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Police Science Technical Abstracts and Notes

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POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

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Chloride Determination of Heart Blood—Irvin L. Fisher, *Journal of Forensic Medicine*, 14(3): 108-112 (July-September 1967). A study by the author indicates that chlorides present in heart blood plasma offer a definite means of the identification of deaths caused by drowning. Putrefaction does not always cause high values. The chloride determination offers a simple method for the diagnosis of death by drowning. (GDM)

The Longitudinal Striation of the Human Nails As a Means of Identification—F. Thomas and H. Baert, *Journal of Forensic Medicine*, 14(3): 113-117 (July-September 1967). The authors discuss the use of human nail striae as a means of identification. Data on nail clippings collected over a period of 7 years shows sufficient characteristics to permit an identification between the first and last year's clippings. (GDM)

A Study of the Metabolism Rates of Alcohol in the Human Body—R. P. Shumate, R. F. Crowther and M. Zarafshan, *Journal of Forensic Medicine*, 14(3): 83-100 (July-September 1967). This study results in some most interesting statistics which should be of value to the criminalist and toxicologist working with breath-blood alcohol analyses. These results afford an opportunity

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to understand better the many variables involved in alcohol metabolism in the human body. (GDM)

Pyrolysis—Infrared Spectrophotometric Analyses of Rubber Vulcanizates—Duncan A. MacKillop, *Analytical Chemistry*, 40(3): 607-609 (March 1968). A Pyrolysis-IR quantitative method for the rapid routine analysis of three elastomers, NR, SBR and BR in vulcanized rubber compounds is described. (PJC)

Capillary Gas Chromatographic Method for Determining the C₃-C₁₂ Hydrocarbons in Full-Range Motor Gasolines—W. N. Sanders and J. B. Maynard, *Analytical Chemistry*, 40(3): 527-535 (March 1968). A capillary gas-liquid chromatographic method to determine the individual C₃-C₁₂ hydrocarbons in full-range motor gasolines is described. The analyses are conducted on a 200 foot squalene capillary column in less than 2 hours. Approximately 240 chromatographic peaks are observed in the analysis of an average gasoline. (PJC)

Orientation Toward Cessation: A Reexamination of Current Modes of Death—Edwin S. Shneidman, *Journal of Forensic Sciences*, 13(1): 33-45 (January 1968). Death certification is important for the maintenance of health, the study of disease, and the administration of justice. These objectives can be attained, and an efficient and emphatic service in the care of the dead human body rendered, if the procedure of death certification is properly organized and confidentiality of personal medical data assured where not contrary to public policy. An innovation in certification procedure is recommended. This calls for a consultation prior to the completion of the death certificate and a change in its form

to achieve confidentiality of the certified cause. The semantics, the ambiguities, the variable interpretation given to the term "primary cause" of death and the analysis of "multiple and joint causes" require such consultation. Also the circumstances of death including the final personal behavior of the deceased, may be just as important as the symptoms and signs, the pathology, and various laboratory findings. A concise statement covering only the pertinent data in such areas should be part of the record.

Computer techniques will ultimately be applied to death certification and can make every human life a human experiment to yield information about disease unattainable by animal experimentation. (WEK)

Medicolegal Ramifications of Current Practices and Suggested Changes in Certifying Modes of Death—Don Harper Mills, *Journal of Forensic Sciences*, 13(1): 70-75 (January 1968). Some of the many problems which would arise with implementation of change in procedure for certification of mode of death are discussed. (WEK)

The Study of Accelerant Residues in Fire Remains—Bruce V. Ettl and Mark F. Adams, *Journal of Forensic Sciences*, 13(1): 76-89 (January 1968). The most important finding was that the amount of hydrocarbons in the char does not necessarily indicate added accelerant. Gas chromatography is the best means to characterize accelerant residues or the vapors from char. For vapor analysis, the samples must be sealed as soon after the fire as possible in order not to lose the volatile components. For residue analysis, the method of extraction and purification with alumina which was previously described is a good method for isolating the residues for gas chromatographic analysis. With care and the use of paraffin to retain the volatile components, chromatograms will show accelerant peaks which can be distinguished from the patterns of residues from wood, paper, and textiles. When definite evidence of an accelerant can be obtained from the simple vapor analyses, it would be unnecessary to go through any further, more complicated procedures. (WEK)

Rifled Shotgun Slugs—Charles S. Petty and John E. Hauser, *Journal of Forensic Sciences*, 13(1): 114-123 (January 1968). Two fatal shootings with a rifled slug loaded shotgun are pre-

sented. The skin wounds and deformed slug characteristics are detailed. A historical summary of rifled slug development is presented. (WEK)

Death from Imipramine Poisoning—Abdullah Fatteh, Robert Blanke and Geoffrey T. Mann, *Journal of Forensic Sciences*, 13(1): 124-128 (January 1968). A case of fatal imipramine poisoning is presented with description of the clinical signs and symptoms, autopsy findings, and results of toxicological analyses. (WEK)

Luger Pistol Identification Notes—V. Krcma, *Journal of Forensic Science*, 13(1): 129-136 (January 1968). Data has been provided which should be of assistance in deciphering the code and other markings on Luger pistols, thereby making the job less difficult for those involved in firearms registration and identification. (WEK)

Comparison of Paper Matches—H. J. Funk, *Journal of Forensic Sciences*, 13(1): 137-143, (January 1968). Experimental procedures reveal that sufficient characteristics are invariably present to allow a conclusive identification of two adjacent matches. Torn-out matches can be related to each other as well as to a used booklet provided at least one match remains in each layer.

