already been made illegal. It has even become a crime to have evidence of the presence of an illegal drug in your body.

Your personal behavior can be viewed as incriminating if you act in a way that fits some one's profile of a drug dealer. The driving of a car with California license plates in Alabama is sufficiently suspicious to invite some policemen to stop and search you. The purchase of a one-way airline ticket with cash will, in some airports, assure you of an intimate search by law officials. The most recently published classification by the Medical Board of psychiatric pathologies, has defined hallucinogenic drug use as being an illness. These assaults on the possible drug user are continuously increasing in number. How can you measure your personal loss (personal damage or harm done) by trying to give a number to the loss of freedom that follows from such efforts of others to

control you?

There are countless dollars lost and gained in our American War on Drugs. It is truly a big business. The dollars spent on providing for the prison population and the demand for more prison space are hard to justify. But there are many who benefit from these increasingly Draconian regulations. The demand for scientific instrumentation, for analytical services, and for forensic technologists has soared. Urine assay and confirmation procedures have become a billion dollar industry. The diversion of social services and psychological counseling from the desperate needs associated with poverty, hunger and housing, to the punitive rituals of court-ordered drug rehabilitation and behavior modification schools, are wasteful in our social structure. And yet, clinics do exist that address drug problems as medical problems. These are the groups that should get strong support from the authorities.

And the vast waste associated with the military engaging in the War on Drugs is little known but potentially very expensive. The disappearance of the Soviet threat and the evil of the Communist enemy, has robbed Congress of its justification for a very high military budget. But there appeared a politically popular substitute — the War on Drugs and the evil of drug abuse.

By law, the military cannot participate in law enforcement involving civilians, but they are being called upon nonetheless with ever increasing urgency. The National Guard, — exempt from such restraints — has been the recipient of continuously increasing quantities of military hardware, operating funds and personnel. They may be directed to conduct surveillance at borders, to investigate private possession without the usual judicial process, to use the machinery of the military in this "drug crisis." The Coast Guard now directs its energies towards the detection of drug smuggling. There has been a broad extension of our law enforcement efforts into foreign countries. There are many people who personally benefit from the anti-drug position in the United States.

The economic harm from the drug problem is very extensive. True, the employment in the maintaining and equipping of the military is argued as being good for the economy, but the same money spent on treatment and education, with the viewing of drugs as a medical rather than a criminal problem, would be, by contrast, a constructive use of those funds.

There are other, less obvious, wastes of money. The swelling of the prison population continues unabated. With more than a million people in prison today in the United States, roughly one fourth are incarcerated for some crime involving drugs. At a maintenance cost of over $30,000 per prisoner, that is a $10 billion dollars item in the costs of the War on Drugs. And, with the longer sentences required by the sentencing guidelines, these prisoners will stay in prison longer than ever before. The building of new prisons is a growth industry. There are unprecedented costs associated with the increased needs of courts and lawyers, and judges for prosecuting the continuing wave of drug suspects. And what is the cost to society of the diversion of these resources away from addressing crimes such as burglary, homicide, and arson?

Your personal behavior can be viewed as incriminating if you act in a way that fits some one's profile of a drug dealer.

An equally large money involvement in the drug problem stems from the process of civil seizures, that I have just mentioned. The reward to law enforcement, which is of course the loss to the society, already has added up to many billions of dollars. A loss of a different sort, both impossible to estimate or to add in, results from the fact that the entire trade in illegal drugs is completely free of any form of taxation and so produces no revenue to the government.

* * *

There are two social changes that I can see that would be effective in greatly reducing the harm associated with drugs and drug use. I believe that both would be successful, and that both could be done. But both of them would require extreme courage and a complete change of governmental self-image. Quite simply put, there must be the removal of all laws that regulate drug use, and there must be honesty in presenting all the facts concerning drugs.

The use of the word "All" in both of these proposed changes is deliberate. With drugs, this will include not only the "bad" drugs currently against the law, but prescription drugs and poisons as well. As to information, the word "All" will include factual material that might be seen as provocative, or encouraging — material usually put aside or hidden because "It sends the wrong message ...," or "It implies we are soft on drugs," or "It has never been proven that ...." I suspect that the last 5% of the laws will never be withdrawn, in that it shall remain, and in my opinion should remain a crime, to give drugs to a minor, or to drive while intoxicated, or to subject someone to anything without his informed consent. But one must still use the remaining 95% as the goal.

These changes would have to be made in increments, and both the legal and educational innovations would have to be made in concert. Small changes in the laws in the direction of legalization, if they do not compound the drug abuse problem, must be accompanied by candid statements admitting that the unleashed monsters are not as monstrous as we have been led to believe.

There are many places where starts can be made towards this goal, without unleashing the Armageddon that the prohibitionists have predicted. For example:

- The severity of penalties can be lessened, and the invocation of mandatory penalties can be removed.
- The personal use of drugs can be moved from being an act of criminal concern to an act of medical concern.
- Drugs can be systematically removed from legal listing, starting with those with the least harm associated with their use, and progressively moving on through the entire inventory.
- Police action can be shifted from the "proactive" (initiating the search for a drug infraction) to "reactive" (responding to a complaint or a report of damage).
- The de facto creation of law through the machinery of the writing of regulations or the findings of courts, can be stopped and systematically reversed.
- The civil seizure processes can be abandoned.
- A policy statement can be made at the executive level of government that both the letter and the spirit of the Bill of Rights will be respected.
- The intrinsic need of the human animal for the alteration of his consciousness can be candidly admitted.

At least these would be a start.

These two moves, the reduction and eventual removal of drug law and the concurrent broadening of the public's knowledge of the facts concerning drugs, will take a great deal of time and will face much opposition.

Those who oppose any form of legalization are the very people who oppose honesty in the distribution of drug information. This is not surprising, in that the justification of severe laws against drug use is built on a body of self-serving misinformation. Let me briefly present the objections of five groups of concerned people.

(1) The politicians in Congress, the very body that must be called upon to change the law, will see such a move as being not approved of by the people whom they must call upon for support in re-election. Thus, there must be a re-education process under way even before the first laws can be expected to be changed. In short, the voting public has bought the image of drug damage, of drugs being responsible for our social problems, and the fear of the politician is that any softening of the anti-drug stance will be use by his opponent as a sign of weakness. The remedy to this: get some programs under way on a large scale that will provide a body of balanced and correct information to the public.

(2) The law enforcement groups about the country will see this as a disenfranchisement that will rob them of their carefully amassed power. The reasons for their objections will be couched in terms such as "Criminals will be unleashed into an environment of anarchy," but in fact they fear that these changes would spell out the eventual loss of their jobs. The remedy to this: retain these policemen fully empowered, but use their skills and direct their efforts towards aspects of the drug problem with valid social consequences. The threat to public safety with driving under the influence, the protection of the innocent from unasked-for drug exposure, the control of the residual black market in drugs that will certainly remain even after the laws are removed.

(3) Physicians throughout the country will voice serious objections since any such move will erode their monopoly on the control of medicines. There will be grave concerns voiced that inexperienced or uninstructed people will use antibiotics in a wrong way, or that non-medical people will have access to clinical drugs without the knowledge of how to use them. The remedy to this: Start an instruction campaign to distribute that knowledge, and make the needed information widely available. Many countries have such a process in effect now, and even the United States had no such thing as prescription drugs until the Food and Drug Administration wrote regulations creating this category. Seeking a doctor's advice and suggestions as to which medication might be helpful, and which might be harmful, will remain invaluable, but the control of the treatment process should return to the individual.

(4) Conservatives will express a fear that such a move will remove the constraints on society that are essential to keep together a fragile structure that, in their eyes, is already unraveling and which would, in the absence of drug controls, become a shambles. The remedy to this: they must be allowed to see that the fragmentation of our society is to a large measure due to the criminality associated with drug law violation, and that the removal of the laws would remove the criminality. This is as good a reason as any to make the needed changes in small steps, to evaluate fairly the cause and effect relationship resulting from them.

