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## Police Science Technical Abstracts and Notes

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# POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

Edited by  
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## Editorial Change

Joseph D. Nicol, who has served as Police Science Technical Abstracts and Notes Editor since 1946, has resigned as Editor of this section with the completion of volume 60 (1969). During these years Professor Nicol has developed the section from a few abstracts to its present wide coverage and has expanded the staff of abstractors. His diligent and willing work has been most appreciated. Fortunately Professor Nicol will continue as an Associate Editor for Police Science, assisting in the selection and editing of articles dealing with science and technology.

We are pleased to announce that Gary D. McAlvey, Superintendent, Illinois Bureau of Identification, Joliet, Illinois will assume the Editorship of the Technical Abstract Section with this issue. For the last several years Mr. McAlvey has been an active contributor to this section.—EDITOR.

**The Thermic Lance**—R. D. Astler, *The Police Journal*, 42(7): 286-296 (July 1969). The thermic lance (burning bar) has yet to meet its match with regard to security devices. Both legal and illegal uses for the lance are listed. Tips on identifying lance crime scenes are listed. (GDM)

**Training Senior Police Officers and Police Laboratory Personnel**—Jacques Mathyer, *International Criminal Police Review*, 229: 150 (June-July 1969). The author discusses current training available and offers several suggestions for improvement which may result in more criminalistic graduates. (GDM)

**Fingerprinting Mummified Bodies**—J. H. Dorrego, *International Criminal Police Review*, 228: 134-138 (May 1969). A method using clay and

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polyethylene results in excellent prints from mummified bodies with very little effort. (GDM)

**Palmprinting**—Herbert MacDonell, *Law and Order* 17(7): 42-46 (July 1969). A method is described which results in complete legible palm-prints. (GDM)

**Firearms Evidence and the Kennedy Assassination**—Stanton O. Berg, *Identification*, 51(1): 3-7 (July 1969). A discussion on several facets of the Kennedy assassination with special attention given to the firearms evidence developed by the commission. (GDM)

**Use of X-Ray and Other Techniques to Visualize and Reproduce Fingerprints from Living Human Skin**—Arthur L. Cunn, *Identification News*, 19(8): 4 (August 1969). A method for the development of latent fingerprints on human skin is presented. It was designed for use in sex crimes. Further research is needed and may prove this to be a valuable technique in this area. (GDM)

**Ear Identification: A Positive Means of Personal Identification**—Alfred V. Iaunarelli, *Identification News*, 19(8): 5-12 (August 1969). The author discusses his ear identification technique which was first used in 1964. Included are a sample ear

card and suggestions on cases where the method may be useful. (GDM)

**Voiceprint Identification: A Scientific and Legal Dilemma**—Juris Cederbaums, *Criminal Law Bulletin*, 5(7): 323-347 (July-August 1969). This discussion of those legal cases involving voiceprint identification also includes the areas of admissibility and scientific reliability in addition to other factors affecting its use as evidence in a court of law. (GDM)

**Bouncing Bullets**—*FBI Law Enforcement Bulletin*, 38(10): 2-6 (October 1969). The results of experimentation with different weapons and ricochet shots is presented including photographs of many different targets showing the many variables into which ricochet shots were fired. (GDM)

**Blood Groups and the Law**—Alistair R. Brownlie, *The Criminologist*, 4(13): 9-17 (August 1969). The author, an attorney, presents his views on the use of blood evidence in criminal cases. Also included is a discussion of English Law and blood groups. (GDM)

**Paper and Crime**—Julius Grant, *The Criminologist*, 4(13): 25-38 (August 1969). The importance of paper in forging cases is presented. A number of case histories are presented to assist the reader in understanding the topic under discussion. (GDM)

**Explosives and the Police Officer**—Joseph F. Stoeffel, *The Criminologist*, 4(13): 56-63 (August 1969). An excellent presentation of general information for the police officer or those not involved in the disarming of explosives. Covers most types of explosives generally encountered. (GDM)

**Forensic Aspects of Glass**—J. L. P. Windham, *The Criminologist*, 4(13): 64-73 (August 1969). From the history of glass making to a listing of those properties to be considered in a forensic examination, the author covers all facets of glass and its use as an item of evidence. (GDM)

**Forensic Ballistics**—Sydney Smith, *The Criminologist*, 4(13): 89-101 (August 1969). This historical article describes one of the first cases in which firearms identification was used. The work

done on this 1924 case is described in detail. (GDM)

