

1966

Police Science Technical Abstracts and Notes

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Recommended Citation

Police Science Technical Abstracts and Notes, 57 J. Crim. L. Criminology & Police Sci. 228 (1966)

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POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

Edited by

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Abstractors

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A "Model" Forgery—D. K. S. Puri, *International Criminal Police Review*, No. 185: 52-4 (Feb., 1965). A forgery is often characterized by slow, drawn movements, contains retouchings, pen pauses, pen-lifts, blunt terminals, right down slant, and concave alignment. (JDN)

The Means of Interrogation—G. H. Hatherill, *The Medico-Legal Journal*, 32 (4): 164-75, (1964). A general discussion with suggestions on the proper conduct of an interrogation. (JDN)

Procedures for the Systematic Identification of Peaks in Gas-Liquid Chromatographic Analysis—R. C. Crippen and C. E. Smith, *Journal of Gas Chromatography*, 3 (2): 37-42, (Feb., 1965). Where the analyst must judge the purity of a peak, humps, slope differences, top rounding, tailing, reaction to different columns, etc., may be used. To determine the exact identity of a compound, suitable derivatives may be prepared and chromatographed; auxiliary detection systems such as IR, UV, etc., may also be used. The isolated sample may be collected and examined. (JDN)

Criminal Road Conduct, Editorial—Anon, *The Medico-Legal Journal*, 33 (1): 1, (1965). Those persons committing serious traffic offences need to be given greater attention. Research indicates that a substantial number, 21%, of motoring offenders

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have criminal records for non-motoring crimes. Hazardous driving may be performed by an unusually anti-social group. It is suggested that judges examine non-motoring criminal records at the time of sentencing. (JDN)

A Scientific Look at Typewriter Ribbon Inks—Anon. *FBI Law Enforcement Bulletin*, 34 (6): 12-3, (June, 1965). Thin layer chromatography is recommended for analysis and identification of typewriter ribbon inks. By means of a suitable combination of solvents, ink can be removed from a small portion of the document and transferred to a spot on the chromatography plate. A fine sable brush is used. A second method uses Whatman filter paper moistened with extracting solvents, held against the document for 1½ minutes in a hydraulic press. Sections are cut from the filter paper, extracted, and the solution evaporated to near dryness. The sample is then transferred to the plate and developed. 25% differentiation is reported. (JDN)

Contrasting Defects of Forged and Genuine Signatures—Ordway Hilton, *Fingerprint and Identification Magazine*, 46 (4): 3-6, 11-14 (October, 1964). The author points out that defects of themselves do not necessarily indicate forgery. Genuine signatures may exhibit occasional imperfections. A continuum of reworkings, patching, imperfections is a stronger indication of forgery than one or two patchings. In genuine signatures, the corrections are made with an air of carelessness. (JDN)

Impression of Emotion in Script (Zum Ausdruck der Erregung in der Schrift)—A. Legriin, *Kriminalistik*, 19 (5): 255-6 (May, 1965). Although the

examiner could not determine the cause of agitated emotion, he shows the changes in writing that occurs when the writer is emotionally upset. (JDN)

Frankfort Child Murder (Der Frankfurter Mädchenmord)—H. Michalke, *Kriminalistik*, 19 (7): 359-63 (July, 1965). The murder investigation of a seven year old girl is criticized. Errors due to false reports, lack of suspicion are discussed. (JDN)

The Police Crime Laboratory as an Investigative Aid—James W. Osterburg, *Law and Order*, 13 (10): 64-67 (October, 1965). A discussion of the role of the crime laboratory subdividing it into six categories and briefly treating each one. 1. Link the crime scene or victim to the criminal. 2. Establish an element of the crime. 3. Corroborate or disprove an alibi. 4. Induce an admission or a confession. 5. Exonerate the innocent. 6. Provide expert testimony in court. (JDC)