Those who oppose any form of legalization are the very people who oppose honesty in the distribution of drug information.

(5) The fundamentalists will voice the arguments of the conservatives, but at the deepest level they will rebel against the loss of a tool that allows them to dictate the individual behavior of others. Again, this is a loss of power, but a loss that will be cast in terms of religion or righteousness. The remedy to this: here is a voice that must eventually be overridden in our society since their goal, behavior control, is an intolerable cancer in the body of a free society. The educational process is the only weapon that can be used here, and I fear that it will only have limited success.

This is where we are, here today, in the United States. The need for this type of harm reduction is desperate, but the first moves have yet to be made. In fact the hook becomes more deeply buried every day. Many new laws are passed each year, increasing the penalty for this or adding that to the illegal lists.

* * *

I would like to conclude with some quotes that are part of the accumulated and extensive voice against legalization. These came to light as I was searching through my files for examples of anti-drug propaganda. Our very first drug law was launched with a passionate condemnation of coca and opium. Listen how closely this might resemble the anti-marijuana propaganda of the 1930's, or the anti-PCP oratory of recent years:

"The illicit sale of cocaine and the habitual use of it temporarily raises the power of the criminal to a point where, in resisting arrest, there is no hesitation to murder; it is more appalling in its effect than any other habit-forming drug used in the United States."

—President W. Taft,
to Congress, 1910.

And, more directly to the propaganda misinformation world, was the statement of President Bush in 1989, concerning the costs to industry on the illegal drug use:

"Drug abuse among American workers costs businesses between $60 and $100 billions of dollars a year in lost productivity."

In 1982, the Research Triangle Institute instituted a survey of 3700 households to determine any relationship between drugs use, and income. In surveying current use of cocaine, heroin, or marijuana no differences were found when comparisons were made to similar non-drug households.

But, when searching for past use, a difference was found when the drug being asked about was marijuana. The average income in these households was 28% lower when comparisons were made to similar non-drug households. This became a "Loss due to marijuana use." This was extrapolated to the general population and became $26 billion. Adding on the costs of drug-related crime, drug-related health problems, and drug related accidents, this became a $47 billion number. And, when adjusted for inflation and population increase, it was the sole "scientific" justification of President Bush's statement in 1989,

I have, as a final comment, a quota-

tion that I find to be fascinating, because I believe it to be totally self-serving, and totally backwards from reality. In the question and answer portion following a talk to the Commonwealth Club, right here in San Francisco, by the Honorable John Lawn, former head of the Drug Enforcement Administration, he was asked:

"What's wrong with legalizing marijuana?" He answered:

"In experimental animals, mutations in the brain caused by marijuana is found not only in the user's offspring, but in the offspring's offspring. The dangers associated with cannabis are different than those associated with alcohol. I think that if we decide upon legalization, we can forget democracy as we now know it."

I hold with the completely opposite conclusion.

I feel that if we fail to halt the progressive law writing against drugs, and the catastrophic loss of personal and civil rights associated with law enforcement, it will be then that we will have lost our democratic form of Government. I am truly frightened to try to picture our society in the future times of our children's children.

* * *

So what can we do about this situation?

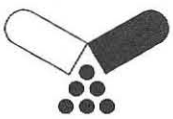
We can begin by rethinking and re-examining everything we've heard, everything that we've taken for granted simply because it's been said so often that we've come to accept it as truth. We can read more widely, with a more open mind, and give ourselves permission to change long-established opinions. Then, and only then, will we be well enough informed to be able to argue effectively, with friends, with our community, and eventually with our appointed representatives in government, that changes must be made.

Let me close with a sensible comment from yet another President the United States, Jimmy Carter. On October 2, 1977, he said:

"Penalties against possession of a drug should not be more damaging to the individual than the use of the drug itself."

That would be a very good start.

Thank you.



Announcements

NORTHWEST ASSOCIATION OF FORENSIC SCIENTISTS
April 26 - 29, 1994

The Spring 1994 Meeting of the NWAFS will be held at the Concord Hilton in Concord, California. The main event of the four day gathering will be a one-day plenary session on Thursday, April 28th dealing with the management of mass disaster crime scenes. The speakers for this session are all veteran crime scene investigators who will speak about their management of three mass disaster crime scenes. Featured speakers will discuss the Oakland Hills fire, shootings at 101 California Street and World Trade Center bombing. Technical papers will be presented on Friday morning, April 29th. The NWAFS is also sponsoring several technical workshops on the following topics: Arson Detection sponsored by ATF, Polaroid Photography, Infrared Spectroscopy Interpretation, Wildlife Forensics and Toxicology. For further information, please contact: Roger A. Ely, DEA Western Laboratory, 390 Main Street, Room 700, San Francisco, CA 94520, (415) 744-7051 ext 29.

CALIFORNIA ASSOCIATION OF CRIMINALISTS
May 11 - 14, 1994

The 83rd Semi-Annual Meeting of the CAC will be held at the Oakland Hilton in Oakland, California. This will also celebrate the 50th Anniversary of the Oakland Police Department Criminalistics Laboratory. Room rates are a very attractive $79.00 single or double occupancy. The hotel offers free parking to attendees and free shuttle service to the nearby Oakland International Airport.

Two workshops are planned for Wednesday, May 11th in FTIR Spectroscopy and Court Room Testimony. A third workshop is in the planning stages. Plenary Sessions will be held Thursday, Friday morning and Saturday morning. The American Board of Criminalistics (ABC) General Knowledge Examination will be offered on Saturday. Specialty tests may be offered as well. For further information, please contact: Rosemary Laird, Oakland Police Department, 455 7th Street, Room 608, Oakland, CA 94607, (510) 238-3386.

INVESTIGATION OF CRIME:
CRIME SCENES, COMPUTERS AND CHILDREN
May 12 - 14, 1994

The Bi-Annual Seminar of the Investigation of Crime is designed for both the new and more experienced officer and detective. The course explores basic techniques, new concepts and the equipment used in investigation. The May 1994 course will present lectures in the latest use of computers in crime scene investigation and age enhancement. In addition, there will be formal presentations and practical exercises in child and adult crime scene processing. For further information, please contact: Karen Griest, MD, 160 Washington SE #234, Albuquerque, New Mexico 87018, (505) 281-8109.

FORENSIC ARCHAEOLOGY SEMINAR
May 23 - 26, 1994

The Departments of Anthropology and Criminal Justice at Mercyhurst College, Erie, Pennsylvania will present a four-day seminar in Forensic Archaeology. The seminar will expose participants to state-of-the-art techniques employed by forensic anthropologists in the search and site mapping techniques in various terrains, forensic archaeological and house fire excavation techniques, collection of entomological specimens, and forensic osteological and odontological analyses. For further information, please contact: Dennis C. Dirkmaat, Ph.D., Department of Anthropology, Mercyhurst College, Glenwood Hills, Erie, PA 16546, (814) 824-2105.

2nd INTERNATIONAL MEETING
ON CLINICAL AND FORENSIC ASPECTS OF HAIR ANALYSIS
June 6 - 8, 1994 in Genova, Italy

For further information, please contact: Dr. Mario Cassani, Laboratory of Biochemical Chemistry, Ospedale Ca Grande, Plazza Ospedale Maggiore 3, 20162 Milano, Italy, FAX (39).264.44.29.01.

CLANDESTINE LABORATORY INVESTIGATING CHEMISTS
September 7 - 10, 1994

The 4th Annual Technical Training Seminar will be held at the Westin Bayshore Hotel in Vancouver, B.C., Canada. The annual CLIC seminars have become widely known for their highly specialized training programs on topics related to clandestine laboratory investigations, chemistry, analytical techniques and safety programs. Binders containing handout materials from the presentations will be included with the price of registration. For further information, please contact: Richard Laing, Health Protection Branch, 3155 Willingdon Green, Burnaby, BC V5G 4P2, (604) 666-8284.