**Toxicological Separations**—Fredrick C. Haer, *Current Laboratory Practice*, 1(5): 6-9 (September 1969). Procedures for the separation and identification of several drug groups are listed. Included are tables of  $R_f$  values and detection methods. (GDM)

**Infallible Fingerprints**—L. B. Taylor, *Law and Order*, 17(10): 74-82 (October 1969). Progress to date on the development of an opto-electric reader is detailed. Current plans call for an evaluation of a prototype by the FBI this fall to determine the feasibility of production and a nationwide system of scanners. (GDM)

**Comparison of Bullet Lead**—R. L. Brunelle and C. M. Hoffman, *Identification News*, 19(9): 5-6 (September 1969). The work done by the authors shows that a uniformity exists between all bullets in a box and lot to lot differences can be determined. Likewise, manufacturers can be determined by elemental analysis. Techniques used were Neutron Activation Analysis and Atomic Absorption. (GDM)

**Improved Technique in the Development and Lifting of Latent Fingerprints**—Gerald Hauggi and Harold Alfulitis, *Identification News*, 19(6): 5-11 (June 1969). A study by the authors has led to the use of red and white fingerprint powders exclusively. These powders stand up to weather and agitation and when lifted with Book Tape make a permanent latent lift. (GDM)

**Problems Taken Up by the Examination of Tears Produced in Textile Material, Especially in Clothing**—Lucian Ionescu, *Revue Internationale de Criminologie et de Police Technique*, 23(1): 49-59 (January-March 1969). The author discusses the nature of deterioration of the material considering the difference between a tear produced by an instrument or a separation resulting from usage of the fabric. He then goes on to discuss the possibility of aging a cut, and also the determination of the number of cuts present. The direction of the cuts and the force used in producing them is also considered. The concluding section of the article deals with the most difficult question—the determination of the instrument used. This is aided mainly by the form of the cuts in the ma-

terial for example, sections which are long and large and grow narrow in depth indicate sharp instruments which split, cleave, or rend; generally a hatchet. (SID)

**The Determination of Barbiturates in Blood and Urine by Gas-Liquid Chromatography with a Peak Shift for Qualitative Confirmation**—Kenneth D. Parker, James A. Wright, Anita F. Halpern, and Charles H. Hine, *Journal of the Forensic Science Society*, 8(2 & 3): 125-140 (October 1968). Describes two methods of gas chromatography used to determine barbiturates in blood and urine. The procedure used is presented and discussed in detail. (SID)

**The Bacterial Production of Ethyl Alcohol**—D. J. Blackmore, *Journal of the Forensic Science Society*, 8(2 & 3): 73-78 (October 1968). Discusses analytical and cultural methods for production of ethyl alcohol. The bacteria found at post-mortem is known to produce large amounts of ethyl alcohol from glucose, sucrose, mannite or lactose. (SID)

**Recent Advances in Ballistics Laboratory Methods**—George Price, *Journal of the Forensic Science Society*, 8(2 & 3): 83-90 (October 1968). Summarizes advances in basic techniques used in a ballistics laboratory including bullet comparison and the periphery camera, discharge residues, estimation of range, and evidence of recent discharge. (SID)

**Documents and their Examination**—R. M. Mitchell, *Journal of the Forensic Science Society*, 8(2 & 3): 99-106 (October 1968). A selection of the more interesting facets of document examination are illustrated through case examples. (SID)

**A Thin-layer Starch Gel Method for Enzyme Typing of Bloodstains**—B. G. D. Wraxall and B. J. Culliford, *Journal of the Forensic Science Society*, 8(2 & 3): 81-82 (October 1968). A method of phosphoglucomutase typing of bloodstains is done by electrophoresis. This is a routine method for enzyme type determination and is also used for adenylate kinase typing. (SID)

**Adenylate Kinase (AK) Types in Bloodstains**—Bryan J. Culliford and B. G. D. Wraxall, *Journal of the Forensic Society*, 8(2 & 3): 79-80 (October 1968). The author presents a method of typing

adenylate kinase types in bloodstains by an electrophoretic technique using histidine buffers. (SID)

**Quantitative Determination of Ethanol by Gas Liquid Chromatography after Collection from the Vapor Phase on Anhydrous Magnesium Perchlorate**—Alfred A. Biasotti and Lowell W. Bradford, *Journal of the Forensic Science Society*, 9(1 & 2): 65-74 (July 1969). Describes an analysis by a gas liquid chromatography technique utilizing a headspace sample and an internal standard to analyze quantitatively, small amounts of ethanol in the vapor phase which is collected on anhydrous magnesium perchlorate. Method, sample collection, and quantitative analysis are given in detail. (SID)

