



# TOX TALK

## Society of Forensic Toxicologists, Inc.

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1991

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### S.O.F.T./C.S.F.S. MEETING

September 23-27, 1991  
Montreal, Canada

William D. Robinson, S.O.F.T. Liaison  
Centre of Forensic Sciences  
25 Grosvenor Street  
Toronto, Ontario M7A 2G8  
Canada (416) 965-9507

## PRESIDENT'S MESSAGE . . . . . WILLIAM H. ANDERSON, PH.D.

As our attention turns to the fall meeting in Montreal, SOFT members can look with pride at the maturation and many accomplishments of the Society. The completion and publication of the Forensic Toxicology Laboratory Guidelines is the culmination of many hours of work by the Guidelines Committee. I am sure that I speak for all SOFT and AAFS members when I extend our thanks and appreciation to Dr. Michael Peat and members of the Guidelines Committee for all their efforts. They have produced a useful and much needed set of documents that should be useful to all forensic toxicologists.

Preston Publications has once again extended to SOFT the privilege of appointing a special editor for the upcoming issue of the Journal of Analytical Toxicology. Lee Hearn reports that the response by SOFT contributors has been outstanding. Gone are the days when the special editor had to coerce colleagues into submitting papers for this issue. This year the number of submissions that are worth of publication has exceeded the space that can be allotted for a single issue. The number and quality of submissions is a tribute to the research efforts of SOFT members.

The Montreal meeting is shaping up to be an informative and enjoyable event. Again, SOFT members have responded well to scientific challenges with 37 of the 45 accepted toxicology papers coming from the U.S.

With response and participation as described above it is no wonder that SOFT is continuing to grow and prosper. I hope to see all of you in Montreal.

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\* THIS ISSUE CONTAINS THE ONLY DUES NOTICE YOU WILL RECEIVE FOR 1992 \*  
\* \* \* \* \*

## IN THIS ISSUE

- REGULAR FEATURES - Professional Calendar - Elmer Gordon - Career Opportunities  
- Membership Update
- TECHNICAL NOTES - UNUSUAL CASES: THE ONE THAT ALMOST GOT AWAY (edited by Vickie Watts)  
Journal Club - Call for Case Notes
- INSERTS - 1992 dues notice
- SPECIAL INTEREST - AAFS Awards/Scholarships information

SOFT/CSFS ANNUAL MEETING                      September 23-27, 1991                      LeGrand Hotel, Montreal

If you have not received your separate mailing with the latest program information, including toxicology paper titles, registration form with fees in US currency, and free SOFT button order form, call Pat Monforte immediately at 313-884-4718

# NOMINATING COMMITTEE PRESENTS 1992 SLATE

The SOFT Nominating Committee, consisting of Robert Bost (chair), Joseph Monforte, and Ed Briblia, proposes for your consideration the following nominees as 1992 officers and board members.

PRESIDENT: JEANNE M. BENO, PH.D.

Dr. Beno received her Ph.D. in Pharmacology from the University of Rochester Medical School. Her positions include Chief Toxicologist for the Monroe County Medical Examiner's Office and the Director of the Employee Drug Screening Laboratory for the Eastman Kodak Company, Rochester, NY. Dr. Beno's SOFT activities include: Board of Directors (1988-90), Nominating Committee, Publications Committee, Chairman of the Health and Safety Committee, and current Vice President

VICE PRESIDENT: ALPHONSE POKLIS, PH.D., D.A.B.F.T.

Dr. Poklis graduated from the University of Maryland in 1974 with a Ph.D. in Toxicology. After 10 years at the St. Louis University/Medical Examiner's Office, in 1987 he joined the Medical College of Virginia as Associate Professor, Dept. of Pathology, and Affiliate Professor, Dept. of Pharmacology-Toxicology, as well as Director of the Toxicology Laboratories for the MCV Hospital. Dr. Poklis is a member of the SOFT Guidelines Committee, past board member, 1984 Meeting Host, and has served as Secretary for the past two years.

SECRETARY: VINA SPIEHLER, PH.D., D.A.B.F.T.

Dr. Spiehler worked in the Scientific Instruments Division of Beckman Instruments before returning to school to receive her Ph.D. in Pharmacology and Toxicology from U.Cal.-Irvine. As a Fogherty Fellow she studied pharmacokinetics in Sweden. Dr. Spiehler spent 6 years with the Orange County Sheriff-Coroner and is currently Technical Director for Drugs of Abuse at Diagnostic Products Corporation. As a Fulbright Fellow, Dr. Spiehler researched the application of artificial intelligence to interpretation in forensic science. She has been a SOFT member since 1982 and has completed 2 years of her current 3 year term as a Director of the SOFT Board.

ADDITIONAL DIRECTORS (2 - 3-year terms, 1 - 1-year term)

JOSEPH J. SAADY, PH.D., D.A.B.F.T.: After receiving his Ph.D. in Pathology/Toxicology from the Virginia Commonwealth University, Dr. Saady joined the Medical College of Virginia where he is currently Associate Director of Toxicology and Director of the Forensic Laboratory. Dr. Saady has attended numerous SOFT meetings where he has assisted in various capacities and is looking forward to an opportunity to further serve the Society.