THE INTERNATIONAL ASSOCIATION OF BLOODSTAIN PATTERN ANALYSTS (IABPA)
October 6 - 8, 1994

The 11th Annual Training Conference of the IABPA will be held at the Newport Pier Beachside, Holiday Inn Crowne Plaza Resort in North Miami Beach, Florida. For further information, please contact: Toby L. Wolson, Metro-Dade Police Department, Crime Laboratory Bureau, Biology/Serology Section, 9105 N.W. 25th Street, Miami, FL 33172, (305) 471-2052.

NORTHEASTERN ASSOCIATION OF FORENSIC SCIENTISTS
October 13 - 15, 1994

The 20th Annual Meeting of NEAFS will be held in New York City at the East Side Marriott Hotel (212-755-4000). For further information, please contact: Jeffrey H. Luber, Suffolk County Crime Lab, Suffolk County Office Building #487, Hauppauge, New York 11787, (516) 853-5585.

CANADIAN SOCIETY OF FORENSIC SCIENCE/ NORTHWEST ASSOCIATION OF FORENSIC SCIENTISTS
October 31 - November 5, 1994

The CSFS and NWAFS will hold a joint meeting at the Waterfront Hotel in Vancouver, British Columbia. Workshops and original presentations will run from October 31 through November 5, 1994. For further information, please contact: Jeffrey Caughlin, RCMP Forensic Laboratory, 5201 Heather Street, Vancouver, BC V5Z 3L7, (604) 264-3507.

NOTE: A GSR (gun shot residue) symposium/roundtable discussion will be held at this meeting. We are soliciting unpublished research which will be bound and distributed at the meeting. Also, we need suggestions for discussion topics and/or problems for the roundtable discussion. Please contact Frank Boshears (206) 593-2006.

INTERNATIONAL ASSOCIATION OF FORENSIC TOXICOLOGISTS AND SOCIETY OF FORENSIC TOXICOLOGISTS JOINT CONGRESS
October 31 - November 4, 1994 in Tampa, Florida

For further information, please contact: TIAFT-SOFT 1994, c/o Medical Examiner Department, 401 South Morgen Street, Tampa, FL 33602.

INTERNATIONAL CONGRESS ON FORENSIC (TIAFT) AND ENVIRONMENTAL TOXICOLOGY (GRETOX 1995)
May 20 - 24, 1995 in Tessaloniki, Macedonia, Greece

For further information, please contact: Prof. Dr. An. Kovatsis, Laboratory of Biochem-Toxicology, Aristotelian University of Thessaloniki 540 06, Tel. (031) 991-004.

ABC CERTIFICATION

GENERAL KNOWLEDGE EXAMINATION/ SPECIALTY EXAMINATIONS

The application deadline for the American Board of Criminalistics General Knowledge Examination (GKE) offering at the CAC spring meeting has passed. The test will be offered on Saturday May 14, 1994 in Oakland, California. The next offering of the GKE will be in conjunction with the Fall/94 CAC meeting in Pasadena. Along with the GKE, the following Specialty Examinations will be offered:

- Drug Specialty Examination
- Fire Debris Specialty Examination
- Forensic Biology Specialty Examination (Core Exam plus Biochemistry Module and Molecular Biology Module)

Individuals taking Specialty Exams must be a Diplomate of the ABC or be scheduled to take the GKE at the same offering. Diplomate certificates will be awarded to individuals who successfully complete the GKE. Fellow certificates will be awarded to individuals who successfully complete the GKE, Specialty Exam and appropriate proficiency test.

The sitting fee for individuals taking the GKE in 1994 is $120. Each Specialty Exam/Module is $75. The maximum amount an individual will pay for Specialty Exams will be 3x the current Specialty fee.

A completed application along with a $30 application processing fee must be submitted to Gloria Napolitano (ABC Registrar, P.O. Box 209, Greenlawn, NY 11740-0209 FAX: 516-261-2120) NO LATER THAN 60 DAYS PRIOR TO THE EXAM OFFERING. Diplomates of the ABC requesting to sit for a specialty exam must notify the ABC Registrar NO LATER THAN 60 DAYS PRIOR TO THE EXAM OFFERING. For an application or study guides to Specialty Exams, please write or FAX Ms. Napolitano.

ABC RECERTIFICATION

All ABC diplomates should have returned their Recertification Professional Development Form to the ABC with a $20 maintenance fee. Thirty dollars ($30) must accompany forms postmarked between March 1 and June 1. Forms postmarked after June 1 will not be processed.

Please telephone me if you have any questions. If you are thinking about taking the GKE or any of the Specialty Exams in Pasadena, please notify me. I am trying to get a handle on room requirements as early as possible.

Steve Renteria, ABC Representative (213) 226-4978

Developing a Laboratory Safety Program for OSHA Compliance

Paul Baughman, Forensic Chemist
Santa Clara County Crime Laboratory

According to the Occupational Safety and Health Act, Public Law 91-596 (employee safety in general); employees are entitled to federal standards which most adequately and feasibly assure that no employee will suffer any impairment of health. Functional capacity or diminished life expectancy, even if the employee has regular exposure to toxic or harmful materials. Employees are also entitled to federal standards which prescribe, where necessary, the labeling of hazardous

substances, protective equipment, and monitoring.

OSHA requires a safety program to be established as part of the organizations safety and health responsibilities to its employees.

An effective safety program will identify hazards in the workplace through the involvement of management and staff. It will also provide an administrative framework for dealing with Occupational Safety and Health issues, raise the level of awareness and participation of all the employees in Occupational Safety and Health. It will reduce the level of exposure of unsafe conditions or substances through work place monitoring and staff training. This will meet the organizations legal responsibilities and statutory requirements.

OSHA plays a major role in the safety programs of most specific requirements to be considered in developing a safety program.

Requirements or standards:

- Bloodborne Pathogens Standard 29 CFR 1910.1030 (Fed/OSHA), General Industry Safety Orders Section 5193, Title 8, California Code of Regulations (CAL/OSHA)
- Occupational Injury and Illness Prevention Program Title 8, Subchapter 7, Section 3203, California Code of Regulations.
- Laboratory Standard 29 CFR 1910.1450, Occupational Exposure to Hazardous Chemicals in Labs., Title 8, Section 5197, California Code of Regulations (For Laboratories)
- Hazard Communication Program, 29 CFR 1910.1200(a)(1), (Not for Laboratories), Title 8, Section 5194, California Code of Regulations, Among others.

Plans that these standards generate:

1. Bloodborne Pathogen Plan (Exposure Control Plan)
2. Hazardous Communication Program
3. Respiratory Protection Program
4. Hearing Conservation Plan
5. Occupational Injury and Illness Prevention Program
6. Chemical Hygiene Plan

For the purpose of this talk I will focus my attention on explaining the Chemical Hygiene Plan.

This standard requires all Laboratories using hazardous chemicals to develop and implement a Chemical Hygiene Plan.

The standard does not outline the specific health and safety issues that should be addressed by employers. It is meant to be flexible so that individual laboratories can tailor make the compliance towards the standard in their own special way. This flexibility does create difficulties in that the guide lines of the Chemical Hygiene Plan have not clearly been defined.

I will try to outline the elements of the laboratory standard that should be included in each laboratory's plan.

The first mission of an institutional safety program should be to set up a safety committee. It aids in the obligations of the employer to communicate safety issues, to respond to safety problems, aids in the interest of the employee to the safety program.