**Hemochromogen Crystal Formation with Minute Amounts of Blood**—L. B. Miller, *Journal of the Forensic Science Society*, 9(1 & 2): 84-86 (July 1969). The author presents a method by which hemochromogen crystals will form from a very small amount of blood such as the residual material from the precipitin test. In this case, the Takayama reagent was used due to its greater sensitivity than the Teichmann reagent. (SID)

**Preparation of Evidence in Illicit Amphetamine Manufacturing Prosecutions**—Cecil L. Hider, *Journal of the Forensic Science Society*, 9(1 & 2): 75-79 (July 1969). Discusses the technique used in the illicit manufacture of amphetamine. Eight of the most common methods encountered are explained by chemical reaction. (SID)

**Explosive Damage to the Head**—R. M. Mitchell and C. F. Tippet, *Journal of the Forensic Science Society*, 9(1 & 2): 26-27 (July 1969). Heads and shoulders of skinned sheep were used to carry out tests by exploding detonators in the mouth. Results are given as to the explosion of one or two detonators and noting the difference in resulting injury. (SID)

**The Role of Radiology in the Identification of Human Remains: Report of a Case**—Geoffrey T. Mann and Abdullah V. Fattah, *Journal of the Forensic Science Society*, 8(2 & 3): 67-68 (October 1968). The authors describe a case in which the sole means of identity of a deceased woman was a matching of ante-mortem and post-mortem x-rays. (SID)

**Estimation of the Time Since Death: A Survey of Practical Methods**—Bernard Knight, *Journal of the Forensic Science Society*, 8(2 & 3): 91-96 (October 1968). Presents a survey of methods which are available to help in the determination of time since death, emphasizing those to be used at the crime scene. An emphasis is placed on present inaccuracy. (SID)

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**The Preparation of the Defense**—Nicholas Fairbairn, *Journal of the Forensic Science Society*, 8(2 & 3): 111-115 (October 1968). Steps in preparation of the defense and also the problems encountered are discussed. The categories of defense, denial, justification, and excuse or insanity are defined at length. (SID)

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**The Evidential Value of the Comparison of Paint Flakes from Sources other than Vehicles**—C. F. Tippett, V. J. Emerson, M. J. Fereday, F. Lawton, A. Richardson, L. T. Jones, Miss S. M. Lambert, *Journal of the Forensic Science Society*, 8(2 & 3): 61-65 (October 1968). Summarizes the results of analyzing 2000 paint samples from sources other than vehicles. (SID)

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**Identification Notes on the Tropical Wood Rose**—Steven P. McJunkins, John I. Thornton, and Duayne J. Dillon, *Journal of the Forensic Science Society*, 8(2 & 3): 121-124 (October 1968). The authors present a botanical description of the plant *Argyrea Nervosa*, a tropical wood rose. Also included are data concerned with separation of alkaloids in the plant seeds by thin-layer chromatography. (SID)

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**Methamphetamine Poisoning**—Robert H. Cravey and Randall C. Baselt, *Journal of the Forensic Science Society*, 8(2 & 3): 118-120 (October 1968). A detailed description is given of methamphetamine poisoning including histology, chemical analysis and discussion. (SID)

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**Fingerprint Preservation on Motor Vehicles**—D. D. F. Hardinge, *Journal of the Forensic Science Society*, 8(2 & 3): 59-60 (October 1968). The author describes the use of a portable auxiliary steering wheel device which can be fitted to the steering wheel of a vehicle so that it can be driven without destroying possible fingerprint evidence on the wheel. (SID)

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**The Bartlett Problem**—T. W. S. Stevenson, M.D., F.R.C.P., *The Criminologist*, 4(12): 55-65 (May 1969). Gives a detailed description of a case of death by liquid chloroform and the court action involved. (SID)

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**Recovery of Drugs from Old Paper Chromatograms**—R. Bonnicksen and A. C. Maehly, *Journal of the Forensic Science Society*, 9(1 & 2): 23-25 (July 1969). A simple procedure is described for the storage of drugs extracted from biological material. The drugs are spotted on filter paper and can be extracted after several years without serious losses. (SID)

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**The Breaking of Emulsions in Toxicological Extractions**—H. M. Stevens, *Journal of the Forensic Science Society*, 8(2 & 3): 66 (October 1968). The author describes the use of a glass wool technique to separate the organic solvent phase and aqueous phase of an emulsion. (SID)