CHIP WALLS, B.S.: Mr. Walls received his B.S. in chemistry and biology from the University of Alabama in Birmingham. His current responsibilities include Toxicologist for the Onondaga County Medical Examiner's Office (Syracuse, NY) and technical consultant and advisor with the Central NY Regional Poison Control Center and the Criminalistic Section of the Sheriff's Department. He has served on many SOFT committees including Finance, DUID (chair), Health & Safety, and the ToxTalk Editorial Board. His "Journal Club" is a regular feature in ToxTalk, and Mr. Walls has held important positions at many SOFT meetings.

1 year term: In the event of Dr. Spiehler's election as Secretary, the Nominating Committee proposes that her remaining 1 year as a Director be completed by:

RONALD C. BACKER, PH.D. - Dr. Backer received his Ph.D. from the University of Arizona in 1970 and is currently Toxicology Bureau chief for the New Mexico State Health Laboratories and Forensic Toxicologist for the New Mexico Office of the Medical Investigator (MEO). He has presented papers at SOFT meetings and was formerly responsible for media promotion.

Elections will take place on Thursday, September 26th, during the 1991 annual meeting in Montreal.

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This information received too late for the last page: POSITION AVAILABLE: DIRECTOR OF TOXICOLOGY for full service laboratory, department head and hands-on manager; Ph.D. with experience in clinical chemistry and toxicology preferred; familiar with CAP and NIDA inspection needs. Salary: \$40,000 to \$50,000. Contact Joe Quinlan, Resource Technology Associates, Inc., 2720 River Rd, Suite 45, Des Plaines, IL 60018, telephone: 708-390-6670 FAX 708-390-0069



THE SOCIETY OF FORENSIC TOXICOLOGISTS  
THE CANADIAN SOCIETY OF FORENSIC SCIENCES  
INTERNATIONAL ASSOC. OF BLOODSTAIN PATTERN ANALYSTS



JOINT MEETING

SEPTEMBER 23-27, 1991

Le Grand Hotel, Montreal

"Sciences sans Frontieres"

MEETING UPDATE -----

MONDAY - Registration, "Immunoassay of Drugs" and "FTIR" workshops, "DNA Symposium" begins

TUESDAY - Registration, SOFT Board Meeting (a.m.), ABFT Board Meeting (p.m.), "DNA Symposium" continues, "Benchtop Mass Spectrometry" and "Fires of Electrical Nature" workshops, exhibitors, official Welcoming Reception

WEDNESDAY - Registration, scientific papers (all day), posters, exhibitors, cocktails and special presentation (evening), NIDA inspectors' reunion (evening)

THURSDAY - Registration, scientific papers (a.m.), CAP luncheon, SOFT and CSFS annual meetings (p.m.), cocktails and banquet (evening)

FRIDAY - Registration, plenary session (a.m.), scientific papers (p.m.)

Dr. C. Nicholas Hodnett will represent SOFT with a presentation for Friday's Plenary Session.

FORENSIC TOXICOLOGY GUIDELINES COMMITTEE Monday noon meeting not yet confirmed.

----- CONVENIENT CHECK LIST -----

If you are planning on attending the meeting, have you:

\_\_\_ Ordered your FREE SOFT BUTTON? Supply is limited to SOFT meeting registrants and not guaranteed after September 15th.

\_\_\_ Made your hotel reservation by the August 31st deadline. Le Grand Hotel 1-800-361-8155 or 514-879-1370; CSFS/SOFT rates: \$125/single, \$145 double, plus tax (Canadian dollars)

\_\_\_ Mailed your registration to CSFS? Be sure to use the new form with the converted U.S. funds. Please register soon to allow proper planning. Registration accepted at the door BUT MATERIALS AND BANQUET SEATING MAY NOT BE GUARANTEED.

Refer to the meeting information, including toxicology papers titles, that was mailed to SOFT members 8/09/91. If you have not received this special mailing, contact Pat immediately (may not be available 9/06 - 9/11, leave recording)

For further meeting information, telephone:

313-884-4718 (Michigan) Pat Monforte, the Society of Forensic Toxicologists  
416-965-9507 (Toronto) Bill Robinson, SOFT Meeting Liaison  
514-873-2704 (Montreal) Carole Pecllet or Francois Julien, the Canadian Society of Forensic Sciences

## UNUSUAL CASES: THE ONE THAT ALMOST GOT AWAY

EDITED BY VICKIE WATTS

EDITOR'S NOTE: The Call for Papers which appeared in the June issue of ToxTalk invited SOFT members to submit short reports on cases involving deaths from an unusual drug or circumstances. The response from the membership was a disappointing ZERO. The following cases are the result of personal contacts by Vickie Watts. I thank Vickie for her persistence and the contributors for their responses. Additionally, the following papers solicited by Vickie Watts will appear in the March 1992 issue featuring antidepressants: "Bupropion Case Report" by Bruce Goldberger et al, "A Suicidal Overdose of Bupropion (Wellbutrin) by James Meeker et al, and "Fatal Intoxication Involving Etryptamine" by Ramon Morano, et al.

As editor of ToxTalk, I am certainly open to suggestions regarding membership involvement in the publication and encourage your comments.

\* \* \* \* \*

## A BACLOFEN (LIORESAL®) ASSOCIATED FATALITY

**Contributors:** Albert D. Fraser, Wallace MacNeil, and Arthur F. Isner, Toxicology Laboratory, Victoria General Hospital, 1278 Tower Road, Halifax, N.S., CANADA B3H 2Y9.