A Chemical Hygiene Officer should be appointed. The Chemical Hygiene Officer should be:

- Qualified through training or experience
- Must work with employees and administrators to generate and implement required policies
- Keep appropriate records
- Do audits
- Develop standard operating procedures
- Keep up with current legal requirements

The following are key points of the standard:

- Laboratories must have a written Chemical Hygiene Plan
- Training and chemical hygiene must be specific for the hazardous chemicals each particular laboratory uses
- Each laboratory may customize its plan to fit its own particular circumstances
- The plan must include work practices, procedures, and policies to ensure that workers are protected from hazardous chemicals
- Medical examinations and employee exposure monitoring must be provided if circumstances warrant such a need.
- Employees must be trained in proper emergency spill controls and safety and emergency response procedures
- Each laboratory must maintain Material Safety Data Sheets (MSDA's) in an easy accessible location

The Chemical Hygiene Plan could include each of the following elements:

- Standard operating procedures which consider safety and health factors.
- Criteria that managers will use to implement control measures to reduce employee exposure to hazardous chemicals.
- Ensure fume hoods are functioning properly.
- Provide and disseminate training information to the employee.
- A method for management to review and approve new lab techniques.
- Provide medical consultation and examinations.
- Provide environmental monitoring to ensure compliance.
- Designate personal responsible for the implementation and review of the Chemical Hygiene Plan.
- Provisions for additional protection of the employee as needed.

Considerations for the following:

- Establishment of designated areas for conducting particularly dangerous operations.
- Use of containment devises such as fume hoods and laminar flow hoods.
- Procedures for safe removal of contaminated or hazardous waste.
- Decontamination procedures.

OSHA has implemented heavy civil penalties (fines) to enforce it's regulations. For example, each willful violation such as failing to train an employee or failing to implement a Chemical Hygiene Plan, is subject to a $7,000 penalty. Also liability for the employer to civil action by the employee is possible.

What a CAL/OSHA Inspector expects of you:

- The inspector will question supervisors and individuals on their knowledge. They will discuss seven major components necessary for an effective program.

1. Identify responsible person or persons who are responsible for the program.
2. Communication process.
3. Enforcement system of the program.
4. System to identify and analyze hazards including periodic inspections and job hazard analysis.
5. Accident investigation responsibilities.
6. How a problem is fixed.
7. Training.

References and Suggested Readings

Stephen R. Rayburn, 1990, *The Foundations of Laboratory Safety*. New York, Brock/Springer Series in Contemporary Bioscience.

Code of Federal Regulations, Part 1910.1450 of Title 29 (29 CFR 1910.1450), 1990.

California Code of Regulations, Section 5191 of Title 8 (Title 8 CCR Section 5191), 1993.

is it Gasoline OR Insecticide?

Dean M. Gialamas

Introduction

Recently, the author was approached by his friend, Louis, with a problem. Louis and his neighbor had been arguing about Louis' two dogs. Apparently the four month old puppies were a nuisance to his neighbor. After numerous "run-ins," one evening Louis found his puppies in the backyard in convulsions. After taking the dogs to the emergency vet, he called the author. He said that a white, milky substance was found in the dogs' water bowl with a sharp, sweet odor. A sample of the tainted water was collected.

Various tests in the lab showed that the substance in the pups' water bowl was consistent with an insecticide. During the laboratory examinations, carbon disulfide extracts of various insecticides were prepared and gas chromatograms obtained as an exercise for the author. Most outdoor, ready-to-use products on the market today use a petroleum based carrier solvent to dissolve the active ingredients. Many consumer insecticides use a mineral-spirit or kerosene-like petroleum distillate product.

One insecticide, however, gave a rather remarkable gas chromatograph (GC) pattern from the carbon disulfide extract: A pattern similar to weathered gasoline.

Insecticides— A Brief Background

Insecticides are agents that are used to kill insects. Although, their actual chemical formulations may vary from manufacturer to manufacturer, the basic building blocks are fairly consistent. Insecticide formulations start with an Active Ingredient (AI). In order to be effective, the AI, usually a solid, must be dissolved in a petroleum distillate carrier. Once dissolved, this mixture is called an Insecticidal Concentrate (IC). (See Figure 1) The IC is typically found in industrial applications. In homeowner applications, the IC is mixed with emulsifiers and diluted with water to form an Insecticidal Emulsion. This is the form typically found in the ready-to-use applications found in local stores. All additions to insecticides other than the AI are considered inert ingredients.

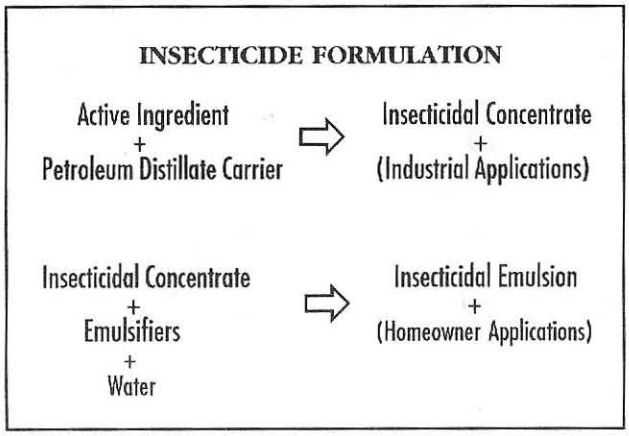


Figure 1

Petroleum Distillate Carriers — Typical GC Patterns

As mentioned above, most petroleum distillate carriers are of the mineral spirit- or kerosene-type petroleum products. They are considered part of the inert ingredient contents of an insecticide. Figure 2 shows the chromatogram of Bortziol® Mineral Spirits [1]. Figure 3 through Figure 6 show some GC patterns of pertroleum distillate carriers from common insecticides. Most have the typical distillate peak pattern. Note that Figure 6 shows a "deodorized" kerosene-type of distillate.

Spectracide®— Is it Gasoline or an Insecticide?

During part of the analysis of the insecticides, the author came across an unexpected, yet familiar pattern. Figure 7 shows the pattern from the carbon disulfide extract of a product called "Spectracide® Home Insect Control." The remarkable thing about this pattern is the resemblance it has to weathered gasoline, shown in Figure 8. Not only are similar peaks present but the relative concentrations of the peaks are comparable to what is found in gasoline. The pattern seen in the Spectracide® petroleum distillate carrier is one that mimics a weathered gasoline pattern starting at the xylene/ethylbenzene peaks (C_8-C_9). Notice that under the current ASTM guidelines [2], this appears to be a weathered, winterized gasoline residue: The m-ethyltoluene/pseudocumene five-peak group (C_9-C_{10}) is present, the characteristic "doublet-type" peak pattern following the five-peak gruop (C_{10}-C_{12}) is present, and even naphthalene (C_{11}-C_{12}) is present, although, the 1- and 2-methylnaphthalenes (C_{13}-C_{14}) are not present. (These substituted naphthalenes may be absent in some winterized gasolines.) The distinctive Spectracide® pattern was obtained both by solvent extraction (carbon disulfide) and passive diffusion (charcoal strip method) recov-

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ery techniques. A heated headspace recovery technique has not yet been attempted.

This is where the author's interest was sparked. What is in this insecticide? Why use a "gasoline-like" petroleum carrier? Most importantly, is this common or is this an isolated case? The packaging did not give any indication that a "gasoline-like" distillate was used. The neat insecticide did not even have a solvent odor. Contacts to the manufacturer, the Spectrum Chemical Group, provided the first lead: Dow Chemicals is the supplier of the Spectrum Chemical Group's insecticidal concentrate. After numerous phone calls, contact was made with a chemist who was willing to only fax the Material Safety Data Sheet (MSDS) for the insecticidal concentrate. (This was probably because the chemist was suspicious of a potential civil law suit because the questioning involved a poisoning.) Figure 9 shows a portion of the MSDS. Note that the petroleum distillate carrier is simply called "xylene range aromatic solvent." Well, what is that? Another phone call to Dow provided the next lead. The carrier is not produced by Dow: The "xylene range aromatic solvent" is supplied to Dow by the Exxon Chemical Company.