Photography, Shortest Distance Between Two Points, Crime Scene to Prison—Inspector Percy R. Sellas, *Law and Order*, 13 (12): 50-56 (December, 1965). Criminal photography program as used in the San Bernardino County, California Sheriff's Office. Also discusses some types of cases in which photography is being used and evaluates certain equipment which should be of interest to other offices contemplating using movie equipment in criminal investigations. (JDC)

The Role of the Pathologist in Evaluating Potentially Toxic Substances and Untoward Conditions—W. Antopol, C. Chryssanthou, and Sheldon Gottlieb, *Journal of Forensic Sciences*, 10 (4): 385-406 (October, 1965). The fundamental role of the pathologist in the study of potentially toxic substances is presented. Instances are described in which the pathologic results pinpointed organs where unexpected derangements of great significance were present. Anatomic observations which may serve to anticipate toxic effects and provide new avenues for investigating potentially toxic substances are discussed. Consideration is given to the effects of dysbarism, a subject that has attained added importance because of the expanding use of hyperbaric oxygen and expanding interest in aerospace. A plan is proposed for establishing a major toxicity testing agency. This organization would serve also as a central repository for all information dealing with toxicity studies (WEK)

Drugs and Disease—A Pathologist's Viewpoint—J. T. Francisco, *Journal of Forensic Sciences*, 10 (4): 407-14 (October, 1965). Drugs are a definite blessing to American medicine. Without them people would not enjoy the longevity of a comfortable life. The nemesis of disease is a danger that must be accepted. This danger, in one form or another, exists with every drug. It is incumbent upon the manufacturer, the physician, and the public to be informed of reasonable dangers. It is ultimately the responsibility of the physician to balance the good with the evil and make an informed choice. It is further mandatory that the forensic scientist be ever aware that the cure for today's disease may be the cause of tomorrow's death. (WEK)

Invitation to Homicide—Louis H. Gold, *Journal of Forensic Sciences*, 10 (4): 415-21 (October, 1965). A case history of a man who murdered his wife believes that his wife actually wanted him to kill her and used him as a means to commit suicide. The author recognizes the possibility that this is a rationalization on the part of the murderer, but certain aspects of the case history would indicate that the wife was suffering from a guilt complex and did desire punishment. It deals solely with an individual case; no amplification of the general theory relative to suicide by murder. (WEK)

The Trial of a Document Case—Paul A. Osborn, *Journal of Forensic Sciences*, 10 (4): 422-32 (October, 1965). A resume of the usual court procedures on the part of an expert witness and suggests how he might better cope with the expected and unexpected events of a courtroom trial. A prepared list of questions and answers is invaluable. On direct testimony the document examiner's testimony should be convincing and given in language understandable to the audience. Mentions the value of demonstrative evidence, particularly photographs, and suggests methods of displaying photographic evidence and the use of nonphotographic demonstrative evidence. A document examiner under cross examination, above all else, must be equally controlled, directly responsive, and as natural as he was under direct examination. (WEK)

Examination of a Document Case—Howard C. Doulder, *Journal of Forensic Sciences*, 10 (4): 433-40 (October, 1965). A discussion of elementary

methods and procedures, as well as some unusual techniques on the subject. It goes from the basic to a detailed discussion of certain aspects of identification and appears to be a casual article, which contains very little of value. (WEK)

Admissibility of Standard Writings—Clarence E. Bohn, *Journal of Forensic Sciences*, 10 (4): 441-45 (October, 1965). While the attorney handling the case is concerned primarily with the admissibility of standard writings, the standards which will be introduced also are a matter of vital concern to the document examiner. Obviously, if some of the standard writings on which the document examiner bases his conclusion cannot be introduced, then the document examiner may not be able to provide convincing testimony or his testimony may be weakened. The United States Congress on February 26, 1913, in C79, Stat 683, enacted the following provision relating to comparisons of handwriting: "In any proceeding before a court or judicial officer of the United States where the genuineness of the handwriting of any person may be involved, any admitted or proved handwriting of such person shall be competent evidence as a basis for comparison by witnesses, or by the jury, court, or officer conducting such proceeding, to prove or disprove such genuineness." The following are classes of standard writings which are admissible for comparison purposes: Standard Writings Witnessed, Standard Writings Admitted, Records Maintained in Regular Course of Business as Standard Writings, Government Documents as Standard Writings, Ancient Writings, Other Writings as Standards, Familiarity Sometimes Establishes Standard Writing, Opinion Evidence, Genuineness of Standard Decided by Court. (WEK)