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**A Death Involving Phenazone and Chloral Hydrate**—C. R. Henwood, *Journal of the Forensic Science Society*, 9(1 & 2): 35-36 (July 1969). A summary is given of the visceral analysis from a death involving phenazone and chloral hydrate. Resulting tissue levels and points of practical interest are given. (SID)

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**An Improved Method of ABO and MN Grouping of Dried Bloodstains Using Cellulose Acetate Sheets**—H. D. Howard and P. D. Martin, *Journal of the Forensic Science Society*, 9(1 & 2): 28-30 (July 1969). Outlines a new reliable method of grouping dried bloodstains while keeping the number of manipulations at a minimum. The technique improves and combines the grouping techniques of Nickolls and Pereira and also Outteridge. (SID)

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**Density Distribution of Two Glass Populations**—M. D. G. Dobbs, *Journal of the Forensic Science Society*, 8(2 & 3): 71-72 (October 1968). Relates the procedure and conclusions drawn from a study of the density of glass. Significance of the results and possible future study is discussed. (SID)

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**The Investigating Officer**—F. E. Williamson, *Journal of the Forensic Science Society*, 8(2 & 3): 97-98 (October 1968). Summarizes the responsi-

bility of the investigating officer while emphasizing the cooperative network which must exist for proper and thorough investigation. (SID)

The Comparison of Lubricating Greases Using Infrared Spectroscopy—V. Cleverley, *Journal of the Forensic Science Society*, 8(2 & 3): 69-70 (October 1968). Discusses the results obtained when using infrared spectroscopy as a tool for the matching of grease samples. The results showed a different spectrum for each of the 20 grease samples. (SID)

Poison Extraction as Related to Cellular Ultrastructure—Brian Parker, *Journal of the Forensic Science Society*, 8(2 & 3): 141-146 (October 1968). Examines current knowledge of cellular ultrastructure for information regarding possible and probable locales of organic poisons in living organisms. A concentration of such poisons has been suggested to exist in the endoplasmic reticulum. (SID)

The Examination of Tyres Involved in Accidents—R. J. Grogan, *Journal of the Forensic Science Society*, 9(1 & 2): 13-22 (July 1969). Describes examination techniques for tires, wheels, and tubes. Ten common tire failures encountered in accidents are explained. (SID)

Construction of a Low-Cost Infrared Viewer—John L. Yee and Byron C. Mobris, *Journal of the Forensic Science Society*, 9(1 & 2): 80-81 (July 1969). Gives details on the parts used to construct an infrared viewer since the uses and applications of such a viewer are obvious but the cost of the instrument did not justify its occasional use. (SID)

The Scene of the Crime—E. Hargreaves, *Journal of the Forensic Science Society*, 8(2 & 3): 107-110 (October 1968). Covers evidence found at the crime scene relating it to further investigation. Includes a discussion on the sequence used at the scene in order that one branch of investigation does not inhibit another. (SID)

Restoration of Obliterated Handwriting—L. B. Miller, *Journal of the Forensic Science Society*, 9(1 & 2): 82-83 (July 1969). Presents a technique whereby original handwriting can be restored on a document which has been obliterated by overwriting. A pin-prick technique is used to discern the original writing from the overwriting. In order to use this technique, however, the colors of the over-

writing and the original writing must be discernible from each other. (SID)

Disclosure of Stamping Marks Which Are Obliterated—Jacques Baechtiger and Jacques Mathyer, *Revue Internationale de Criminologie et de Police Technique*, 23(2): 147-154 (April-June 1969). The authors present a summary of techniques used to recover serial numbers and other marks which are obliterated on both metal and non-metallic substances. (SID)

Assay of Amphetamine in Formulations with Thyroid, Phenobarbital, Atropine, and Aloin—Robert W. McCullough, *Journal of A.O.A.C.*, 52(3): 507-511 (May 1969). A method employing distillation, extraction, and ultraviolet absorbance measurement is described for the determination of amphetamine in samples with thyroid, phenobarbital, atropine and aloin. (PJC)

Assay for Heroin in Illicit Preparations Using Partition Chromatography—George R. Nakamura and Herman J. Meuron, *Analytical Chemistry*, 41(8): 1124-1126 (July 1969). An ion pair extraction procedure using a Celite column system quantitatively separates heroin from diluents and impurities found in illicit preparations. After elution of the heroin from the column the quantitative determination is made by U.V. (PJC)

