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POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

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Synthetic Drugs Used and Abused—*Chemical & Engineering News*, *48*(46): 26–29 (November 2, 1970). This article is the second in a series designed to educate and inform the scientific community. Detail of an informative scientific nature is presented. (GDM)

Hallucinogens and Narcotics Alarm Public—*Chemical & Engineering News*, *48*(47): 44–45 (November 9, 1970). The public hue and cry over the drug problem in the U. S. has resulted in many educational articles on the subject. The scientific community constitutes the audience toward which this article is directed. (GDM)

Pharmacology of Marijuana Remains Obscure—*Chemical & Engineering News*, *48*(45): 36–38 (October 26, 1970). The lack of definite knowledge regarding Cannabis pharmacology has resulted in numerous researchers devoting time and effort to this area. Mention is made of several projects currently under study. (GDM)

Legal Restrictions Hamper Drug Research—*Chemical & Engineering News*, *48*(48): 38–39 (November 16, 1970). The legal problems faced by non-law enforcement researchers in the areas of drugs and narcotics are outlined. A discussion of pending legislation is included. (GDM)

Characteristics of 200 Awkward Hand Signatures—Viola Stevens, *International Criminal Police Review*, (237): 130–137 (April 1970). The author writes of examinations of 200 signatures in which the author uses his awkward or non-preferred hand. These signatures were found to closely resemble those of the preferred hand with regard to style and format. (GDM)

The Assaying of Precious Metals and Control of Hallmarks—*G. M. Van Kaam, International Criminal Police Review*, (237): 122–129 (April 1970). Details of the touchstone method of assay are covered in considerable detail for various forms of precious metals. The author also includes information on forged hallmarks. (GDM)

Activation Analysis of Black Paint—C. Michael Hoffman, *Identification News*, *20*(10): 9 (October 1970). An NAA method is described which allows different brands of black paint to be distinguished from each other. Batch differences were detected in 70% of the research standards. (GDM)

New X-Ray Techniques for the Preservation of Criminal Evidence—Albert W. Gleason, *Fingerprint and Identification Magazine*, *52*(4): 3–7 (October 1970). The use of Grenz-rays in criminalistics is discussed along with techniques and methodology for various types of evidence application. (GDM)

Video Dragnet—Wilma Gottleib, *Photo Methods*

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for Industry, 13(11): 43–45 (November 1970). Describes a commercially available system which electronically creates composite photographs of unknown suspects from a variety of individual characteristics available. (GDM)

Safe Recognition—Arthur R. Paholke, *Security World, 7*(8): 83–84 (September 1970). The author describes a Safe Recognition Check Off Report Form. The form's purpose is to correlate information on safe burglaries among various agencies and to establish patterns and Modus Operandi. The form, provided with check-off squares, aids the investigator in identifying characteristics of a safe and how it was attacked. (TRE)

A Novel Application of FMIR—*Identification of Stamp Adhesives*—A. J. Barnes, *Instrument News, 2*(1): 1–3 (1970). Frustrated Multiple Internal Reflection was a technique employed to determine if gum arabic or polyvinyl alcohol was used as the adhesive on stamps. Because of the difficulty in securing high quality gum arabic, polyvinyl alcohol has been used as an adhesive since 1969. The FMIR accessory with a 45° KRS-5 crystal was the nondestructive technique used to solve a philatelic study of modern British stamp issues. (TRE)

The Influence of Putrefaction on the Determination of Barbiturates in Blood—Antony Coutselinis and Harris Kiaris, *Medicine, Science and the Law, 10*(1): 47–49 (January 1970). Gives results of an evaluation of the effect of putrefaction on barbiturate determination in blood. A discussion follows the results. (SID)

Chlorpromazine Levels in the Blood Following Largactil (Chlorpromazine Hydrochloride) Therapy and Poisoning—M. O. A. Malik, J. Martin and E. D. Carson, *Journal of Forensic Medicine, 17*(2): 58–64 (April–June 1970). Presents a case of fatal chlorpromazine poisoning in an adult male patient on prolonged Largactil (chlorpromazine hydrochloride) therapy in a mental hospital. It was shown that the high level of chlorpromazine detected in his blood at autopsy could not have been due to the continuous therapy. (SID)