The chemist at Exxon Oil was very helpful; he is a co-author to an ASTM document on pesticide solvents [3]. It turns out that because of the low reaction efficiency of the conversion of crude oil to gasoline, many industrial solvents are derived from the waste, or "streams" as they are called, of the refining process. Many industrial insecticides use aromatic solvents because of their ability to dissolve larger concentrations of the active ingredient and because they have better agricultural performance characteristics, such as stick, spread and droplet size. Most home use pesticides use an aliphatic type of carrier since it possesses a lower volatility and lower odor than the aromatic solvents. (For an excellent review of agricultural solvents see Reference 3.)

Exxon produces many aromatic solvents, but the two which were of interest in this case were the solvents "Exxon 100" and "Exxon 150." (The numbers refer to the flash point of the solvent in degrees Fahrenheit.) These two solvents are 95 to 99.5% aromatic in their composition; very little, if any, sizeable amounts of aliphatics. They are sometimes labeled "high aromatic naphthas." The aromatic solvents are commonplace to industrial use insecticides and currently seen in some outdoor, home-use applications.

The Exxon contact, like the Dow contact, was a little reluctant to send samples since he also was suspicious of civil litigation. During some of the many calls to various fire debris analysts, John Lentini, fortunately, provided the author with some samples of very similar material. The solvents are produced by the Atlanta Solvent Company under the names "Lanasol 100" and "Lanasol 150." Figures 10 and 11 display the chromatograms of the two solvents. Figure 12 shows an interesting overlay combination of the Lanasol 100 and Lanasol 150 solvents: Notice the resemblance to the Spectracide® petroleum distillate carrier (Figure 7) and hence gasoline (Figure 8). The Lanasol 100 is primarily composed of the 5-peak group aromatics (C_9-C_{10}) while the Lanasol 150 is primarily composed of the aromatics providing the characteristic pattern after the 5-peak group (C_{10}-C_{12}). [As an interesting side note, take a look at Figure 4 which shows the chromatogram of Ortho Home Pest Control carrier solvent and compare it to the Lanasol 100 solvent in Figure 10.] What makes this product so interesting (and frightening!) is the combination of the two aromatic solvents in such proportions that it appears like a weathered, winterized gasoline. Apparently, the two solvents can also be found in very specialized industrial paints, metal cleaning agents and rarely in glues, but they have not yet been found together and in the same proportions as seen in the Spectracide® sample. [See Figure 7]

Conclusion— So What Does All This Mean?

The primary concern for this material is this: If an examiner is using a GC, and a sample comes in from a fire scene and this Spectracide/weathered gasoline-like pattern is among the peaks, is a call of gasoline going to be made? Figure 13 and the top of Figure 14 show the chromatogram from a passive diffusion recovery (charcoal strip) extract of a mock scene sample. Compare this to the chromatogram of weathered gasoline found on the bottom of Figure 14. So, — You make the call! Gasoline? Inconclusive? No identifiable residue? The buried pattern is remarkably similar to weathered gasoline. Perhaps a critical analyst may notice subtle differences (such as relative intensity differences and one

[4] The mock evidence sample was prepared by breaking two pieces of unburned presswood approximately 3" x 5" and placing them into a clean, unlined quart size aluminum can. Approximately 0.5 ml of the neat, ready-to-use Spectracide ® Home Pest Control insecticide was pipetted onto the wood samples. The can was fitted with a Protek ® charcoal recovery strip and allowed to adsorb overnight in a 60oC oven. The strip was removed and eluted with 10 drops of carbon disulfide. A 1.0 ul portion of the extract was analyzed to obtain the pattern in Figure 13 and the top of Figure 14. (The pattern on the top of Figure 14 is the same pattern in Figure 13 merely overlayed above an evaporated gasoline pattern.)

[5] There seems to be some disagreement among analysts about the significance of the presence or absence of aliphatics in gasolines by GC/MS analysis techniques. Some analysts require that aliphatics be present while others do not require their presence for a call of gasoline to be made.

or two "missing" peaks), while casual eyes may naively pass over the subtleties. Perhaps a casual examiner will call it gasoline. Or maybe it is inconclusive (and perhaps rightfully so!) due to the subtle awkwardness in its similarity to the gasoline pattern. The pattern in Figure 13 was obtained from the extract of the neat, ready-to-use Spectracide® Home Pest Control insecticide placed onto two small pieces of unburned presswood. [4] Any analysts change their conclusions?

Obviously, cautious interpretations are necessary on GC patterns like this. This material is distinguishable from a "true" weathered gasoline when the extract is examined neat, but with all the debris that is collected from a fire scene and the extraneous peaks produced from this debris, this distinguishability is easily lost. (As evidenced by Figure 14 in the previous "exercise.")

Those laboratories who use or have access to a GC/MS may be relieved of this concern because of the ability to search for aliphatics. If one recalls, the solvents above are relatively aliphatic "free," whereas, gasolines contain aliphatics. For those analysts who have seen gasolines "without" alkanes, a quick search of the indenes (C_9-C_{10}; amu 117, 131,145,159) will resolve any confusion. [5] Indenes are present in gasolines, while this aromatic material lacks their presence. If one has only a GC, a way to distinguish this material from gasoline is to use a polar column, which separates aliphatics from aromatics, or use a high resolution column to see the fine differences in the peak pattern. If unavailable, perhaps a simple waiver with the conclusion is warranted on those samples which are significantly weathered and lack the substituted naphthalenes.

Further Comments

Because of the obvious potential for confusion in analytical work, investigations with some accelerant detection canines to determine if this material will cause a canine alert was performed. Two canines were briefly tested. The canines, in general, were interested in the material. Although various reactions were seen, both handlers stated that the reactions and/or alerts were different or not as "strong" as they typically receive from their canine partners. Further investigations in this area are planned.

Any analysts reading this article are strongly recommended and urged to obtain a sample of this material and experiment with the pattern for themselves. (The Spectracide® Home Insect Control is readily available at Home Depot, Fedco, and Target stores — so it is not too difficult to find in Southern California.) If it is more convenient to contact the author for a sample, please do not hesitate to do so. For those interested, the pups have recovered and they are doing fine now.

Acknowledgements

The author would like to thank John Lentini of Applied Technical Services, Incorporated (Georgia) for the generous donation of time, GC/MS data and Lanasol samples to help in the investigation of this material; and the California Laboratory of Forensic Science for the donation of time and materials to accomplish the research. Appreciation is also extended to Edward F. Rhodes for his review and comments on the manuscript.

References

1. Technical Aside: Instrumentation and Conditions

Figures 2 through 8 and 10 through 12

Instrument: Shimadzu GC-Mini2 with TP-M2 Temperature Programmer and Shimadzu C-R3A Chromatopac Recorder. ***Column:*** 25M x 0.32mm ID x 1.0 µm '007' Bonded Phase Fused Silica Capillary Column (Quadrex Corporation) [Similar to SPB-5, DB-5, etc. columns]. ***Detector:*** Flame Ionization Detector. ***Temp. Program:*** Inj/Det: 250ºC. ***Column:*** 60ºC for 4 min to 220ºC at 8ºC/min. Split Injection.

Figures 13 and 14

Instrument: Shimadzu GC-Mini2 with TP-M2 Temperature Programmer and Shimadzu C-R3A Chromatopac Recorder. ***Column:*** 30M x 0.32mm ID x 1.0 µm SPB-5 Bonded Phase Fused Silica Capillary Column (Supelco Corporation). ***Detector:*** Flame Ionization Detector. ***Temp. Program:*** Inj/Det: 275ºC. ***Column:*** 60ºC for 4 min to 250ºC at 10ºC/min. Split Injection.

2. "Standard Test Method for: Flammable or Combustible Liquid Residues in Extracts from Samples of Fire Debris by Gas Chromatography," *Forensic Science Document E.*, p1387, American Society of Testing and Materials (ASTM), 1990.

3. Krenek, M.R. and Rohde, W.H. "An Overview - Solvents for Agricultural Chemicals," *Pesticide Formulations and Application Systems*, Eighth Volume: ASTM STP 980, American Society of Testing and Materials (ASTM), Philadelphia, 1989, pp. 113-127.