Paper presented at TIAFT 1991 Copenhagen, Denmark.

Baclofen is an analog of the inhibitory neurotransmitter gamma amino butyric acid. It is prescribed for the treatment of spasticity resulting from multiple sclerosis and for various spinal cord injuries. Trough serum concentrations of baclofen range from 200-600 ng/mL after daily doses of 40-80 mg. Toxic serum concentrations have been reported to range from 1100-3500 ng/mL.

In this case, a 30 year old male with quadriplegia was brought to a hospital following a suspected overdose of baclofen (Lioresal®). The objective of this study was to develop a method for the identification and quantitation of baclofen in biological fluids. Baclofen was identified by GC-MS from a urine extract without derivatization with trinitrobenzene sulphonic acid and analysis on a RP-8 column with UV detection at 340 nm. The mobile phase was a 1:1 mixture of CH<sub>3</sub>CN/0.08 M acetate buffer (pH 4.7). The internal standard used was gabapentin.

The concentration of baclofen was 17 mg/L in serum and 760 mg/L in urine on specimens collected approximately 12 hours following ingestion. No other drugs or alcohols were found in a urine drug screen performed at that time.

To our knowledge this is one of the first baclofen related fatalities where analysis of the drug was performed in biological fluids.

NEXT ISSUE: DEATH BY POISON

Including papers from Robert Forney, Jr., Robert Osiewicz, and the R.C.M.P. Central Forensic Laboratory (Ottawa)

## BLOOD FLUORIDE BY ION-SPECIFIC POTENTIOMETRY

CONTRIBUTORS: Greg Ohlson, Toxicologist, and Frank Sheridan M.D., Pathologist, San Bernardino County Coroner, CA 92404

HISTORY OF DEATH: The history as obtained by the investigating officer is that this 2-year-old male was born by normal delivery without complications on May 8, 1989, and was apparently healthy with no medical history. The subject's grandmother arrived at about 1000 hours. She later stated the child was playing normally and helped when she was cleaning the residence. According to the grandmother, when the subject was helping her clean, she saw him with a bottle of Ring King Mineral Stain Remover up to his mouth. The grandmother shouted for the father who picked up the subject and held him under his arm trying to get the liquid out of his mouth. The subject reportedly started regurgitating yellowish fluid. A 911 call was received at about this time at police department. They apparently contacted "Poison Control". (It is not clear who initially called Poison Control). Information was given to the effect that the substance was of generally low toxicity. A police officer arrived at the residence at about 1134 hours on May 29, 1991, to find the subject vomiting with his eyes rolling back in his head and the subject also appeared to be falling asleep. The paramedics were summoned. The subject was taken to hospital emergency room, arriving there at 1203 hours on May 29, 1991.

On arrival at the emergency room, the subject was pale and appeared ill. He was lethargic. CBC on arrival showed a WBC of 9.4 K with a hemoglobin of 12.9 grams/dL and a normal differential white count. The glucose was 362. Review of the medical records indicates that no intravenous infusion was started until after the blood was drawn for these tests. The BUN was 19, creatinine 0.8, sodium 139, potassium 3.5, chloride 98, CO<sub>2</sub> 20. The pulse rate was 150 per minute, respirations 28. The subject was admitted. It would appear from a note at 1413 hours on May 29, 1991, that the subject subsequently developed seizures and went into ventricular fibrillation. ACLS measures were initiated, but to no avail, and the subject was pronounced dead at 1517 hours on May 29, 1991.

Information is submitted from the manufacturer concerning Ring King Stain Remover. The active ingredient is ammonium bifluoride. A detailed toxicity rating is attached indicating that the substance is non-irritant, non-water reactive, non-combustible and apparently of low toxicity. The container was submitted for examination. On the back of the container is the caution that the substance may cause irritation of the skin and eyes on contact.

EXTERNAL EXAMINATION: The body is that of a Caucasian male child appearing about the stated age of 2 years. The body is not embalmed. The height is 35", the weight 30.5 lbs.

PERTINENT INTERNAL EXAMINATION: There is no evidence of corrosive injury to the epiglottis, larynx, trachea or bronchi. The right lung is 170 grams, the left, 140 grams. The lungs are normally formed. The cut surfaces show pink-tan parenchyma with mild to moderate bibasilar congestion. The pulmonary arteries are normal. There is no evidence of corrosive injury to the mucous membranes of the mouth. The esophagus is intact and shows no evidence of corrosive poisoning. The stomach contains a few cc. of mucoid, reddish material. There is focal hyperemia of the gastric mucosa, but the gastric wall is intact and there is no hemorrhage. There is no blood in the small intestine and the mucosa of the duodenum shows no evidence of hyperemia. The small and large intestines are normally formed.

PERTINENT MICROSCOPIC EXAMINATION: Microscopic sections of the larynx, trachea and intrapulmonary bronchi show marked submucosal congestion and edema with dense, mixed inflammatory cell infiltrates, in which lymphocytes and plasma cells predominante. The lungs are congested but there is no consolidation. A section of lower esophagus shows submucosal congestion and edema with scattered inflammatory cell infiltrates. A section of stomach shows focal mucosal congestion and superficial hemorrhage. There is no ulceration. Sections of duodenum and ileum are normal. Sections of cerebrum and cerebellum show congestion of small blood vessels and generalized hypoxic nerve cell damage. Sections of brainstem and spinal cord are unremarkable. A section of dura is normal. Other microscopic sections

examined including sections of heart, pancreas, liver, kidneys, testis, spleen, thymus, pituitary, thyroid and adrenal confirm the gross autopsy findings and show no significant additional features.