Simultaneous Determination of Lower Alcohols, Acetone, and Acetaldehyde in Blood by Gas Chromatography—R. N. Baker, A. L. Alenty, and J. F. Zach, Jr., *Journal of Chromatographic Science*, 7: 312-314 (May 1969). A G.C. method for the quantitative determination of ethanol in blood samples is described. The use of removable glass inlets at the injection port eliminates the necessity of precipitating the blood proteins prior to injection. In this procedure described 2-7 microliters of whole blood were injected directly into the gas chromatograph. (PJC)

Gas Chromatographic Method for Determination of Diphenylhydantoin Blood Level—Khalid Sabih and Khawla Sabih, *Analytical Chemistry*, 41(11): 1452-1454 (September 1969). In the method for determination of diphenylhydantoin described in this article, diphenylhydantoin is extracted from acidified plasma with chloroform and chromatographed. (PJC)

**Analysis of Human Hair by Spark Source Mass Spectrometry**—J. P. Yurachek, G. G. Clemena, and W. W. Harrison, *Analytical Chemistry*, 41(12): 1666–1668 (October 1969). The results of a study of human hair by spark source mass spectrometry are presented. Sample preparation, instrument parameters, and comparison of several hair samples are discussed. (PJC)

**X-Ray Emission Analysis of Paints by Thin Film Method**—J. D. McGinness, R. W. Scott, J. S. Mortensen, *Analytical Chemistry*, 41(13): 1858–1861 (November 1969). The results of a study of several techniques for solving the matrix problem in quantitative x-ray emission analysis of paints are presented. The procedure used involves diluting the liquid paint in an internally standardized varnish matrix and then analyzing the sample in the form of a dried thin film for several pigment elements in this single sample preparation. (PJC)

**The Scope of Blood Grouping in the Elucidation of Problems of Paternity**—Barbara E. Dodd, *Medicine, Science, and the Law*, 9(1): 56–60 (1969). The systems used in blood grouping are described; the mathematical probability concerning the inheritance of these factors and the reliability of blood grouping in paternity cases are discussed. (GHK)

**Blood Tests in the Establishment of Paternity**—V. Tunkel, *Medicine, Science, and the Law*, 9(1): 53–56 (1969). Discusses the courts' jurisdictions concerning blood tests and the degree of certainty required by the courts in paternity cases. (GHK)

**Alcohol and Driving**—John A. G. Clarke, *Medicine, Science, and the Law*, 9(1): 64–66 (1969). The author advises obtaining medical opinion in cases of suspect intoxication prior to obtaining a specimen from the suspect for alcohol analysis. He argues that there is no urgency in obtaining a specimen and supports his contention by graphically illustrating the absorption and elimination of alcohol in the body. (GHK)

**The Need for a Convergence of Effort in Modern Forensic Science**—Robert C. Sullivan and Kevin P. O'Brien, *Police*, 13(5): 11–12 (May–June 1969). It is suggested that forensic scientists try to arrange a consortium among universities to combine the expertise of forensic scientists with the uni-

versities' scientists and, therefore, attain a higher degree of efficiency and sophistication. (MJK)

**The Scene Plan**—John M. Schernhorst, *Police*, 13(5): 42–51 (May–June 1969). The Verostat was found to be a most accurate instrument for the reproduction of crime scenes. Other uses for the instrument such as forensic medicine are discussed. (MJK)

**Gas Chromatographic Identification of the TMS Derivatives of Non-Volatile Phenolic Acids**—Frank D. Dallos, Kenneth G. Koepl, *Journal of Chromatographic Science*, 7(9): 565–568 (September 1969). Non-volatile phenolic acids are extracted from beer with diethyl ether and quantitatively measured by gas chromatography after conversion to volatile derivatives. Identification was accomplished by use of infrared techniques. The article stated there did not appear to be great quantitative variation of the non-volatile phenolic acids in beer nor did the concentrations render any flavor potential. (JRM)

**Gas Chromatographic Separation of Nitrogen, Oxygen, Argon, Carbon Monoxide, Carbon Dioxide, Hydrogen Sulfide, Carbonyl Sulfide, and Sulfur Dioxide**—E. H. Obermiller, G. O. Charlier, *Journal of Chromatographic Science*, 7(9): 580 (September 1969). The authors list improvements made on previously described procedures (*J. Gas Chromatography*, 6, 446 (1968)) by using a helium carrier gas with an added amount of sulfur dioxide and also by reducing column diameter. As a result, chromatograms have improved peak shape at reduced time of analysis. (JRM)