Accidental Death During Unusual Sexual Perversion—A. Jay Chapman and Richard E. Matthews, *Journal of Forensic Medicine, 17*(2): 65–68 (April–June 1970). Relates the case report of the sexual perversion of a 30 year old white male which resulted in death. The article discusses various points in the case to support the accidental manner of death. (SID)

Detection of Antigens of the System ABO in Blood Stains by Means of Red Blood Corpuscles E-Li—Tadeusz Marcinkowski, *Journal of Forensic Medicine, 17*(2): 69–71 (April–June 1970). The author presents a method of grouping antigens of the ABO system with the use of formaldehyde treated erythrocytes. Further investigations are still being conducted. (SID)

Personal Identification by Means of Lip Prints—Kazus Suzuki and Yasuo Tsuchihashi, *Journal of Forensic Medicine, 17*(2): 52–57 (April–June 1970). Lip prints were collected from 280 Japanese individuals. In a prior investigation it was found that of 107 Japanese females, there was an individual specificity in the morphology of the lip grooves, that is, the lip groove pattern differs from one individual to another. The method of examination and recording technique are explained along with the results. A criminal identification case report involving two lip prints is also included. (SID)

The Killing Pencil—Jorgen Voigt, *Medicine, Science and the Law, 10*(1): 50 (January 1970). This article relates an unusual case involving an uncommon way of losing one's life in connection with a traffic accident. (SID)

Methods of Separation of Drugs from Biological Materials—A Quantitative Evaluation—S. K. Niyogi, *Journal of Forensic Medicine, 17*(2): 72–95 (April–June 1970). Reviews various isolation methods extensively including Tungstic Acid for isolating barbiturates, the precipitation method of trichloroacetic acid and ammonium sulphate for the extraction of alkaloids and the Stas-Otto process. The direct application of urine to a chromatographic or ion-exchange column has been found to be useful for isolation and subsequent estimation of some drugs. The technique also appears suitable and practicable for blood and liver extracts. Ptomaine as a possible interfering agent in putrified tissue is also discussed. (SID)

The Demonstrative Value of the Radiography of

Shoes in Cases of Electrocution—M. Kunnen, F. Thomas, and E. Van DeVelde, *Medicine, Science and the Law, 10*(1): 45–46 (January 1970). Describes a technique in radiography of shoes which marks an advance on the technique of Dr. Stefan Jellinek, father of electropathology (1931). Illustrative cases are given. (SID)

The Generalized Schwortzman Reaction as a Forensic Problem—J. Chr. Giertsen, *Medicine, Science and the Law, 10*(1): 42–44 (January 1970). Two cases of fatal bilateral adrenal haemorrhage due to a generalized Schwortzman reaction, complicating slight infection, are presented. It is demonstrated that the symptoms and signs of this generalized reaction may be mistaken for poisoning. (SID)

The Hormonal Treatment of Sexual Offenders—L. H. Field and Mark Williams, *Medicine, Science and the Law, 10*(1): 27–37 (January 1970). A two year follow-up after release of imprisoned sexual offenders treated with implants of female hormone indicated that the approach may be of value in those sexual offenders considered unsuitable for other methods of treatment. (SID)

A Fiber Rotating Device—F. T. Jones, *The Microscope, 18:* 275–278 (October 1970). Describes the operation of a fiber rotating device which holds a hair during microscopic examination and permits 360° rotation of the ends independently or together and longitudinal examination over a length of 4 cm. The hair can be examined dry or immersed in suitable refractive index liquid. (SID)

The Fluorescent Antibody Technique—Its Application to the Detection of Blood Group Antigens in Stains—S. S Kind and Rosalyn M. Cleevely, *Journal of Forensic Medicine, 17*(3): 121–129 (July–September 1970). Experimentally produced blood smears can be grouped by an indirect fluorescent antibody technique The same procedure cannot be applied satisfactorily to the detection of blood group substances in blood stains, hair or dandruff flakes, although good results have been obtained in the identification of A and B substances in saliva. The advantages of this technique over absorption elution are (a) the speed of the results and ease in reading, (b) no requirement for indicator cells and (c) subgroups may be determined by the varying levels of fluorescence. (SID)

The Training of Questioned Document Examiners—P. G. Baxter, *Medicine, Science, and the Law, 10*(2): 76–84 (April 1970). Reports on the conditions which exist in the training and qualification of questioned document examiners. The situation is discussed with the hope of correcting the unsatisfactory gap which exists in our technical education. Suggestions for supplemented training and a university course are presented and discussed. (SID)

