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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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A New Method for the Detection of Bloody Latent Finger Prints—H. Nariyuki, K. Veda and T. Sasaki, *Fingerprint and Identification Magazine*, 52(12): 3-5 (June 1971). The authors describe a method for bloody prints utilizing a benzidine and collodion solution which allows the developed prints to be lifted with tape. The method may be used on a variety of textures and surfaces. (GDM)

The Legal Dilemma of Voiceprint Identification—Clarence H. A. Romig and James J. Hennessy, *The Police Chief*, 38(6): 44-48 (June 1971). The constitutional and legal aspects of voiceprints are presented. Included are techniques utilized in voiceprint identification and constitutional areas and recent cases which related to this identification procedure. (GDM)

The Case of the Fallible Gloves—G. P. Peterson and G. V. Riggle, *The Police Chief*, 38(6): 62 (June 1971). Vinyl gloves are not sufficient to protect latent fingerprint evidence from the technicians' fingerprints. The authors accidentally discovered that they were leaving their own fingerprints on evidence even though using vinyl gloves. Research shows a triple thickness of gloves is needed to eliminate latent fingerprint transfer. (GDM).

Ninhydrin Combats Bank Frauds—Olle Rispling, *International Criminal Police Review*, 245: 30-40 (February 1971). The methodology of the ninhydrin technique is discussed in considerable detail. In addition, several cases are also presented. (GDM).

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Absorption and Elution on Plates—G. R. Nayari, N. Fakkari and H. Ghassemi, *International Criminal Police Review*, 245: 51-52 (February 1971). Described is a method for the blood group determination of hair. The procedure utilizes two pieces of hair 3-4 cm. long and the absorption elution is carried out on a cellulose acetate plate. (GDM)

A GLC Based System for the Detection of Poisons, Drugs, and Human Metabolites Encountered in Forensic Toxicology—Bryan S. Finkle, Emilie J. Cherry, Dennis M. Taylor, *Journal of Chromatographic Science*, 9: 393-419 (July 1971). A GLC method using four columns and three liquid phases, complemented by a direct solvent extraction scheme designed to detect common poisons, drugs, and human metabolites to a sensitivity limit of two $\mu\text{g/ml}$ in blood, urine and tissue specimens, is presented and discussed. Relative retention data for almost 600 different substances are tabulated in two indices, one providing reference gas chromatographic information for any of the substances prior to an analysis and the other providing tentative identification of unknown G. C. peaks. (PJC)

Microdetermination of Lead in Blood by Flameless Atomic Absorption Spectrometry—Jae Y. Hwang, Paul A. Ullucki, Stanley B. Smith, Jr., and Arthur L. Malenfant, *Analytical Chemistry*, 43(10): 1319-1321 (August 1971). Before analysis the blood sample is treated by chelation and extraction of lead with ammonium 1-pyrrolidinedithioate and methyl isobutyl ketone, respectively. A portion of the extract is placed on the tantalum strip for AA analysis. The AA technique employs electrothermal heating of the sample in an enclosed cell to produce atomic lead vapor. The atomization takes place in an argon atmos-

phere that increases the atomic population of the analyte and retards the oxidation of the tantalum strip that serves as the sample boat. The method is effective with very small blood samples, of the order of 100 ul. (PJC).

Recording of Phone Conversations for Identification Purposes—H. Goydke, J. H. Schroeder, *Kriminalistik*, 25(6): 281–288 (June 1971). The authors describe in detail the selection and operation of recording equipment. No attempt has been made in the interpretation of the audio spectra. (ER)

Electron Microscopic Investigation of Human Skin Affected by High Tension Electricity—E. Boehm, *Arch. f. Kriminologie*, 147(3, 4): 79–91 (March–April 1971). The findings showed unusual variability of characteristic formations generally along the main fissure lines. In particular, blister-like elevations of the epiderm and mound or mushroom-like pimples were observed. Often skin rupture had occurred exposing the variously affected tissue below with molten and enclosed textile fibers. The variety of observations is illustrated by 15 photographs. (ER)

Electron Microscopic Examination and Identification of Paint Chips—H. Hantsch, A. Schoentag, *Arch. f. Kriminologie*, 147(3, 4): 92–119 (March–April 1971). Forty-seven photographs accompany the investigation of eleven paint specimens. (ER)

The Role of the Accident Investigator—G. M. Mackay, *The Forensic Science Society Journal*, 10(4): 245–253 (October 1970). The article outlines some of the forensic aspects of thorough examination of transport and particularly road traffic accidents from driver identification to estimations of speed in collisions. (TRD)