**Application of Microscopy to the Analysis of Composite Materials**—C. E. Gracias, J. A. O'Dell, *The Microscope*, 17(3): 161–167 (July 1969). Techniques for the examination of coated abrasives using microscopy and photomicrography are discussed. Background in abrasives along with some color pictures are also presented. (JRM)

**Light Filters in Visual Microscopy**—J. G. Delly, *The Microscope*, 17(3): 193–200 (July 1969). A general discussion of light filters is presented. Such specific topics as daylight filters, neutral density, contrast and resolution, sodium light dispersion staining, glare reduction, infrared photomicrography, phase contrast, and fluorescence microscopy are covered. (JRM)

**A Simple Relationship between Characteristic Dimension and the Relative Surface of Elemental Particles**—M. Pecar, *The Microscope*, 17(3): 201-204 (July 1969). Particle size and surface area are discussed from a mathematical viewpoint. (JRM)

**Mounting Media for Particle Identification**—G. Delly, *The Microscope*, 17(3): 205-212 (July 1969). A discussion of practical mounting media for microscopy is presented. Topics covered are a detailed procedure for mounting with aroclor 5442, other aroclor medias (1260, 5460, 1254), and other high or low, resinous non-resinous media, along with aqueous and miscellaneous mounting media. (JRM)

**The Separation of C<sub>1</sub> to C<sub>5</sub> Alcohols by Capillary Column Gas Chromatography**—R. D. Schwartz and R. G. Matthews, *Journal of Chromatographic Science*, 7(10): 593-595 (October 1969). A method is given for separation of the 16 C<sub>1</sub> to C<sub>5</sub> normal and iso-alcohols using a mixture of two polar surfactants within a special grade of stainless steel rendering a complete analysis within 45 minutes. (JRM)

**Determination of Aldosterone and Tetrahydroaldosterone in Blood by Electron Capture Gas Chromatography**—Louis F. Fabre, Jr., David C. Fenimore, Robert W. Farmer, H. Winston Davis, and Gordon Farrell, *Journal of Chromatographic Science*, 7(10): 632-638 (October 1969). A gas chromatography method for the detection of aldosterone and tetrahydrosterone using 10 ml. of venous blood and requiring less than two days time. (JRM)

**Alcohol Involvement**—E. O. F. Campbell, *Royal Canadian Mounted Police Gazette*, 31(6): 7-15 (June 1969). Article covers the Canadian aspect of the role of alcohol in fatal motor vehicle accidents from a statistical approach. (JRM)

**Shot Range Determination with the Help of Elements Derived from the Jacketed Bullet**—Dr. Karl Sellier, *Archiv fur Kriminologie*, (141): 73-75, (March-April 1968). Trace elements such as antimony and lead may be useful aids in the determination of shooting ranges. The density of these elements decreases with increasing range. Graphs illustrating this point are included. (SMK)

**Extraction, Spectrophotometric Identification, and Quantitative Demonstration of Strychnine in Poisoning Cases**—Dr. Eva Grusz-Harday, *Archiv fur Kriminologie*, (141): 93-98 (March-April 1968). Four cases, a suicide, attempted murder, and two cases of infanticide, involving strychnine poisoning are discussed. The identification and quantitative determination of the strychnine was accomplished by ultraviolet spectrophotometry using parts of the stomach and intestine. (SMK)

**Extension of the Shot Range Determination through the Concentration of the Smoke Elements**—S. K. Sellier, *Archiv fur Kriminologie*, (141): 34-39 (January-February 1968). Determination of shooting distances using the antimony lines in the spectrographic method is limited to 40-60 cm (depending on the type of weapon and ammunition) since only about 0.3 cm<sup>2</sup> of sample will fit into the carbon electrodes. A technique for concentration is described using samples—half circles of about 19 cm<sup>2</sup>—which are incinerated in an electric oven under an air stream. The residue is then examined as in the usual technique. This method extends the measurable distance which a bullet has traveled up to approximately 170 cm. (SMK)

**Consideration of the Writer's Health in Identifying Signatures and Detecting Forgery**—Ordway Hilton, *Journal of Forensic Sciences*, 14(2): 157-166 (April 1969). Signatures executed during illness or advanced age may be very erratic and poorly written. The process of identifying the genuine and detecting the forged are more complicated than corresponding problems involving a well developed, fluently, and skillfully written signature. Solutions may require wide experience with different kinds of signatures and accurate knowledge of the physical condition of individuals as this relates to handwriting. Opinions at times must be qualified but in other instances can be stated with precision and accuracy. (WEK)

**Trauma and Cancer: A Survey of Recent Literature**—A. J. Chapman and George J. Race, *Journal of Forensic Sciences*, 14(2): 167-176 (April 1969). From the material reviewed the following general opinions appear warranted:

1. Single sharp or blunt physical injury in rare instances plays a definite etiologic role in the production of a malignant neoplasm. Rarity cannot be equated with nonexistence.