TOXICOLOGICAL ANALYSIS FOR FLUORIDE

A 704-91 (B)	1770 mg/L
A 704-91 (G)	8.95 mg/L
Ring king fluid	147 g F/L

CAUSE OF DEATH: Acute fluoroide toxicity, hours, due to ingestion of toilet stain remover, hours.

\* \* \* \* \*

CALL FOR CASE NOTES / ARTICLES / PAPERS  
FOR ToxTALK

You are encouraged to submit technical data for inclusion in a future issue of ToxTalk, the official publication of the Society of Forensic Toxicologists. You need not be a member of SOFT.

INSTRUCTIONS:

1. Material should be submitted in print-ready form as follows:

- A. On 8-1/2 x 11 inch white paper
- B. Top margin of 1/4 inch
- C. Right and left margins of 1/4 inch
- D. Bottom margin of 1/2 inch
- E. Condensed print is encouraged

If you cannot provide print-ready material, your submission will still be considered but publication may be delayed.

2. Maximum length should be one page; 1/2 page case notes preferred

Longer papers will be considered with publication determination based on merit and available space.

3. Papers on requested topics will be given priority.

4. Unless otherwise instructed, send your paper, article, or case note to:

Dr. Joseph R. Monforte, ToxTalk Editor, 1013 Three Mile Drive, Grosse Pointe Park, MI 48230-1412

REQUESTED TOPICS:

DEATH BY POISON - deadline November 1, 1991 Submit to: Dr. Monforte at address above  
(telephone: 313-224-5626 or 313-884-4718)

ANTIDEPRESSANTS - deadline February 1, 1992 Submit to: H. Chip Walls, Tox Lab, Rm 706, 600 South State Street,  
Syracuse, NY 13202 (telephone: 315-435-3801)

## A VERY STABLE POISON

Contributor: Rod McCutcheon, Texas Department of Public Safety, Austin, Texas.

This case is about a very friendly young man, Tim, two elderly sisters, Catherine and Cordelia, and an elderly couple, Olgie and Leita. It took place in the hill country of Central Texas. Tim befriended the elderly sisters when he moved to Llano, Texas. Two years later he moved to San Angelo, Texas, where he made many friends in the older adult community.

Olgie and Leita were two of these friends. He worked for several years in their business. While Leita was out of town he convinced Olgie to sell him the business. When his business ventures began to go bad, bad things began to happen.

The two sisters in Llano were in poor health. Tim had often returned to help them over the years. In February of 1987, he had returned to Llano to take Catherine to the hospital for a pancreatic cancer operation. While she was recovering in the hospital, Cordelia went to the hospital with severe vomiting, diarrhea, stomach cramps, and vomiting. When she died the next day. Catherine returned home the day after Cordelia's death and died the following day. Tim had both of them cremated "as they had requested." No autopsy was ordered in either case. They left Tim no money in their will.

Tim owed thousands of dollars to several people in San Angelo, including Olgie and Leita. One month after the sisters died, Olgie became very ill with symptoms of vomiting, diarrhea, and stomach cramps. He would not go to the doctor and died three days later. He was buried without an autopsy being performed.

Leita was also feeling bad at this time with some of the same symptoms. She went to the doctor, who said it was her ulcer acting up. She kept taking her antacid but she kept getting worse. When she began to have some paralysis in her extremities, she went to the hospital. They determined she had been exposed to arsenic. While in the hospital Leita was notified that nine checks, with questionable signatures, totaling \$37,000.00 were written on her account and deposited into Tim's account. The last five were while she lay paralyzed in the hospital.

An investigation ensued by the local authorities and by a tenacious District Attorney from a nearby jurisdiction, who happened to be the nephew of Olgie and Leita. He called in the Texas Rangers and the investigation was intensified.

Olgie's body was disinterred and tested for arsenic. Tissue analyses showed high concentrations of arsenic. Hair samples from Olgie and Leita were sent to Texas A & M University for neutron activation analysis. The results showed a high concentration in Olgie's hair (99.8 mg/kg) at the time of exposure just prior to his death. Leita's hair showed a concentration of 130.1 mg/kg at the time corresponding with her paralysis. Earlier exposures at lower doses were also detected, which may have allowed her to build some tolerance. Several bottles of Riopan Plus from Leita's house were submitted for analysis. One bottle had a high concentration of arsenic. The investigation showed that Tim had recently purchased several bottles of

Cowley's Rat Poison to kill some coyotes on the elderly sisters ranch in Llano. the ranchers in the area said there had never been a coyote problem in the area.

The Texas Ranger in San Angelo called the Ranger in Llano to advise him of the situation. The only problem was that the sisters' bodies had been cremated and the remains rested in two brass urns.

The question to the lab was "can you detected arsenic in cremated remains?" The answer was "I don't know but we will try."

The remains were sent to Texas A & M for neutron activation analysis. At the same time the classic acid digest with detection of arsine gas by silver diethyldithiocarbamate was performed inhouse. The results of the two analyses were consistent. The neutron activation analysis showed arsenic to be present in Cordelia's remains in a range from 4.4 to 19.6 mg/kg. The bone material contained the lower quantity and the soft dark ash contained the higher concentration. No arsenic was detected in Catherine's remains.