The Serological Differentiation of Human Blood Stains from Those of Sub-Human Primates in Southern Africa Using the Anti-Globulin Inhibition Technique—B. G. Grobbelaar, D. Skinner, H. N. Vande, and G. Gertenbach, *Journal of Forensic Medicine, 17*(3): 112–120 (July–September 1970). Using appropriately standardized reagents, either heterologous anti-human globulin serum or baboon anti-human globulin serum, or both, it is possible to determine in exhibits submitted to forensic laboratories whether the stains are of human origin or not. In addition, the greater sensitivity of the antiglobulin inhibition test in comparison with the precipitin test, will permit a positive diagnosis of human blood to be made on minute stains. (SID)

Criminalistics of Traffic Accidents—Examination of Paints—Andre H. Munch and Jacques Mathyei, *Revue Internationale de Criminologie et de Police Technique, 24*(3): 215–224 (July–September 1970). This article is a condensation of methods already known for the examination of paint, rather than the presentation of a new method. The first part of the article reviews the type of evidence one can expect to encounter in a traffic accident or hit and run, the investigation of evidence, samples, and transportation to the laboratory. The second part of the article deals with the particular examination of paint including the non-destructive techniques of visible light, UV light, and infrared radiation. Also discussed are semidestructive techniques of density gradient and infrared and the destructive techniques of GC, emission spectroscopy, chemical analysis and spectrophotometry. It is realized that the conclusive value of a paint examination depends not only on the examinations conducted,

but also the investigation of the scene and the samples submitted. (SID)

The Use and Abuse of Documents—P. G. Baxter, *Medicine, Science and the Law*, *9*(1): 39–44 (January 1969). The article contains a survey of methods of examing questioned documents, emphasizing the importance of photography. The author details abuse, not only the type normally thought of, i.e. alterations by the unscrupulous to achieve their own purposes, but also careless handling of evidence by investigative officials. (MMS)

Alcohol and Driving—John A. G. Clarke, *Medicine, Science and the Law*, *9*(1): 64–66 (January 1969). The author stresses the need for medical and experimental evidence in determining intoxication and points out many errors possible when using only an observation technique. (MMS)

A Modern Offset Press in the Service of Cunning Criminals—H. Rupp, *Kriminalistik*, *24*(8): 384–388 (August 1970). A case report on the use of offset press for the falsification of documents and fabrication of counterfeit notes. (ER)

A Comparison of Marijuana with Narcotics and Other Intoxicating Agents—L. Dietze, *Kriminalistik*, *24*(8): 395–402 (August 1970). Various aspects of the usage of marijuana are discussed. In the summary the author advances a 14 point proposal to legalize the usage of marijuana. The article lists 80 references which unfortunately are printed in a different (coming) issue of the journal. (ER)

Investigations in Soil Comparison—H. J. Guthknecht, *Kriminalistik*, *24*(8): 407–411 (August 1970). The difficulties involved in meaningful soil comparison and techniques for markings and physical and chemical soil analysis are discussed. (ER)

Investigation of Population Genetics of the GM System—W. Gohler, *Arch. f. Kriminologie*, *146* (1, 2): 40–57 (July–August 1970). The investigation which was carried out in the Leipzig (Germany) area is published in two subsequent parts. The first part considers the frequencies of phenotypes together with Gm factors a, r, x, f and b. The second part deals with hereditary patterns of Gm factors. The results of the first part show that among 2087 healthy non-related adults, the following Gm frequencies were found. Gm(2) and Gm(x) were always found combined with Gm(a). The Gm(a + r − x +) phenotype was observed three times and Gm (f − b +) nine times (0.43%). In all other cases Gm(f) and Gm(b) reactions were concordant. Six alleles are assumed as genetical information of the factors and phenotypes observed. Their gene frequencies were worked out. Statistical comparison between expected and observed frequencies gave satisfactory results. Hereditary patterns of the Gm(a), (x), (f) and (b) factors were investigated on 143 families with 285 children. A hypothetical genetical control by four genes or gene complexes was developed, although the existence of additional gene entities could not be ruled out. A substantial number of families was also tested for Gm(r). The article contains some 80 references. (ER)