2. Physical trauma most likely acts as a cocarcinogen.

3. Trauma may initiate, in some instances, a short or extended series of events which ultimately produces a malignant neoplasm. It is thought that in such cases the "bridging symptoms" of Stoll and Crissey are quite apropos. Repetitive trauma may itself be regarded as a series of events leading to malignancy.

4. At present there is no absolute proof either to admit or to deny trauma as an etiologic agent of cancer. It is fully acknowledged that a neoplasm having in reality no relation to trauma could fulfill any and all of the criteria which would place it in the category of trauma-induced cancer. (WEK)

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**Sperm Survival and Prostatic Acid Phosphatase Activity in Victims of Sexual Assault**—Joseph C. Rupp, *Journal of Forensic Sciences*, 14(2): 177-183 (April 1969). In a series of eighty-four cases of sexual assault it was found that within eight hours there is an equal chance of finding motile or non-motile sperm in vaginal aspirates. Nonmotile sperm were found for periods of up to fourteen hours. Positive prostatic acid phosphatase reactions were found for periods in excess of twenty-four hours. Samples of vaginal fluid kept under nonsterile conditions retained enzymatic activity and well preserved sperm for prolonged periods of time. (WEK)

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**The Use of Spectrophotofluorometry in the Analysis of Drugs in Biological Materials**—J. Arthur F. de Silva and Lucius D'Arconte, *Journal of Forensic Sciences*, 14(2): 184-204 (April 1969). The use of spectrophotofluorometry in the analysis of some drugs in biological specimens obtained from cases of overdose is discussed. A differential extraction procedure for the separation of drugs into classes of compounds depending on their acidic, neutral, or basic properties and thin layer chromatographic systems for the separation of closely related chemical compounds is presented. (WEK)

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**A Modification of Kerley's Method for the Microscopic Determination of Age in Human Bone**—J. Ahlqvist and O. Damsten, *Journal of Forensic Sciences*, 14(2): 205-212 (April 1969). A simplified modification of the method of Kerley for the estimation of age from transverse sections of long bones is presented. It has been applied to femurs of deceased of known age. Although the results reported by Kerley, especially when his age estimate profile chart was used, are more accurate

than reported here, it seems worthwhile to carry out further trials with modification since it avoids some of the difficulties of the original method and thus is thought to decrease the possibility of personal bias. (WEK)

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**Therapeutic Serum Concentrations of Meperidine (Demerol R)**—Fred W. Fochtman and Charles L. Winek, *Journal of Forensic Sciences*, 14(2): 213-218 (April 1969). Serum meperidine concentrations were determined in patients receiving 100 mg intramuscular injections of the drug. Determinations at one and two hours after injection did not differ significantly, and the mean values found were 67.4 and 65  $\mu\text{g}/100\text{ ml}$ , respectively. (WEK)

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**The Gas Chromatographic Determination of Selected Sedatives (Ethchlorvynol, Paraldehyde, Meprobamate, and Carisoprodol) in Biological Material**—Robert Maes, Nicholas Hodnett, Halle Landesman, Gerald Kananen, Bryan Finkle, and Irving Sunshine, *Journal of Forensic Sciences*, 14(2): 235-254 (April 1969). A gas chromatographic method for the determination of meprobamate and carisoprodol has been described and applied to specimens from victims of poisoning. The incidence of nonfatal meprobamate intoxication was significantly less frequent than that of barbiturate intoxications. If the meprobamate concentration in the blood exceeds 5 mg/100 ml, coma may be expected. Fatalities due to meprobamate and carisoprodol in biological specimens obtained following deaths due to each of these drugs is reported. (WEK)

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**Rh and Kell Typings of Dried Bloodstains**—R. Douglas and J. M. Staveley, *Journal of Forensic Sciences*, 14(2): 255-262 (April 1969). A method for the Rh and Kell blood grouping of dried bloodstains has been developed. The technique involves an alcohol elution from sensitized stained cloths with subsequent estimation of antibody using a Technicon Autoanalyzer. A total of 140 dried blood stains have been successfully typed for the hr' (c) and Rh<sub>0</sub> (D) antigens, and 32 stains typed for the K<sub>1</sub> antigen. (WEK)