Tim was tried in San Angelo for the murder of Olgie and the attempted murder of Leita. He was found guilty on both counts and given two life sentences. He pled guilty to the murder of Cordelia.

A lady at the hotel where we were staying during the trial in San Angelo had worked with Tim several years earlier. She said, "He was such a nice young man. I can't believe he would do something like that."

\* \* \* \* \*

### A.A.F.S. ANNOUNCES AWARDS & SCHOLARSHIPS

Members are encouraged to submit nominations for AAFS Toxicology Section awards and scholarships:

ALEXANDER O. GETTLER AWARD - Recognizes outstanding achievements in analytical toxicology.

ROLLA N. HARGER AWARD - Recognizes outstanding contributions to forensic toxicology (analytical/educational/ advancement of the profession).

IRVING SUNSHINE AWARD - Recognizes outstanding research work performed by a young investigator. This award carries a stipend to help defray the cost of AAFS meeting attendance.

RAYMOND ABERNETHY AWARD - This newly-created award is given to an outstanding forensic toxicology practitioner. Nominators are reminded they are responsible for a letter of nomination, copy of the candidate's most recent resume, and arrangements for any letters of endorsement from other individuals.

SCHOLARSHIPS: The AAFS Toxicology Section may grant two (2) scholarships each year valued at approximately \$1,000 each. These scholarships are intended to support the research work of students pursuing advanced degrees at accredited institutions. The experimental work must pertain directly to problems in forensic/analytical toxicology.

For application instructions and further information, please contact: Leo A. Dal Cortivo, Ph.D., Chair, Awards/Scholarship Committee, AAFS Toxicology Section, P.O. Box 1278, Montauk, NY 11954 Telephone: (516) 668-5069

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### S.O.F.T. EDUCATIONAL RESEARCH AWARDS OFFERED

Remember, SOFT has worked hard to establish the Educational Research Award for graduate level research projects which advance the foundations of forensic toxicology in academic settings. For further information, contact the SOFT Administrative Office, 1013 Three Mile Drive, Grosse Pointe Park, MI 48230-1412 Telephone: 313-884-4718.



## DETECTING XYLENE EXPOSURE

We were asked in early 1991 if a "test" could be performed to detect exposure to xylene. An employee of a paint manufacturer had been diagnosed by an allergist of having the "Multiple Chemical Sensitivities" syndrome. That physician stated that the lady was unable to work and deserved disability compensation. The multiple chemical sensitivity syndrome is described as an acquired disorder characterized by recurrent symptoms referred to multiple organ systems usually occurring following exposure to many unrelated chemical compounds at doses or concentrations usually below detectable levels. No accepted physiological, immunological or biochemical test can be shown to correlate with the symptoms. Advocates of the syndrome proposed that there is an alteration of the immune system resulting in an exquisite sensitivity to many different chemical compounds. Others pooh pooh the theory as bunk and that the syndrome is really a manifestation of a psychosomatic illness.

Ignoring this discussion to etiology or existence of the syndrome, the reviewing board had been told by the allergist that xylene was the culprit in causing her disability. Therefore the reviewers sought documented evidence.

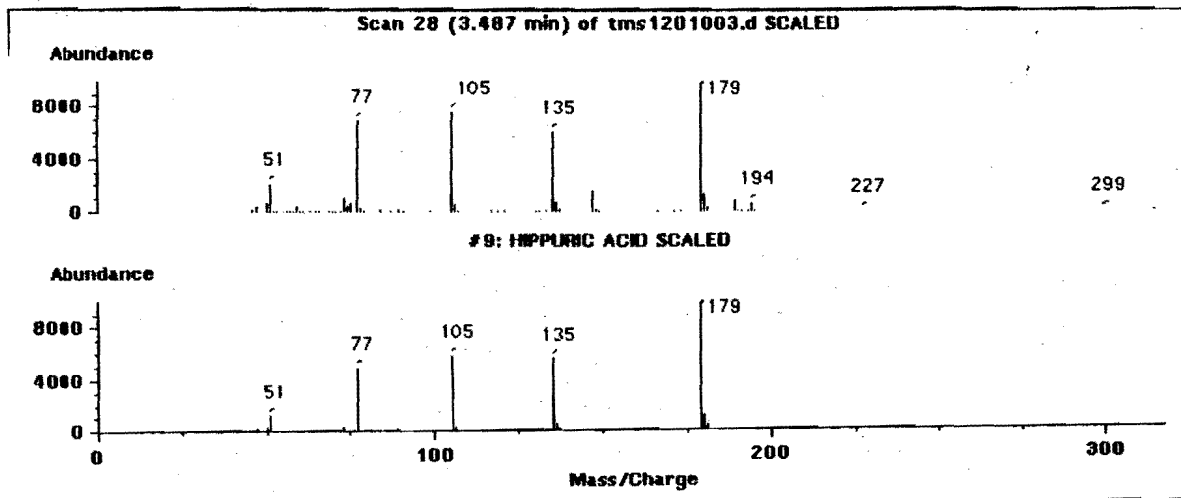
We made the basic decision that a blood source would probably be negative. A head space analysis of blood spiked at an approximate 1  $\mu$ g/ml gave a reasonable response. The patient's blood was negative.