The Role of the Footmark Examiner—A. S. Fawcett, *The Forensic Science Society Journal*, 10(4): 227–244 (October 1970). The author describes the role of the footmark examiner with respect to the different kinds of footmarks examined and how they are preserved as photographs and casts. The value of footwear marks in court is also discussed. (TRD)

The Role of the Fingerprint Officer—C. Sams,

The Forensic Science Society Journal, 10(4): 219–225 (October 1970). The article begins with a short historical synopsis of the fingerprinting system and its development. The distortion of prints, the number of characteristics needed for court purposes, lifting prints, and determination of age of a print are some of the topics discussed. The article concludes with the mention of the relation between finger and palm prints and certain diseases. (TRD)

The Role of the Pathologist at the Scene of the Crime—Alan Usher, *The Forensic Science Society Journal*, 10(4): 213–218 (October 1970). The article discusses the role of the pathologist at the scenes of murder or suspected murder. The article is divided into three sections: the actions taken by the police prior to the pathologist's arrival, the pathologist's arrival and his equipment, and the aims of the pathologist's investigation. (TRD)

The Role of the Photographer—Harry Scott, *The Forensic Science Society Journal*, 10(4): 205–212 (October 1970). The purpose of the photographer at the crime scene is discussed with reference to the different types of scenes: murder, rape, breaking offenses, arson and fatal accidents. The author talks about the function of the photographer in court as both a prosecution and defense witness. Finally, the article discusses the present and future trends in crime scene photography. (TRD)

The Role of the Investigating Officer—J. G. Collinson, *The Forensic Science Society Journal*, 10(4): 199–203 (October 1970). The author discusses the detailed investigation of a murder with specific reference to all people involved, the organization of a room used exclusively for the purposes of the investigation, and the purpose and nature of inquiries likely to be made. The involvement of the pathologist and the forensic experts is also discussed. The author stresses the importance of the investigating officer as the coordinator and director of all the activities concerned. (TRD)

An Interesting Case of Arson—Dr. Abdel Aziz Hamdy, *International Criminal Police Review*, 240: 223–230 (August–September 1970). This article deals with a case of arson in which a fire was started in order to cover up another offense— theft. The article shows the excellent results that can be achieved by a close cooperation between a

Criminal Investigation Department and the officers investigating the case. (TRD)

International Burglars Convicted on Unusual Evidence (Article Two): Shoeprints—F. Hirschi, *International Criminal Police Review*, 240: 219–222 (August–September 1970). The article describes the identification of shoeprints by means of the grain and the creases in the shoe leather. (TRD)

The Role of Breech Scrape Marks in the Identification of Fired Cartridge Cases—B. N. Mattoo, *International Criminal Police Review*, 240: 217–218 (August–September 1970). The author reports on breech scrape marks on shells fired from shot-guns due to the primer cup in the shell head bulging into the breech cavity upon being fired. (TRD)

Matching of Fragments—Sia Ram Gupta, *International Criminal Police Review*, 239: 198–200 (June–July 1970). The author discusses the principles involved in the matching of fragments. He reviews the theory of probability, the separate probabilities of various factors involved in a match and, finally, cites actual cases. (TRD)

International Burglars Convicted on Unusual Evidence—Fritz Hirschi, *International Criminal Police Review*, 239: 184–193 (June–July 1970). The author discusses the identification of ear-prints. (TRD)

Explosive Compounds and Ballistic Powders—Dr. Eugenio La PAGESSE, *International Criminal Police Review*, 239: 176–183 (June–July 1970). The article is divided into four sections. The first section, ammunition and firing dynamics, discusses bullets, lead versus jacketed, and the three main types of powder for ammunition: black powder, smokeless powder, and fulminate charges. The second section reviews the decomposition of fulminate and propellant charges after firing. Section three compares the combustion residues from the propellant and fulminate charges. Finally, section four is a table of chemical tests on the combustion residues of gun powders and explosive compounds. (TRD)

A Fatal Case of Laburnum Seed Poisoning—H. G. H. Richards and A. Stephens, *Medicine,*

Science and the Law, 10(4): 260–265 (October 1970). The purpose of this paper was to place on record a fatal case of human cytosine poisoning in which the clinical history was singularly unhelpful in the diagnosis, but at necroscopy the tell tale pods were found and chemical confirmation with quantitation in the stomach contents and blood were determined. (SID)

Interaction of Alcohol with Sedatives and Tranquillizers—John W. Dundee and Martin Isaac, *Medicine, Science and the Law*, 10(4): 220–224 (October 1970). Following an acute lethal intramuscular injection of either HCN or KCN the cyanide radical can be readily detected in blood shortly after death. The levels of cyanide are higher in samples of anticoagulated whole blood than in serum. The times to death are shorter and the blood cyanide levels higher in animals killed by HCN. (SID)