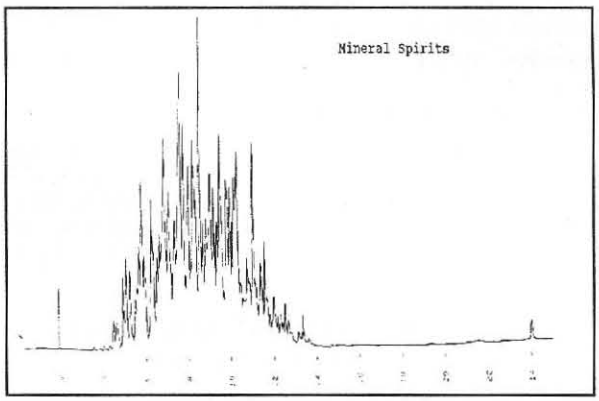

Figure 2
Neat Bartzoil Mineral Spirits (C_9-C_{12}, major peak at C_{10})

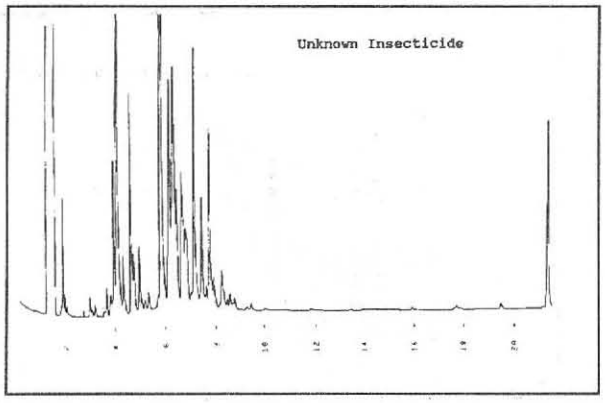

Figure 3
CS_2 extract of unknown insecticide from puppy's water bowl.

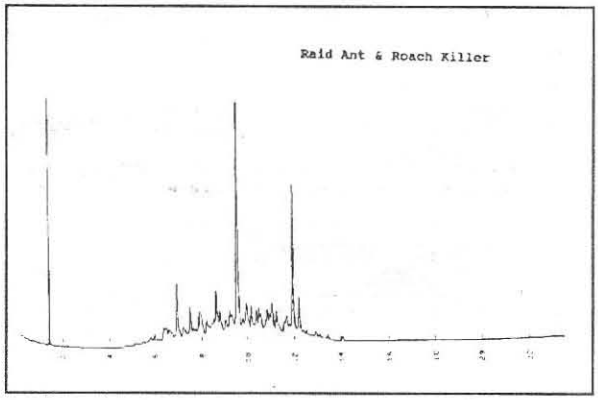

Figure 6
CS_2 extract of RAID Ant and Roach Killer.

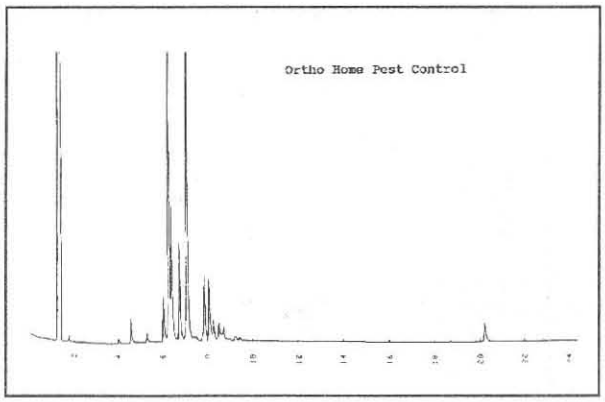

Figure 4
CS_2 extract of ORTHO Home Pest Control.

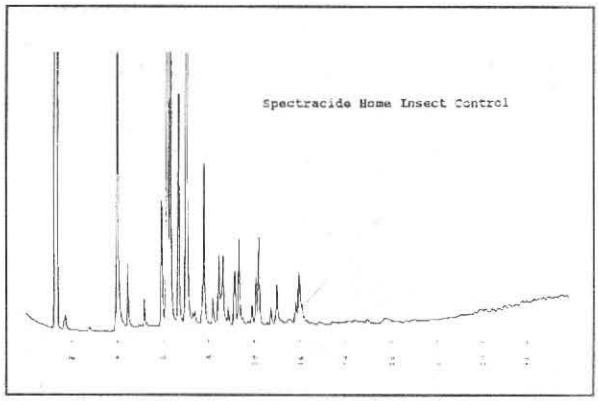

Figure 7
CS_2 extract of SPECTRACIDE Home Insect Control.

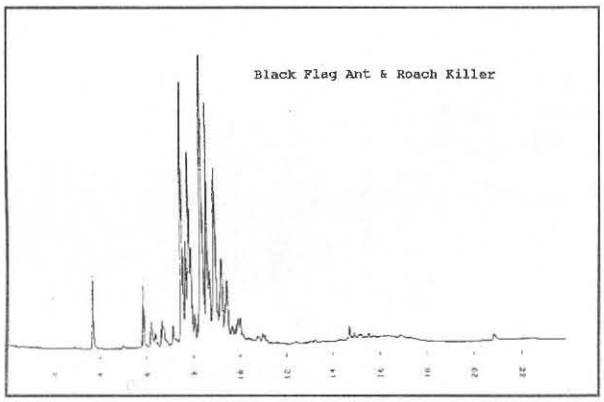

Figure 5
Neat injection of BLACK FLAG Ant and Roach Killer.

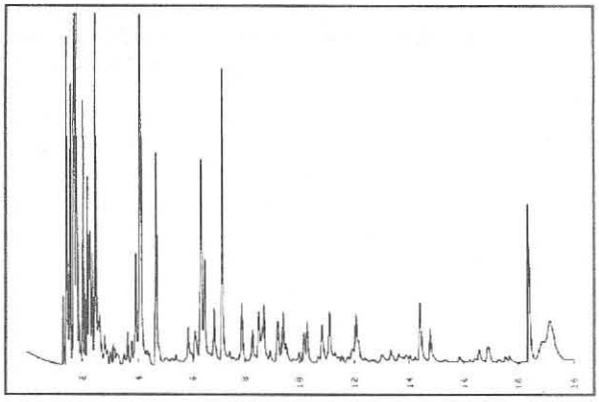

Figure 8
Slighly weathered gasoline.

MATERIAL SAFETY DATA SHEET

Dow Chemical U.S.A.* Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 25076 Page: 1
Product Name: DURSBAN (R) 4F INSECTICIDAL CONCENTRATE (P.L. & BULK)

Effective Date: 06/09/89 Date Printed: 02/28/90 MSD: 001829

1. INGREDIENTS: (% w/w, unless otherwise noted)

O,O-Diethyl O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate, (chlorpyrifos)	CAS# 002921-88-2	42.0%
Inert ingredients:		57.8%
Xylene range aromatic solvent	CAS# 064742-95-6	

Figure 9
Portion of MSDS from Dow Chemical.

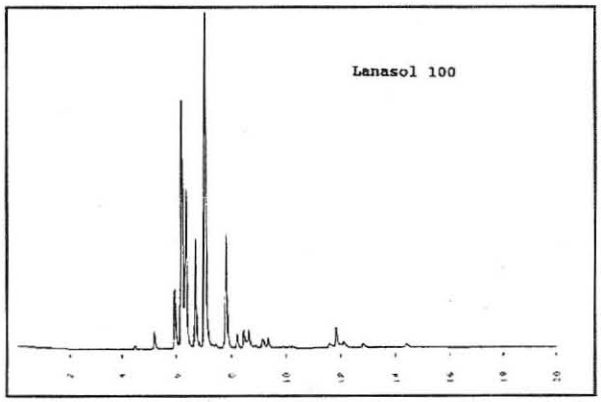

Figure 10
Neat injection of LANASOL 100 (same as EXXON 100).