Xylene is metabolized to methyl hippuric acid and excreted in urine. Unfortunately we could not find a source of methyl hippuric acid but easily located hippuric acid; urine normally contains hippuric acid secondary to metabolism of benzene rings. Acidified urine was extracted with a C-18 reverse phase SPE column. The dried extract reconstituted in ethyl acetate was injected on a 30 meter DB-5 capillary column starting at 120°C and ramping to 295°C @ 20°C/min. Detection was full scan MS using the HP 5970. We postulated that the EI spectrum should contain the 179, 135, 105 and 77 ions due to the step wise loss of carboxyl, methylamine and carbonyl groups respectively. An early significant peak eluting approximately @ 3.0 minutes containing the 179 ion also showed -luckily- abundant presence of the expected ions with the 179 as both the molecular and base peak. The ratio of those ions to the base 179 ion were 0.70, 0.77 and 0.17 for the 77, 105 and 135 ions respectively. Later this spectrum matched the spectra generated from hippuric acid purchased from Sigma Chemical. A TMS derivative produced the expected spectra with the 105 ion as the base peak. Still we were no closer to the methyl hippuric metabolite.

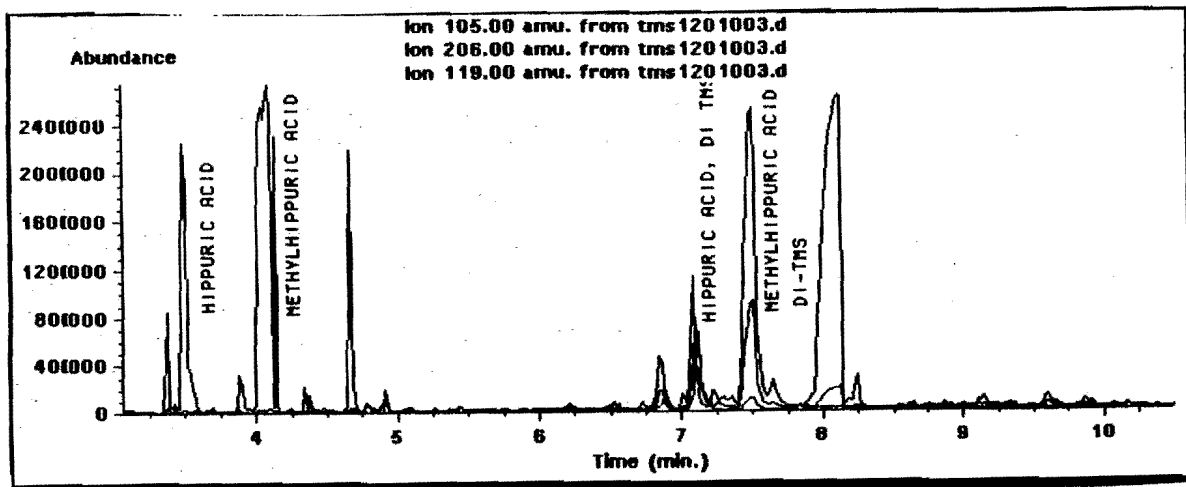
But there was a potential local biological source. Histology technicians in the pathology section are routinely exposed to xylene which is used during tissue processing for slide preparation. Yes, the histology work areas are properly vented and hooded. Urine from two volunteers showed quite large peaks with a retention time one minute after the hippuric acid and having the expected ions + 14 compared to the hippuric acid. Again TMS derivatives gave added proof. We believe that the technical grade xylene used in histology contains a mixture of the ortho, para and meta isomers. The TMS derivative of methyl hippuric acid had a base peak ion of 119. A 91 peak representing the tropylium ion gave further proof to identification.

The suspect patient urine contained the hippuric acid but no methyl hippuric. A quantitative analysis was not performed. We do not know the disposition of the lady's claim for disability.

Submitted by: Thorne J. Butler M.D., Gary Branum, Ph.D.  
Associated Pathologists Labs. Las Vegas, NV

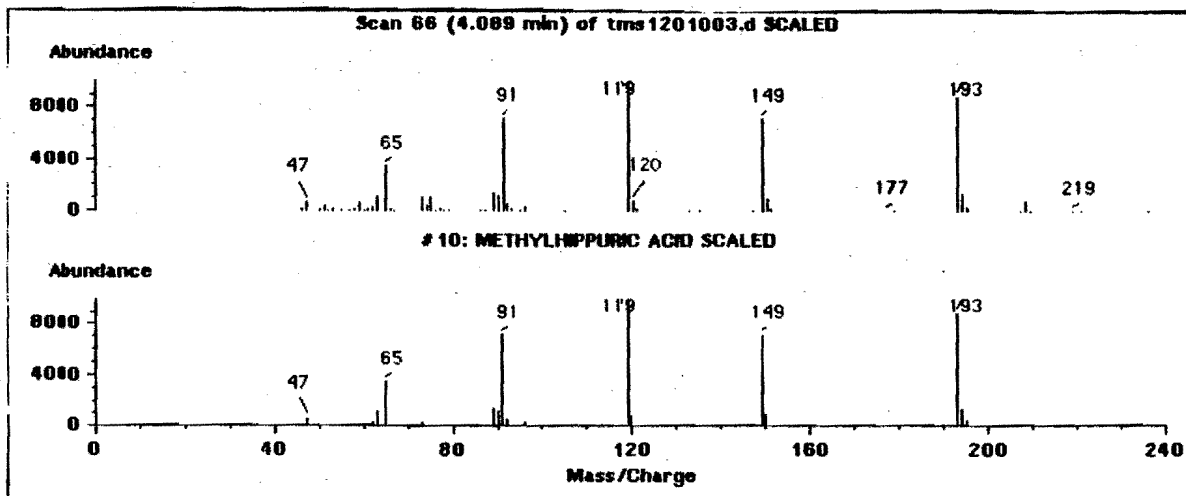


CHROMATOGRAM  
FOR  
HIPPURIC AND METHYL HIPPURIC ACIDS



Urine from histotech. Note incomplete TMS derivative formation. This TIC from SIM of several ions.