Ideas on Report Writing in Questioned Document Cases—W. Graydon Gallagher, *Journal of Forensic Sciences*, 10 (4): 446-54 (October, 1965). The determination of the manner in which the report is written is based primarily on the nature of the case, the problem or problems involved, and on the person receiving the report. The good report is a professional paper in appearance, construction, and content. It must be an honest appraisal of the facts developed in an examination that literally has taken the questioned exhibit apart piece by piece and assembled it step by step into a logical, complete picture dispelling the mystery surround-

ing the disputed paper or exhibit. Information that may aid the investigator or client should be commented on even though it may not be part of the original request for examination. The report should cover all items requested and, in addition, any other disclosure which might prove to be of value in establishing the genuineness or lack of genuineness of a disputed document or exhibit. Many times a detailed explanation of the procedures followed in the examination together with a description of the agreement or disagreement found and, in some instances, copies of photographs would be beneficial to the investigator or client. (WEK)

A Practical Method for Detecting ABO Agglutinins and Agglutinogens in Dried Bloodstains—H. J. Funk and W. Towstiak, *Journal of Forensic Sciences*, 10 (4): 455-55 (October, 1965). The ABO blood groups can be established in less than two hours, given a bloodstain of an average-sized drop of blood. The absorption technique of this method also is applicable for detection of agglutinogens in stains of other body fluids and secretions. Lysing of the test erythrocytes is reduced to a minimum by the use of bovine albumin substrate. Residual A, B, and H activity in the material to be tested does not vitiate the results unless present in high concentrations. (WEK)

Mainliners and Blue Velvet—John F. Burton, Edward S. Zawadzki, Herbert R. Wetherell, and Thomas W. Moy, *Journal of Forensic Sciences*, 10 (4): 466-72 (October, 1965). Sudden death among narcotic addicts is increasing, especially among "mainliners." The absence of a known previous illness in a young person in good health, dead of massive pulmonary edema, is highly suggestive of the "mainline" habit being one of the possible causes. Examples are cited and discussed in which "blue velvet" was the agent used. Death is due to acute cor pulmonale and massive pulmonary edema following repeated injections. These findings may be usually confirmed by microscopic examination of the lungs. The toxicological examination may be negative. (WEK)

A Rapid Screening Technique for the Identification of Organic Phosphate Insecticides in Gastric Lavage Fluid or Dermal Residues—Arthur J. Fisk, G. Richard Czerwinski, and John H. Kenhart, *Journal of Forensic Sciences*, 10 (4): 473-9

(October, 1965). A method has been presented for the rapid ultraviolet spectrophotometric identification of organic phosphate insecticides from contaminated skin areas and gastric lavage fluids. Rapid qualitative screening of samples is accomplished by the use of n-heptane as a single solvent for both the extraction and ultraviolet scan. The entire procedure can be performed within as little as five minutes. (WEK)

A Note on the Estimation and Disappearance of Alcohol in Blood, Breath, and Urine from Obese and Diabetic Patients—B. B. Coldwell, *Journal of Forensic Sciences*, 10 (4): 480-9 (October, 1965). Alveolar breaths from 13 fasting obese and uncontrolled (i.e., by drugs) diabetic patients were negative when tested on the Breathalyzer. The maximum error obtained with Smith's desiccation method was 13 mg.% (w/v) on blood and 11.0 mg.% (w/v) on urine. No relationship was found between "apparent" alcohol values and actual acetone concentrations. The metabolism of alcohol by one obese, mild alcoholic male patient and by one obese, mild diabetic female patient appeared similar to that of healthy persons, as measured by rates of absorption and elimination. The use of a 70% aqueous alcohol solution as a skin disinfectant caused errors as high as 63 mg.% in the estimation of blood alcohol. (WEK)