A Murder Attempt by Electrocution—F. Kosa, *Arch. f. Kriminologie*, *146*(1, 2): 33–39 (July–August 1970). While the described case could not result in electrocution due to technical ineptness, the author discusses various electropathological aspects and supplies useful references. (ER)

Determination of the Origin of Decomposed Bloodstains—M. S. Madiwale and H. S. Mahal, *Arch. f. Kriminologie*, *146*(1, 2): 18–25 (July–August 1970). There have been instances where partially decomposed animal blood stains had shown slightly positive precipitin test for human blood. The authors suggest that in doubtful cases immunodiffusion technique should be used. (ER)

Fluorometric Determination of Microgram Amounts of Meperidine—Leo A. Dal Cortivo, Mary M. De Mayo, Sidney B. Weinberg, *Analytical Chemistry*, *42*(8): 941–942 (July 1970). A characteristic fluorophore is produced when crystalline meperidine hydrochloride is incubated at elevated temperatures in a mixture of formaldehyde and concentrated sulfuric acid. This is the basis for the method of detecting and determining meperidine in biologic specimens described in this article. (PJC)

Gas Chromatographic Estimation of Occluded Solvents in Adhesive Tape by Periodic Introduc-

tion Method—Mikio Suzuki, *Analytical Chemistry*, *42*(14): 1705–1708 (December 1970). A direct G.C. method for estimating occluded solvents in coated polymeric materials is described. (PJC)

Determination of Medazepam (Nobrium), Diazepam (Valium) and their Major Biotransformation Products in Blood and Urine by Electron Capture Gas-Liquid Chromatography—J. Arthur F. de Silva and Carl V. Puglisi, *Analytical Chemistry*, *42*(14): 1725–1736 (December 1970). An electron capture G.C. assay method is described for the determination of medazepam and diazepam and their major metabolites in blood and urine with a sensitivity limit of 0.02 to 0.04 μg of compound/ml. It involves the extraction of the intact compounds into diethyl ether from blood buffered to pH 9.0 and from urine (following incubation at 37° for two hours at pH 5.3 with glucuronidase), made alkaline with NaOH. (PJC)

Infrared Method for Distinguishing Optical Isomers of Amphetamine—James A. Heagy, *Analytical Chemistry*, *42*(12): 1459 (October 1970). An infrared method for distinguishing d, dl, and l isomers of amphetamine by conversion of these isomers of amphetamines to the d-mandelate salt is described. (PJC)

High-Speed Ion Exchange Chromatography of Barbiturates, Diphenylhydantoin, and Their Hydroxylated Metabolites—M. W. Anders and Jennine P. Latorre, *Analytical Chemistry*, *42*(12): 1430–1432 (October 1970). This article describes high-speed ion exchange chromatography of barbiturates, diphenyhydantoin, and metabolites of these compounds. Both gradient and non-gradient-elution techniques are described. (PJC)

Identification of Barbiturates by Chemical Ionization Mass Spectrometry—H. M. Fales, G. W. A. Milne, T. Axenrod, *Analytical Chemistry*, *42*(12): 1432–1435 (October 1970). The advantages of methane chemical ionization mass spectrometry in the analysis of barbiturates in biological fluids are described. (PJC)

A Contribution to the Psychopathology of Shoplifting—Thomas J. Meyers, *Journal of Forensic Sciences*, *15*(3): 295–310 (July 1970). An analysis of behavioral details of ninety-five subjects involved in shoplifting. The significant features shown are (1) that the age range is spread over that of a life span, but with few subjects having ages of more than forty-five, (2) that there is a marked disturbance in the sexual lives of a majority of subjects, and (3) that the sensuous needs of all but two of the women and five of the men were not being met. The personality structure of the men in the series was schizoid or schizophrenic. (WEK)

A Study of Four Hundred and Thirty-five Court Referred Cases—Andrew L. Laczko, J. Frank James and Lacoe B. Alltop, *Journal of Forensic Sciences*, *15*(3): 311–323 (July 1970). An argument for refocusing attention on study of the accused. A profile of the individual most likely to be accused of criminal behavior and referred for psychiatric evaluation is male, single, has a sociopathic or other personality disturbance, has not completed military service, has not had previous mental hospitalization, has an I.Q. in the normal range, has no regular occupation, is most likely to be accused of larceny, and is most likely to be competent to stand trial. For the specific crime of murder, the individual most likely to be accused is female and is not likely to have had previous convictions, or a male who is married or widowed, a businessman or farmer without previous convictions. Additional correlations between the several factors examined and the type of crime are indicated but must have further study. In 1810, Franz Joseph Gall said "The measure of culpability and the measurement of punishment cannot be determined by a study of the illegal act, but only by a study of the individual committing it." (WEK)