The Lipski Case—*The Criminologist*, 6(20): 99–108 (Spring 1971). Relates the story of the murder of a woman by a dose of nitric and sulfuric acids in mixture. The defense gives details of the happening showing that the man who was found guilty of the charge is not really guilty at all in his opinion. (SID)

Drugs, Young People and New Legal Problems—T. H. Bewley, *The Criminologist*, 6(20): 59–74 (Spring 1971). Evaluates the number of users approximated per 100,000 people; also the Dangerous Drug Act and its effect. The Assessment of Value of Different Types of Treatment is also discussed as are several other subjects. (SID)

Liver and Blood Barbiturate Concentrations—Their Interpretation—H. A. Shapiro, *The Criminologist*, 6(20): 32–40 (Spring 1971). Stresses the correct interpretation to be obtained from the barbiturate concentration of liver and blood. Factors which effect the interpretation are mentioned. (SID)

A Problem in Diamonds—Robert Webster, *The Criminologist*, 6(20): 28–31 (Spring 1971). Relates the story of a gem dealer's suspicions of a friend and also of the endeavors and technical methods of the Hatton Garden Gem Testing Laboratory,

including the transparency of gemstones to x-rays. (SID)

Forensic Medicine in General Practice—Francis E. Camps, *The Criminologist*, 6(20): 23-27 (Spring 1971). Delves into cases of death such as murder and suicide and shows the importance of a thorough job by the examining physician so that, for example, a murder by strangulation will not be called a suicide because the ligature marks are overlooked. A few helpful suggestions are made for the doctor who will surely become involved in forensic medicine sometime in his career. (SID)

Identification by Sole Print—Chief Inspector N. Frankland, *The Police Journal*, 44(2): 133-137 (April-June 1971). Relates information on a case of 1970 in which customs officers find over 13 pounds of cannabis in the bulkhead lining of a ship cabin. On one of the packages was a sole print later identified as belonging to the steward. Thirty ridge characteristics were found to agree. (SID)

Forensic Optics—H. J. Walls, *The Criminologist*, 6(20): 41-58 (Spring 1971). The author discusses the classification of material by spectral regions beginning with low power microscopy and progressing to x-ray, photography, colorimetry, spectrophotometry, spectroscopy, x-ray fluorescence, and neutron activation analysis. A future outlook into the more extended use of techniques is also given. (SID)

Introduction to a Mass Murderer: Peter Manuel—Detective Chief Superintendent William Muncie, *The Police Journal*, 44(2): 99-110 (April-June 1971). Gives details of a spree of housebreakings leading to brutal attacks and mass homicide. Main facts are given regarding several cases while linking these cases with the suspect, Peter Manuel. (SID)

Forensic Pathologic Criteria for Radiation Death—Shields Warren, *Journal of Forensic Sciences*, 16-2: 137-143 (April 1971). The history of exposure, the objective findings of induced radioactivity in case of neutron exposure, of body fluid changes, and of acute and chronic tissue changes, sometimes with neoplasia as a late manifestation of preceding acute or chronic radiation, are presented. (WEK)

Rapid Detection of Firearms Discharge Residues by Atomic Absorption and Neutron Activation Analysis—S. S. Krishnan, K. A. Gillespie, and E. J. Anderson, *Journal of Forensic Sciences*, 16-2: 144-151 (April 1971). A rapid method of detection of firearm discharge residues on the hands of a person who has fired a gun has been described. The sample is taken by washing the hands with 1.0 molar nitric acid, with detection of lead by atomic absorption spectrophotometry and antimony by neutron activation analysis in the washings. The method is instrumental, and no chemical separations are necessary. The technique can be used by relatively inexperienced technical persons. (WEK)

Enhancement of Depressant Properties of Alcohol or Barbiturate in Combination with Aqueous Suspended Δ^9 Tetrahydrocannabinol in Rats—Richard N. Phillips, Daniel J. Brown, and Robert B. Forney, *Journal of Forensic Sciences*, 16(2): 152-161 (April 1971). A new method for administering Δ^9 tetrahydrocannabinol, a highly water-insoluble compound, in water suspension has been described. Data have been presented which indicate that the depressant effects of ethanol and Δ^9 -THC are greatly enhanced when administered together in laboratory rats. (WEK)