SPECTRUM METHYL HIPPURIC ACID



# JOURNAL CLUB

Submitted by: H. Chip Walls, Toxicology Lab, Rm 706, 600 South State St., Syracuse, NY 13202 (315-435-3802)

is the intent of this on-going feature to call attention to unusual or highly interesting articles, not a systematic review of selected journals such as available through other recognized sources. Citations 1-133 appeared in earlier issues of ToxTalk. You are encouraged to send contributions for this column to ToxTalk. Be sure to include proper citation or source address/telephone number.

134. SAMPLE PREPARATION FOR BIOMEDICAL ANALYSIS. R. McDowall; J Chrom 492:3-58, 1989. (This extensive 1989 review covers a number of topics including protein precipitation techniques to liq-liq and solid-liq extraction problems.)

135. IDENTIFICATION AND DIFFERENTIATION OF BARBITURATES, OTHER SEDATIVE HYPNOTICS AND THEIR METABOLITES IN URINE INTEGRATED IN A GENERAL SCREENING PROCEDURE USING COMPUTERIZED GAS CHROMATOGRAPHY-MASS SPECTROMETRY. H. Mauer; J Chrom 530:307-326, 1990.

136. THE EFFECTS OF FLUOXETINE IN THE OVERDOSE PATIENT. D. Borys et al; J Tox and Cl Tox 28(3):331-340, 1990. (A review of clinical toxicology of 127 overdose cases.)

137. EFFECTS OF SINGLE DOSES OF ALPRAZOLAM AND DIAZEPAM, ALONE AND IN COMBINATION WITH ETHANOL, ON PSYCHOMOTOR AND COGNITIVE PERFORMANCE AND ON AUTONOMIC NERVOUS SYSTEM REACTIVITY IN HEALTHY VOLUNTEERS. M. Annoila et al; Euro J of Cl Pharmacology 39:21-28, 1990.

138. REPEATED DOSE EFFECTS OF LORMETAZEPAM AND FLURAZEPAM UPON DRIVING PERFORMANCE. K. Brookhuis et al; Euro J of Cl Pharmacology 39:83-87, 1990.

139. NEW, POTENT COCAINE ANALOGS: LIGAND BINDING AND TRANSPORT STUDIES IN RAT STRIATUM. J. W. Joja et al; Euro J of Pharmacol 184:329-332, 1990.

140. COCAINE-BASE SMOKING IN RHESUS MONKEYS: REINFORCING AND PSYCHOLOGICAL EFFECTS. M. E. Carroll et al; Psychopharmacol 102:443-450, 1990.

141. COCAINE ABUSE AND ITS TREATMENT. W. C. Hall et al; Pharmacotherapy 10(1), 1990. An excellent review of the pharmacological and clinical effects of coke providing insight into its abuse and treatment.

142. COCAINE RELATED MEDICAL PROBLEMS: CONSECUTIVE SERIES OF 233 PATIENTS. S. L. Brody et al; Amer J of Med 88, 1990.

143. PHARMACOLOGY AND THERAPEUTIC APPLICATIONS OF COCAINE. J. A. Fleming et al; Anesthesiology 73:518-531, 1990. A review article with 161 references.

144. COCAINE SMOKERS EXCRETE A PYROLYSIS PRODUCT, ANHYDOECGONINE METHYL ESTER. Letter to the Editor. J Tox and Clin Tox 28(1):121-125, 1990. Is there really a marker in the urine of "crack" smokers?

145. SEVERE ALCOHOL INTOXICATION: A STUDY OF 204 CONSECUTIVE PATIENTS. G. E. Minion et al; J Tox and Clin Tox 27(6): 375-384, 1989.

146. BACKTRACKING BOOZE WITH BAYES - THE RETROSPECTIVE INTERPRETATION OF BLOOD ALCOHOL DATA. P. R. Jackson et al; Br J Clin Pharm 31:55-63, 1991. This is a must read article!!! "Our results show that in the absence of continuing absorption, reasonably robust estimates of BAC at preceding times can be made. However, when absorption continues after drinking, especially when at a slow rate, backtracking calculations may be markedly INACCURATE."

147. PHYSIOLOGICAL VARIATIONS IN BLOOD ETHANOL MEASUREMENTS DURING THE POST ABSORPTIVE STATE. A. W. Jones; JFSS 30(5):273-283, 1990.

148. VARIATIONS IN ABUNDANCE OF THE MOLECULAR ION OF THE DERIVITIZED COCAINE METABOLITE BENZOYLECGONINE. G. Bodor et al; Clin Chem 36(5):742-747, 1990.