The value of this type of evidence is quite apparent since it involves material in common use. The technique is relatively simple, requiring only standard equipment, and the comparison, when effected for individual characteristics, can be conclusive. (WEK)

Trace Evidence in the Form of Dust—F. B. Cocks, *The Australian Police Journal*, 22(2): 153-4 (April 1968). Railroad engines, traveling over different routes collect different patterns of dust and dirt in parts of the machinery. This concept formed the basis for the dust comparison and identification of tools used to steal copper from engines. (JDN)

The Registry of Forensic Pathology—Charles J. Stahl, *Journal of Forensic Sciences*, 13(2): 151-162 (April 1968). The development of the Registry of Forensic Pathology since its origin in 1958 has been discussed, and an analysis of various factors involved in nearly 900 cases has been given. Information concerning the contribution of cases as well as the selection, diagnostic coding, and retrieval of cases has been provided.

The role of the Registry of Forensic Pathology as a source of material for reference and a national repository for information related to forensic pathology, as well as its activities in postgraduate education and research, have been reviewed. Further contributions of forensic cases and the full support and recognition of pathologists, particularly the members of the American Academy of Forensic Sciences, are necessary for the Registry to achieve full usefulness. (WEK)

Role of the Forensic Pathologist in the Medico-legal Certification of Modes of Death—Theodore J. Curphey, *Journal of Forensic Sciences*, 13(2): 163-176 (April 1968). The forensic pathologist has an equally great responsibility for accurately certifying the mode of death in the nonhomicide case as in the case of homicide.

Analysis of a questionnaire sent to 19 medico-legal offices requesting information as to the certification of the mode of death in cases of non-homicidal barbiturate intoxication shows a wide disparity between offices as to whether the death is certified as suicidal or accidental by the combined efforts of the pathologist and the toxicologist. (WEK)

Shoepprints: Quantum of Proof—Robert J. Joling, *Journal of Forensic Sciences*, 13(2): 223-236 (April 1968).

1. The methods which should be employed in presenting the state's case using shoeprint evidence have been outlined.

2. Photographs and casts of shoeprints and comparisons of shoes with the discovered imprints which are needed has been discussed.

3. Various criteria and rules for determining admissibility and the weight to be given to such evidence must be carefully determined in each jurisdiction.

4. The forensic scientist is well able to demonstrate that his opinion on shoeprints is based on fact and that it resides in the realm of physical demonstration rather than in speculation.

5. When a shoeprint match involving individual characteristics is obtained, arguments against its admission into evidence are not valid.

6. Legal decisions relative to various evidentiary aspects of shoeprint evidence are cited. (WEK)

The Occurrence of Some Drugs and Toxic Agents Encountered in Drinking Driver Investigations—Bryan S. Finkle, Alfred A. Biasotti, and

Lowell W. Bradford, *Journal of Forensic Sciences*, 13(2): 236-45 (April 1968). A report of the frequency of occurrence of drugs in 3,409 routine drinking driver investigations in Santa Clara County, California during 1966 has been presented. Seven hundred and five (21 percent) cases involved 713 drug occurrences as indicated by police investigation. These drugs have been tabulated in 20 groups according to their physiological action. In the fraction of cases in which the blood alcohol concentrations were less than 0.15 percent W/V, and the subjects exhibited definite symptoms of intoxication, 21 percent of the cases through screening tests were found to have a significant concentration of other drugs in the blood sample submitted for alcohol analysis. (WEK)

Trace Analysis of Explosives as PI Complexes—D. B. Parihar, S. P. Sharma and K. K. Verma, *Journal of Forensic Sciences*, 13(2): 246-52 (April 1968). A rapid and convenient procedure for the identification of as little as 1 to 2 μg of explosives has been described. Nitroaromatic compounds being π acceptors form highly colored charge transfer complexes with aromatic amines (π donors). Thin-layer chromatography of the complexes provides data permitting identification of the explosive. R_F values for ten explosives using three aromatic amines and several solvent systems are given. (WEK)

The Identification and Determination of Micrograms of Morphine in Biological Samples—Leo R. Goldbaum and Melvin A. Williams, *Journal of Forensic Sciences*, 13(2): 253-61 (April 1968). The presence and concentration of morphine in urine and tissues can be determined by the procedure which has been described. The identification is made after purification by ionophoresis followed by spraying with iodoplatinate to form the purplish-black iodoplatinic acid complex with morphine. The morphine is recovered after liberation from the complex and identified by its highly characteristic ultraviolet differential spectrum in acid and base. The sensitivity of the procedure is increased by use of long lightpath cells. (WEK)

The Identification of Seminal Stains by Immunodiffusion on Cellulose Acetate—John I. Thornton and Duayne J. Dillon, *Journal of Forensic Sciences*, 13(2): 262-66 (April 1968). A method for the identification of human seminal stains