Retention Indices for Compound Identification by Gas Chromatography—Leo Kazyak and Robert Permisohn, *Journal of Forensic Sciences*, *15*(3): 346–356 (July 1970). Operating parameters and column differences complicate standardization of gas chromatographic data based on retention time alone. Retention indices provide reference data independent of these influences so that standardization is possible. With the standard indices from three columns that have different characteristics of separability, significant improvement in identification of compounds of toxicological importance is attainable. (WEK)

A Comparative Analysis of Dichroic Filter Viewing, Reflected Infrared and Infrared Luminescence Applied to Ink Differentiation Problems—Ronald M. Dick, *Journal of Forensic Sciences, 15*(3): 357–363 (July 1970). Dichroic filters provide a rapid and inexpensive method of differentiating many washable, permanent and ball-point inks through simple viewing. There appears to be a definite correlation between the results seen in viewing and those obtained through reflected infrared and infrared luminescence photography. The application of such filters to ink differentiation problems has been discussed and a technique described whereby the results seen in viewing can be recorded on color films. (WEK)

A General Method for Assessing Factors Controlling Postmortem Cooling—A. E. A. Joseph and Elizabeth Schickele, *Journal of Forensic Sciences, 15*(3): 364–391 (July 1970).

1. The infinite cylinder has been selected as a model for studying the course of postmortem cooling.

2. It is recognized that the term body cooling is inapplicable to any one region of the body such as the rectum or subhepatic region. The course of cooling varies from point to point. For this reason we have rejected the term body cooling, replacing it with the term torso cooling.

3. Within the torso, for any given body, the course of cooling depends on the distance along the radius from the center. The theoretical model enables a comparison to be made of the course of cooling at different points. The selection of a standardized point of measurement of temperature is essential for accurate determination of the time of death, and for comparison between one body and another.

4. Use of the model permits construction of curves for varying resistances to heat flow external to the body core.

5. Experimental studies with a test cylinder simulating an infinite cylinder have clarified the changes in the cooling curve when the ambience is altered, as for example, when the body is moved. It has been determined that cooling for subjects reported in the literature often follows curves which are described as being of a compound nature.

6. These considerations have permitted explanation, qualitatively, and often quantitatively, of the wide variety of cooling curves which have been published in the literature.

7. Comparison of theoretical and actual cooling curves leaves no place for postulation of significant heat-producing postmortem metabolism near the region of the rectum.

8. A graphic method of displaying cooling curves which permits ready comparison with a standard curve and with other observed curves has been suggested.

9. It is recommended that measurement of torso cooling in the rectum be discontinued, and that the center of the torso be used instead. This is a standardized location, the use of which yields to both theoretical and practical manipulations.

10. Methods for setting up standard curves for any given set of conditions are indicated. A checklist of necessary observations and measurements is provided.

11. Estimates of error due to lack of precise knowledge of initial rectal temperature are included. (WEK)

Extrusion of Brain into Stomach: Report of a Case—Elliot M. Gross, *Journal of Forensic Sciences, 15*(3): 392–395 (July 1970). The pons was found in the stomach of a motor vehicle-pedestrian fatality who sustained a closed comminuted fracture of the skull. The explanation for this unusual finding is given. (WEK)

Injury by Birdshot—Vincent J. M. DiMaio and Werner U. Spitz, *Journal of Forensic Sciences, 15*(3): 396–402 (July 1970). Autopsy findings in a victim in homicide in which a .22 caliber shot cartridge (birdshot) was used have been described. The conventional criteria for estimating range could not be applied because of surgical intervention prior to death. Test firings revealed the wounding characteristics of this ammunition and disclosed that the distance from muzzle to head as well as the area of the skull which was involved determined the ability of the pellets to penetrate into the brain. On the basis of these experiments, it was ascertained that in the actual case the shot had been fired from a distance of less than 6″ but contact could be excluded. X-ray films of the pellet distribution in the brain as well as test firings of the weapon at paper targets were of no aid in estimating the range. (WEK)

A Simple Method for the Quantitative Determination of Propoxyphene in Plasma—Joseph