149. DRUG PERFORMANCE SENSITIVITY: A PILOT STUDY. H. Moskowitz and D. Chen; J Cl Pharm 10(4), 1990.

150. TREATMENT OF ETHYLENE GLYCOL POISONING WITH INTRAVENOUS 4-METHYLPYRAZOLE. F. J. Baud et al; New Eng J Med 319(2):97-100, 1990.

151. REPRODUCIBILITY OF INDIVIDUAL RATES OF ETHANOL METABOLISM IN FASTING SUBJECTS. G. Passananti et al; Clin Pharmacol Ther, 47(3), 1990.

152. FAST RELIABLE ASSAY FOR MORPHINE AND ITS METABOLITES USING HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY AND NATIVE FLUORESCENCE DETECTION. R. F. Venn and A. Michalkeiwica; J Chrom 525:379-388, 1990.

153. CARBAMAZEPINE OVERDOSE: A PROSPECTIVE STUDY OF SERUM LEVELS AND TOXICITY. H. A. Spiller et al; J Tox and Clin Tox 28(4):445-458, 1990.

REGISTER FOR THE SOFT/CSFS MEETING EARLY TO ENSURE MATERIALS - NEW REGISTRATION FORM WITH U.S. FUNDS AVAILABLE

# DIRECTORY UPDATE

Congratulations to the following who have qualified for SOFT membership:

FULL MEMBERSHIP: Raymond Kelly, Diane Mammoliti, and Angela Springfield. ASSOCIATE MEMBERSHIP: C. Susan Brown  
\* \* \* \* \*

## ELMER GORDON OPEN FORUM

### AN OPPORTUNITY FOR INFORMAL DIALOGUE

ATTENTION NIDA INSPECTORS: The NLCP will be holding an inspectors reunion tentatively scheduled for Wednesday evening, Sept. 25th, during the SOFT meeting in Montreal. You will receive further instructions from NIDA.

ATTENTION CAP-FUDT INSPECTORS: Don't forget to return the RSVP card Thorne Butler is sending out for the Luncheon meeting in Montreal, Thursday, September 26th.

Congratulations, Dr. Charles L. Winek, on your recent election as president of the Academy of Toxicological Sciences.

DON'T FORGET TO MAIL YOUR FORM FOR A FREE SOFT BUTTON for SOFT members/applicants who register for Montreal  
\* \* \* \* \*

## CAREER OPPORTUNITIES

FORENSIC TOXICOLOGIST: Supervise, perform, interpret and defend toxicological analyses; some overnight statewide travel. ABFT Diplomate (or eligible) preferred. \$35,977 - \$54,930, location - Roanoke, VA. Application deadline 8/30/91. For further information and required state application form No. 10-012, telephone 804-786-3910 or 703-857-7192.

ASSISTANT STATE TOXICOLOGIST: Minimum bachelor's degree with considerable current experience in a tox lab; graduate degree may be considered part of required experience. Contact: Search Committee, P.O. Box 5195 University Station, Fargo, ND 58105-5195. Deadline: 8/31/91 or until filled.

MANAGER and SCIENTIST positions in environmental field. Contact Gayle, Personnel Dept., Life Systems, Cleveland, OH 216-464-3291.  
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## PROFESSIONAL CALENDAR

CALIFORNIA ASSOCIATION OF TOXICOLOGISTS quarterly meetings and workshops. For information contact Susan Knight (800-854-0277) or Thomas Sneath (805) 322-4250.

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\* S.O.F.T. 1991 ANNUAL MEETING: Sept. 23-27, 1991 - Montreal, Canada \*  
\* \* \* \* \*  
\* Joint meeting with the Canadian Society of Forensic Sciences at the \*  
\* Grand Hotel. Further information in this issue of ToxTalk. SOFT \*  
\* liaison: D. William Robinson, B.S., Centre of Forensic Sciences,\*  
\* 25 Grosvenor Street, Toronto, CANADA M7A 2G8 (Tel: 416-965-9507) \*  
\*\*\*\*\*

Future SOFT meeting sites: 1992 - Connecticut (N. Reading) 1993 - SOFT/CAT Phoenix (V. Watts)

NORTHEASTERN ASSOCIATION OF FORENSIC SCIENTISTS meeting: October 18 & 19, 1991, Melville, NY (Long Island). Workshops include DNA, Stress Debriefing, and arson-related topics. Contact Peter Pizzola 914-377-7756.

Spring 1992 2-1/2 day FORENSIC TOXICOLOGY SEMINAR sponsored by the Armed Forces Institute of Pathology and American Registry of Pathology. For information, contact Barry Levine 202-576-2910

ToxTalk is mailed quarterly to members of the Society of Forensic Toxicologists, Inc. For membership information contact: Alphonse Poklis, Ph.D., 1991 SOFT Secretary, Director, MCV Tox Lab, Box 597 - MCV Station, Richmond, VA 23298. Telephone: (804) 786-0272. Non-members may now receive ToxTalk for \$15 per calendar year. Mail a check payable to S.O.F.T. to ToxTalk at the address below.

All members and others are invited to contribute to ToxTalk. Submit all materials for publication consideration to: Joseph Monforte, Ph.D., ToxTalk, 1013 Three Mile Drive, Grosse Pointe Park, MI 48230-1412 (Telephone 313-884-4718). DEADLINES: Feb. 1, May 1, Aug. 1, and Nov. 1. NEXT DEADLINE - NOVEMBER 1, 1991