The Evidential Value of Dust—J. L. P. Wyndham, *Medicine, Science and the Law*, 5 (4): 201-203 (October, 1965). Small discussion of the use of dust on clothes and bodies to learn the occupation and residence of a person. (GDM)

Case Note—Contraceptive Sheath Lubricant—S. S. Kind and C. G. Broster, *Journal of the Forensic Science Society*, 5 (2): 115 (April, 1965). A case in which the lubricant from a condom used during an act of incest was identified from the vaginal smear by means of infrared spectrophotometry. (GDM)

Attenuated Total Reflection (ATR) Infrared Spectra—S. Denton, *Journal of the Forensic Science Society*, 5 (2): 112-114 (April, 1965). Two cases are mentioned in which the ATR spectra of paint samples were of forensic value. (GDM)

Identification of Paints by Pyrolysis-Gas Chromatography—N. C. Jain, C. R. Fontan, and P. L. Kirk, *Journal of the Forensic Science Society*, 5 (2):

102-109 (April, 1965). The authors discuss a method for the identification of paints using pyrolysis-gas chromatography. The column used was 6.5 ft. glass packed with 9.1% diisododecylphthalate on 70-80 mesh, DMCS treated Chromosorb G. Of the 34 paint samples examined, only two showed the same pattern. (GDM)

Therapeutic Poisoning—William A. R. Thomson, *Medicine, Science and the Law*, 5 (4): 210-217 (October, 1965). Adverse reactions to prescribed pharmaceuticals may result in unexpected deaths. An example is the fact that penicillin has been found in cows milk at a level, which if drunk by a person allergic to it, might cause death. Other adverse reactions pointed out by the author include damage to the central nervous system, ulcers, impotency, and a host of other dangerous and sometimes deadly conditions. (GDM)

Some Applications of Accelerated Thin Layer Chromatography in Toxicology—L. K. Turner, *Journal of the Forensic Science Society*, 5 (2): 94-96 (April, 1965). An accelerated method of thin layer chromatography using silica-gel G / Celite 545 1:1 with a 13% Plaster of Paris concentration as binder. This method has reduced the time required for a 12cm rise up to one third in several of the systems which the author used compared to normal silica-gel layers. (GDM)

Norbormide—A Rattus Specific Toxic Agent—R. U. Russel, *Journal of the Forensic Science Society*, 5 (2): 80-83 (April, 1965). Norbormide was given to several groups of mammals in varying dosages. These groups included primates, domestic birds, undesirable mammals, and domestic mammals. All showed no toxic effects. However, at dosages of 0.5 to 1.0%, norbormide is toxic to all members of the genus *Rattus*. (GDM)

The Determination of Water and Ethanol by Gas Chromatography—William T. Casazza and Robert J. Steltenkamp, *Journal of Gas Chromatography*, 3 (8): 253-255 (August, 1965). The problem of water tailing with a thermal conductivity detector is eliminated using the author's method. They employ Teflon six powder as a stationary phase. The liquid phase is 20% Carbowax 20m. Using this method for the quantitative determination of water and ethanol, the average relative error for the water was 0.56% and for the ethanol 0.39%. Acetone is used for the internal

standard. Several other highly polar stationary phases are mentioned which also give effective results. (GDM)

Savaged to Death by Dogs—George T. F. Tong and T. C. Pang, *Medicine, Science and the Law*, 5 (3): 158–160 (July, 1965). Two cases of death resulting from attacks by dogs. Describes the characteristic marks which result from clawing and chewing. (GDM)