Checlass—A Classification System for Fraudulent Checks—E. H. W. Schroeder, *Journal of Forensic Sciences*, 16(2): 162-175 (April 1971). A system for classifying the writing and other characteristics of fraudulent checks is described. Checks are classified according to the sex of the writer, his handwriting characteristics, and the habitual format of his checks. The system uses twenty characteristics which may appear in one of two or more well-defined modes. Ten of these characteristics usually appear on all checks in persons not qualified as document examiners and checks may be classified at the rate of four per hour. A computer program has been set up for the system and tested at the Centre of Forensic Sciences. It enables an operator to retrieve checks on file which correspond to the questioned check in a sufficient number of characteristics. (WEK)

The Value of Gm Typing for Determining the Racial Origin of Blood Stains—M. Blanc and J. Ducos, *Journal of Forensic Sciences*, 16(2): 176-

182. It is suggested that tests for Gm antigens in dried blood stains should be made part of the routine practice in forensic medicine. The identification of Gm antigens is allegedly as reliable as that of many erythrocytic antigens, and the tests can be carried out on smaller stains. The tests increase the number of detectable characteristics and thus increase the precision of individual identification, and at the same time add a new dimension, namely, the prediction of the racial origin of the individual from whom a blood stain is derived. (WEK)

A Review of the Experiments Involving Voice-print Identification—James J. Hennessy, and Clarence H. A. Romig, *Journal of Forensic Sciences*, 16(2): 183–198 (April 1971). The authors neither deny nor confirm the validity of voice-print identification. (WEK)

Fatal Narcotism in Military Personnel—Col. Richard C. Froede, USAF and Cmdr. Charles J. Stahl, USN, *Journal of Forensic Sciences*, 16(2): 199–218 (April 1971). A series of 174 cases of fatal narcotism in military personnel, retrieved from the files of the AFIP, have been presented. The demographic characteristics, pathologic findings, and results of toxicologic studies were examined and discussed. Although this study does not provide a statistical evaluation of the incidence of drug abuse, addiction to narcotics, or fatal narcotism in military personnel, certain conclusions may be drawn. During the period 1918 to 1970, the majority of deaths related to narcotics found in the files of the AFIP have occurred in the Far East in non-white male military personnel less than 25 years of age in the three lowest pay grades. The majority of the deaths resulted from overdose of and/or hypersensitivity to the drug, rather than the medical complications of narcotic addiction. The results of the toxicologic studies do not provide the basis for estimation of minimal lethal concentrations. Based upon the historical data and demographic characteristics, it is believed that an increased number of deaths from narcotism in military personnel may be predicted following cessation of hostilities in the Far East and during the period of withdrawal of troops. (WEK)

Tattoos, Alcohol, and Violent Death—Susan P. Baker, Leon S. Robertson, and Werner U. Spitz, *Journal of Forensic Sciences*, 16(2): 219–225 (April

1971). Tattooed drivers fatally injured in crashes and tattooed homicide victims were more likely than their non-tattooed counterparts to have contributed to the events leading to their deaths. Alcohol was correlated with presence of tattoos among drivers, and was a major factor in both forms of violent death. (WEK)

Medical Malpractice—Judgments of the Danish Medico-Legal Council in Fatal Cases—Jørn Simonsen, *Journal of Forensic Sciences*, 16(2): 226–235 (April 1971). An advisory board of medical experts such as the Danish Medico-Legal Council has, of course, been criticized and accused of covering up for doctors rather than helping jurists in the administration of justice. The present material does not support this criticism and accusation. In 85 out of 117 cases (73%) the Medico-Legal Council found no occasion to blame the doctor for his behavior. In none of these cases were the doctors accused, probably because a trial would have led to acquittal, would only have caused unnecessary expenses for the plaintiff, and a waste of time for all parties in the case. In one of these cases, where no malpractice was found, compensation was voluntarily paid and in another the National Health Service on its own initiative reproved the hospital. The Medico-Legal Council in 31 cases found that negligence to a greater or less degree had occurred, but the prosecution in 16 of these cases (50%) nevertheless declined to prosecute, and in six cases (20%) the prosecution only requested the National Health Service to close the case with a reproof to the guilty doctor. In only nine cases (30%) were legal proceedings advanced against the doctor. These facts support the view that the allegation that “doctors always stick together” does not hold true in Denmark. The conclusion is therefore warranted that an independent council of medical experts to a high degree can provide valuable contributions to the administration of justice and that such a council is of equal value to the public and to the medical profession. (WEK)

An Epoxy Method of Embedding Hair for Histologic Sectioning—Stephen I. Rosen and Ellis R. Kerley. *Journal of Forensic Sciences*, 16(2): 236–240 (April 1971). An epoxy method for embedding hairs for histologic sectioning has been described. The advantages of this procedure for preparation of cross sections has been discussed. (WEK)