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**Evaluation of Effective Shot Dispersion in Buckshot Patterns**—B. N. Mattoo and B. S. Nabar, *Journal of Forensic Sciences*, 14(2): 255-262 (April 1969). A simple but precise method for numerical evaluation of shot dispersion in buckshot

patterns is described which enables one to estimate the firing distance with greater precision and reliability. The concept of "effective dispersion" of shot patterns is introduced. (WEK)

**A Method for Extraction and Chromatographic Isolation, Purification, and Identification of Tetrahydrocannabinol and Other Compounds from Marijuana**—R. F. Turk, R. B. Forney, L. J. King, and S. Ramachandran, *Journal of Forensic Sciences*, 14(3): 385-388. (July 1969). Crude marijuana is extracted with petroleum ether (65-75°). Extraneous plant material is eliminated by chilling the dried residue in acetone and dry ice followed by filtration and evaporation. The residue is placed on a Silica Gel-AgNO<sub>3</sub>CaSO<sub>4</sub> (3:1:0.5) column and eluted with benzene. Components of fractions collected from the column are provisionally identified by TLC (Silica Gel G (Merck)-AgNO<sub>3</sub> (3:1)) of aliquots of the fractions developed with benzene. Fractions containing THC are pooled and final purification is accomplished by preparative TLC with the same solid support and solvent. The separated components on an isolated strip of the plate are located with diazo blue B salt spray and the corresponding remaining areas on the plate are eluted with petroleum ether. Purity and identification is further established by TLC, UV, and IR scanning and by gas chromatography of the materials isolated. (WEK)

**The Analytical Use of Density Gradient Separations**—Walter C. McCrone and Warner Hudson, *Journal of Forensic Sciences*, 14(3): 370-384. (July 1969). A density gradient separation procedure for milligram samples has been derived. Individual fractions of known density can be isolated for microscopical identification. The entire procedure is rapid and can be used for the separation and identification of the components of complex mixtures or for comparisons of samples. (WEK)

**Vestibular and Audiological Aspects of Whiplash Injury and Head Trauma**—J. U. Togliola, P. E. Rosenberg, and M. L. Ronis, *Journal of Forensic Sciences*, 14(2): 219-226. (April 1969). Complaints concerning faulty inner ear function are common following whiplash or other head injuries. Such complaints include vertigo, "unsteadiness," tinnitus, hearing loss, and difficulty in understanding speech. Patients presenting such complaints should be assumed to have pathology of the vestibular

or auditory systems until this has been shown not to be so. Detailed examinations of the auditory and vestibular system are mandatory. Such examinations can only be performed utilizing modern techniques and apparatus. Electronystagmography and detailed audiological studies are imperative for patients complaining of these symptoms. Well over two-thirds of the patients examined in this study demonstrated specific physiologic bases for their complaints. Most of the pathology observed was subtle and not immediately observable through cursory examination. Once determined, however, the pathology can almost always explain the symptoms, and appropriate medical or surgical management may be instituted. There is a dangerous tendency to attribute complaints of dizziness, tinnitus, etc., to psychological and emotional etiologies rather than to physiologic causes. We believe that the vast majority of patients exhibiting such symptoms have a valid physical cause for their complaints. (WEK)

**Congenital Absence of Adult Male External Genitalia Associated with Sudden Death: Case Report**—Earl F. Rose, *Journal of Forensic Sciences*, 14(2): 227-234. (April 1969). A report of the medicolegal investigation and findings on an adult male with congenital absence of the penis and scrotum and internal congenital anomalies has been given. Inasmuch as this is a rare condition and one that could be confusing, the pertinent embryology and a differential diagnosis are presented. The immediate cause of death was intracranial hemorrhage consequent to hypertension. The hypertension is believed to have been secondary to severe ascending pyelonephritis which in turn was attributed to the developmental genitourinary defects. (WEK)

**A Study of the Influence of Alcohol on Handwriting**—Ordway Hilton, *Journal of Forensic Sciences*, 14(3): 309-316. (July 1969). Writing specimens of twenty subjects who consumed unmeasured quantities of alcohol during an hour of drinking were studied. The samples consisted of writing before any consumption of alcohol and at hourly intervals after drinking. Blood alcohol concentrations were recorded at the time of each writing. Not all writing deteriorated significantly as blood alcohol concentrations increased. With some subjects writing changes did occur and included larger, more spread out writing, less legible and precise forms and poorer alignment. No change was