A Simple Pyrolyzer for Use with Gas Chromatography—C. B. Honaker and A. D. Horton, *Journal of Gas Chromatography*, 3 (11): 396–398 (November, 1965). A pyrolysis unit for the “do it yourselfer” or those with a limited budget is outlined. Total cost of the unit is less than \$100.00. Adaption is possible to any chromatograph and some of the disadvantages of other pyrolysis units on the market are eliminated through the type of design and construction used in this unit. (GDM)

Application of Pyrolysis and Programmed Temperature Gas Chromatography to the Analysis of Thermosetting Acrylic Coating Resins—G. G. Esposito and M. H. Swann, *Journal of Gas Chromatography*, 3 (8): 282–284 (August, 1965). A method for the identification of thermosetting automotive coatings is outlined. The method uses pyrolysis of the coatings and identification of the resulting monomers using both polar and nonpolar columns with the temperature being programmed. The depolymerization of the coatings generally results in 3 to 6 monomers, and these were then identified using the retention times relative to methyl methacrylate. (GDM)

Some Observations on Another Case of Insulin Poisoning, With Complications—D. E. Price, *Medicine, Science and the Law*, 5 (2): 101–109 (April, 1965). A case in which the victim incurred an overdose of insulin and a head injury. He also consumed some alcohol during the same period of time. Due to the similarity in cerebral disorder caused by all three, diagnosis was difficult and death resulted. (GDM)

The Gas Chromatographic Analysis of Sub-Microgram Quantities of Barbiturates Using a Flame Ionization Detector—LeRoy T. Braddock and Nancy Marec, *Journal of Gas Chromatography*, 3 (8): 274–277 (August, 1965). The differentiation of pentobarbital and thiopental in the 0.005 to

0.1 μg per μl range is the result of this work. Using a column consisting of 3.8% SE-30 on acid washed Chromosorb W and a flame detector, successful results have been obtained from organic extracts of gastric fluids, serum, muscle, and fat. (GDM)

Gas Chromatographic Analysis of the Volatile Oil from a Single Conifer Needle—E. von Rudloff, *Journal of Gas Chromatography*, 3 (11): 390–391 (November, 1965). A method of analyzing plant materials is discussed using pyrolysis techniques. Column used was 5% SE-30 on 60–80 mesh Chromosorb W. The article also mentions the analysis of small pieces of wood. This could have some value in criminalistics. (GDM)

Infrared Emission Spectra of Solid Surfaces—M. J. D. Low and H. Ingue, *Analytical Chemistry*, 36 (13): 2397–99 (December, 1964). This article describes a method of applying emission analysis in the examination of the surfaces of opaque bulk solids. The author says the method has potential application for the study of boundary lubrication, solid lubricants, solid-state reactions, and gas-solid interactions at the surfaces of wires, ribbons, metal single crystals and catalysts. (PJC)

The Behavior of Textile Fibers in Contact with the Glue of Adhesive Transparent Strips Used for Collecting Specimens—E. Martin, *International Criminal Police Review*, No. 188: 135–141 (May, 1965). This article describes a project testing the effects of glue on fiber color. The results of the project show that certain textile colors do change as a result of contact with glue on transparent tape. The tape used in conducting the tests was Cellux (made by Feldmuhly A. G. Company of Rorschach, Switzerland). (PJC)

Semi-Automatic Camera for Standardizing Photographs of Recovered Bullets and Cartridge Cases—R. Dolegeal and P. F. Ceccaldi, *International Criminal Police Review*, No. 190: 209–210 (August–September, 1965). This article describes a camera which can be used for bullets bearing ballistic marks and for cartridge cases whose seats bear hammer and chamber traces. It suggests the use of this camera universally so that photographs can be centralized and then distributed on an unlimited basis. (PJC)

The Electronic Fingerprinting Method—Yoshitaka Kimura, *International Criminal Police Review*, No.