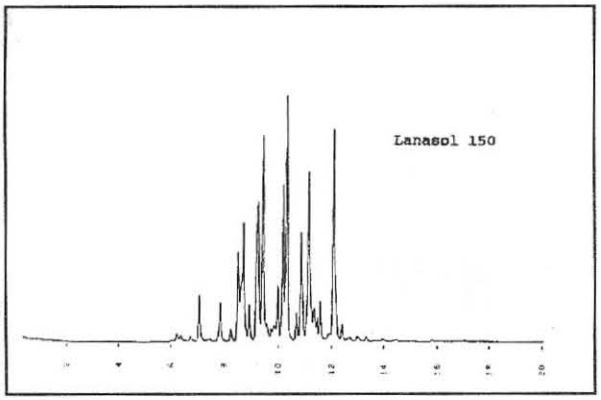

Figure 11
Neat injection of LANASOL 150(same as EXXON 150).

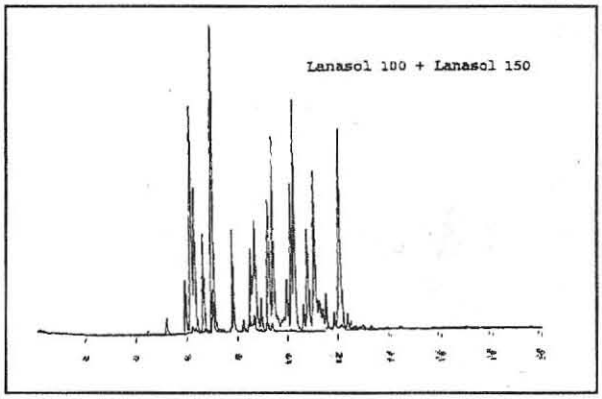

Figure 12
Superimposition of Fig. 10 over Fig. 11.

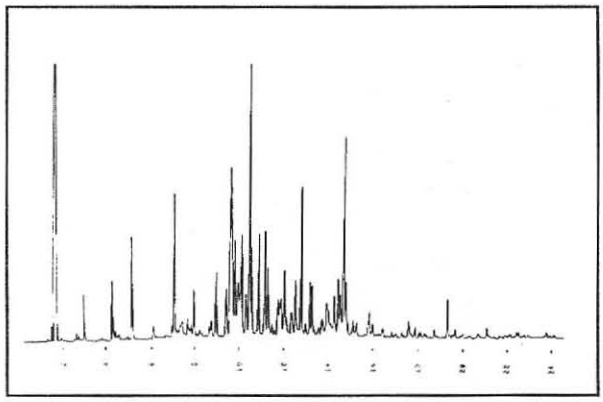

Figure 13
"Mock" scene sample obtained by passive recovery. (1.0 ul injection of CS_2 extract.) [4]

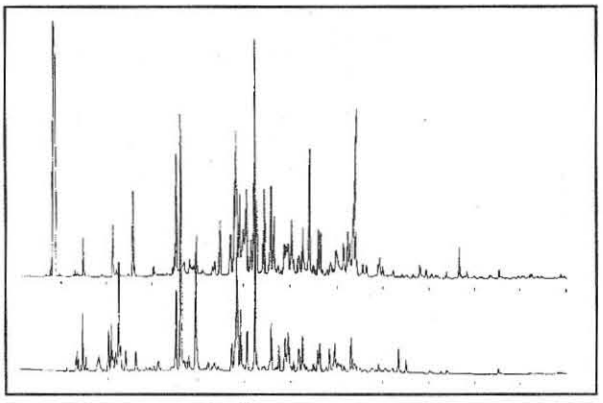

Figure 14
"Mock" scene sample. Bottom: Weathered gasoline.

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In Memoriam

Professor M. Edwin O'Neill 1905—1993

CHICAGO SUN TIMES

On September 20, 1993, Professor M. Edwin O'Neill passed away at his home in Santa Maria, CA. At the time of his death he was 88 years old and had been retired from the University of California since 1974.

Prof. O'Neill was born in N. Kenova, Ohio in 1905, moving to Morgan City, Louisiana in 1913 where he graduated from high school. He then went to Tulane University New Orleans, where he received his B.S. in 1929 and M.S. in 1931. For the next two years Prof. O'Neill carried out graduate studies in Ecology at Yale University, after which he returned to Tulane as Assistant Professor of Botany.

In 1934, Prof. O'Neill made a significant change in his professional life by accepting a position as Microscopist at the Northwestern University Scientific Crime Detection Laboratory in Chicago with the dual role of Instructor of Police Science in the NWU School of Law. (This after Calvin Goddard had left the Crime Detection Laboratory which he founded in 1929). In 1938, the Laboratory became the Chicago Police Crime Detection Laboratory and Prof. O'Neill continued to work there until 1949. During the World War II period he was a technical consultant and lecturer to both Army and Navy Intelligence units in the Chicago Area.

In 1949, Prof. O'Neill became Associate Professor of Criminalistics at the University Of California, Berkeley where he was to remain until retirement. It was during those years the Prof. O'Neill was to have great impact on students in the field of criminalistics. It was during the 1950's that the School of Criminology was at the peak of its success and influence in the Forensic / Law Enforcement community. Many of the graduates from the criminalistics program during this period became laboratory directors and leaders in the field of criminalistics. All remember Professor O'Neill for his realistic and practical approach to criminalistics in the courses he taught. Few of us will ever forget the lantern slides of the Lindbergh kidnapping ladder, and the discussion of Arthur Koehler's work in the identification of the wood used to make the ladder and its link to Hauptmann. Professor O'Neill's serious approach to criminalistics combined with his dry sense of humor made for continued interest on the part of his students. It is clear the he will not be forgotten by then nor will his place in the history of criminalistics in California.

Professor O'Neill's wife predeceased him by nine months and his closest surviving relative is a nephew, Alvin E. Brizzard of Las Vegas, Nevada.

—Paul Dougherty

Reba Louise Kirk 1899—1994

Reba Louise Kirk, the widow of Dr. Paul L. Kirk, passed away on March 1, 1994 at the age of 94. For all of the former students of Paul Kirk at the University of California at Berkeley, this news has and will generate feelings of sadness. But more importantly it will bring back many fond and vibrant memories of their years at Cal. Reba Kirk was an integral part of the Paul Kirk/Berkeley experience. Students of Paul Kirk were invited into the Kirk's home with warmth and caring, not to mention some memorable dinners, at a time in their lives when home-cooked meals were few and far between. Open house celebrations of holidays were especially memorable.

The tiny stature of Mrs. Kirk belied her strength, courage and great concern for the welfare of others. She was born July 7, 1899 and grew up on a farm in the Midwest with a sister and two brothers. Her family prized education and she graduated from college at a time when this was not a common event for women. She married Paul Kirk in 1928 and they had two daughters, Anita and Mary Elise. She accompanied Paul Kirk to the Univ. of Chicago when he joined Dr. Glenn Seaborg's group on the Manhattan Project and subsequently to Richland, WA. There Dr. Kirk's ultra-microanalytical work on the separation of plutonium from uranium and the accompanying fission products continued. After the war they moved back to Berkeley, where Paul would rejoin the Biochemistry department and later join in creating the School of Criminology.

To those students who came to know them both, it was clear that her loving and consistent support of Dr. Kirk in his professional career was instrumental in his profound impact on the development of the field of Criminalistics in this country. Dr. Kirk died on June 5, 1970, but that did not end the influence of Mrs. Kirk on the students who had passed through their lives at Berkeley. She was always interested to hear from them and caringly enquired about their professional and personal lives.

Although she is now gone, those of us whose lives she touched will always remember her for her personal touches, as well as the direct and indirect influence on our lives.

Donations in her memory may be made to: Alta Bates Hospital Foundation, 2450 Ashby Ave., Berkeley, CA 94705.

—Charles V. Morton

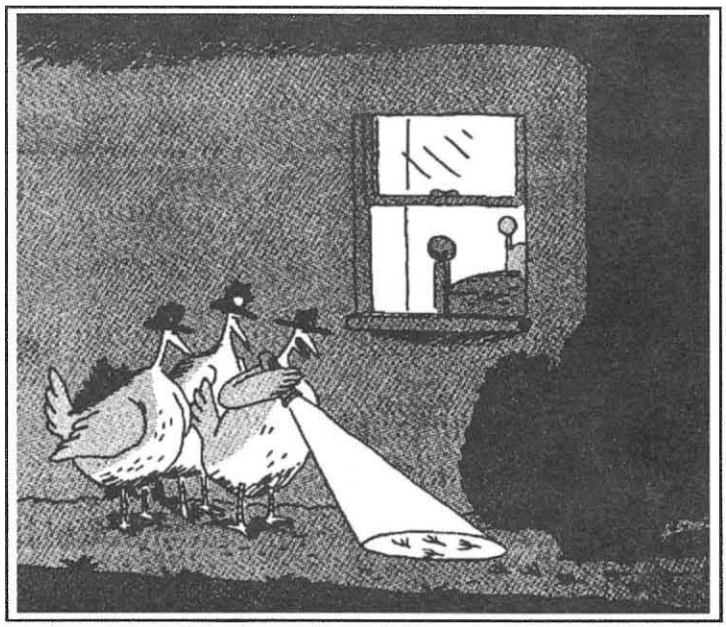
Barry Jakovich 1962—1993

Barry Jakovich passed away on December 24, 1993. He was 31. Barry worked as a criminalist for the Los Angeles Co. Sheriff's Crime Laboratory. He was assigned to the blood alcohol section for two-and-a-half years, and then for six months in the narcotics section. He was single and left no children.

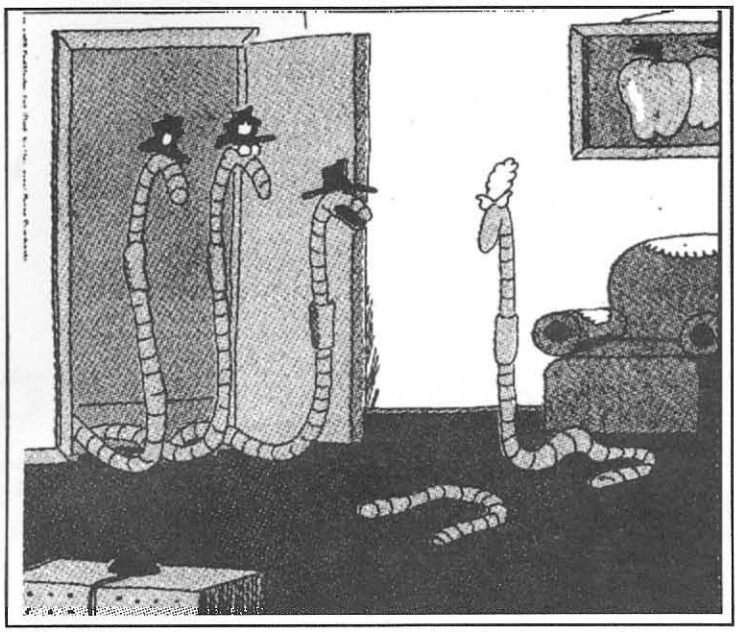
Then Again, Maybe Not...

In October, gun expert Stephen Barlow, testifying for the prosecution against a man charged with murder in Salt Lake City, held the murder weapon in his hand and told the jury that it could not possibly have discharged by accidental jarring, as the defendant had claimed. To demonstrate this, he place a pencil in the barrel, pointed it at the ceiling, and jarred the handle. The gun fired the pencil. In two subsequent demonstrations, the gun again fired pencils. "Oh, I'm sorry," Barlow told the prosecutor. The defendant was allowed to plead guilty to manslaughter instead of murder.

—January 27, 1994, *Star Watch*, supplement to the Ventura County *Star-Free Press.*



"Aha! The murderer's footprints! 'Course, we all leave tracks like these."

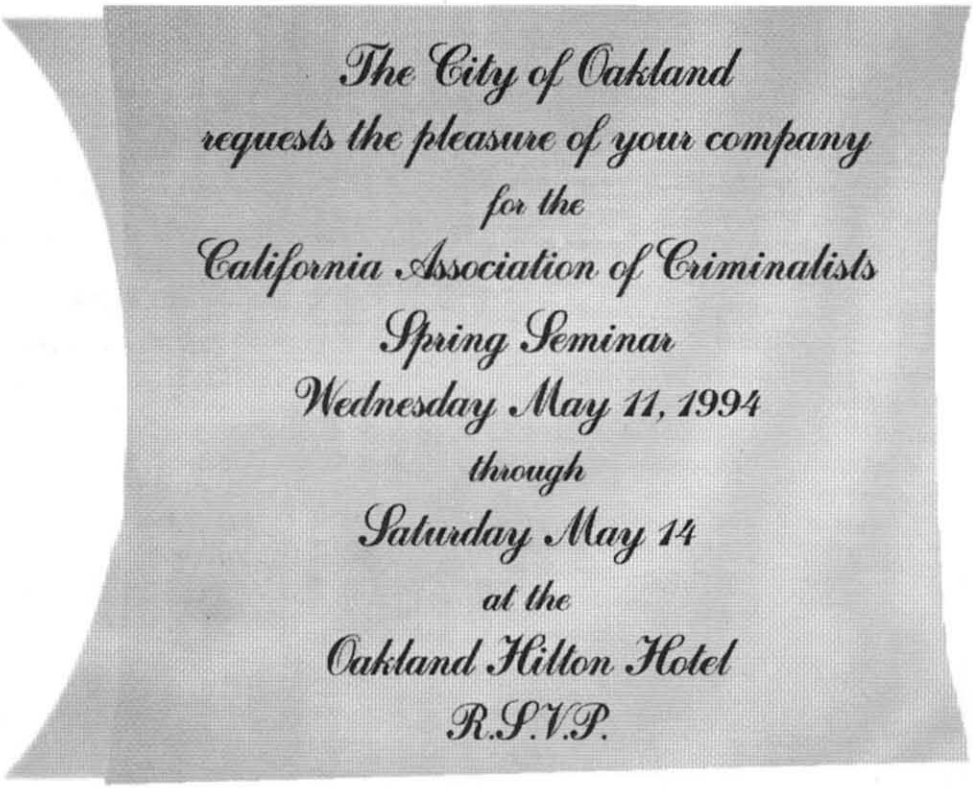


"We understand your concern, ma'am— but this just isn't enough for us to go on. Now, you find the other half of your husband, and then we've got a case."

Take the "IDIOT TEST!"

1. Do they have a 4th of July in England?
2. How many birthdays does the average man have.
3. Some months have 31 days; how many have 28?
4. A woman gives a beggar $.50; the woman is the beggar's sister, but the beggar is not the woman's brother. How come?
5. Why can't a man living in the U.S. be buried in Canada?
6. How many outs are there in an inning?
7. Is it legal for a man in Calif. to marry his widow's sister? Why?
8. Two men play five games of checkers. Each wins the same number of games. There are no ties. Explain.
9. Divide 30 by half and add 10. What is the answer?
10. A man builds a house rectangular in shape. All sides have a southern exposure. A big bear walks by. What color is the bear and why?

IDIOT TEST: 1. yes, there's a fourth of July everywhere. 2. only one birth day. 3. all of them. 4. because she's a woman. 5. because he's still alive. 6. six, three for each side. 7. no, because he's dead. 8. they're playing different people. 9. 70; 30 div by .5 plus ten. 10. White (polar) bear, because he's at the north pole.



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Tentative program includes FT-IR workshop, Courtroom testimony workshop, D1S80 and or DNA user group forum. Business meeting is scheduled for Friday. Pre-registration deadline is April 29, 1994. For more information, please contact Mary M. Gibbons, Seminar Committee Chair, Oakland Police Dept., 455 7th St., Room 608 Oakland, CA 94607