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## Police Science Technical Abstracts and Notes

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## POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

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**New Types of Adhesive Strips and Protection of Microscopic Evidence**—E. P. Martin, *International Criminal Police Review*, No. 200: 200-204 (August/September 1966). The results of tests on two new adhesive strips used to collect trace evidence are discussed. The tests described were performed on fibers. The fibers were embedded in the glue from the test strips and examined microscopically at intervals over a period of six months for possible changes due to the glue. No color changes were noted. The author is an advocate of this technique of collection of trace evidence provided caution is used in collection of evidence and interpretation of the results of the examination. (PJC)

**Reconstructing the Mutilated Head of a Dead Body**—J. P. Lahary, R. Michon, L. Derobert, Cre Ppal Bossard, *International Criminal Police Review*, No. 200: 205-209 (August/September 1966). A discussion of the reconstruction of heads in three cases where no photographs of the persons before death were available. Photographs of the reconstructed heads enabled identification of the three bodies. The technique of reconstruction used is outlined. (PJC)

**Spectrophotometric Determination of Unsaturated Pyrrolizidine Alkaloids**—A. R. Mattocks, *Analytical Chemistry*, 39(4): 443-447 (April 1967). The article describes a color reaction for the de-

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tection of pyrrolizidine alkaloids. The method utilizes the Polonovsky reaction. The base is oxidized to the N-oxide which is dehydrogenated to a pyrrole on heating with acetic anhydride. The pyrrole is then coupled with 4-dimethylamino-benzaldehyde (Ehrlich reagent) to give a color which can be measured spectrophotometrically. A description of the method and a discussion of the specificity of the method. (PJC)

**Gas Chromatographic Analysis of Dilute Aqueous Systems**—W. G. Jennings and H. E. Nursten, *Analytical Chemistry*, 39(4): 521-523 (April 1967). A description of a method for concentrating volatiles from dilute samples and eluting them to a GLC column for analysis. It includes a diagram of the apparatus used to sweep volatiles from dilute aqueous systems onto activated carbon. The volatiles are then eluted from the carbon and run by GLC. (PJC)

**Determination of Ephedrine and Certain Related Compounds by Ultraviolet Spectrophotometry**—Jack E. Wallace, *Analytical Chemistry*, 39(4): 531-533 (April 1967). The article describes a U.V. method for determining ephedrine and those related compounds which extract as a base and have a benzyl alcohol functional group. (PJC)

**Analytical Processes in Photography**—Joseph Tholl, *Police*, 10(5): 19-27 (May-June 1966). Described by the author, are numerous special techniques available to the photographer and document examiner. Such techniques as filter fluorescent lighting, U.V. color fluorescence photography, infrared luminescence, and the use of infrared aero film are discussed. An abundance of photographs is included which illustrate the results obtainable with these methods. (GDM)

**Marihuana and Crime**—J. C. Munch, *U. N. Bulletin on Narcotics*, 18(2): 15-22 (April-June 1966). The author surveyed literature of crimes connected with marihuana and found a clearly demonstrated relationship. Brief case histories are given. (JDN)

**Suicidal Poisoning by Sodium Chlorate**—J. Timperman and R. Maes, *Journal of Forensic Medicine*, 13(4): 123-29 (October-December 1966). Three cases of suicidal poisoning by sodium chlorate are described. The typical clinical picture is given as follows: a latent period during which nothing is noted except pallor. After an hour or two, the victim becomes cyanotic and death follows within half an hour. Survival may be prolonged a few hours if therapy is immediately applied. Post-mortem findings include severe damage to the kidneys, and a chocolate color and muddy appearance of the blood. Toxicological analysis demonstrates the presence of a strong oxidizing agent. (PLC)

**Seminal Stains—A Simple Device for Their Determination**—T. Marcinkowski and Z. Przybylski, *Journal of Forensic Medicine*, 13(4): 130-133 (October-December 1966). A simple apparatus available in laundering devices was used for investigating sperm traces. Results indicate that this device permits better separation of spermatozoa from seminal stain on a cloth without damaging the structure of the spermatozoa than do conventional devices. (PLC)

**Investigations on the Occurrence of Diatoms in Organs in Death from Various Causes**—R. Porawski, *Journal of Forensic Medicine*, 13(4): 134-7 (October-December 1966). Material was collected from the corpses of twenty-six persons who had died from a variety of causes, including drowning. Findings indicate that diatoms do not penetrate through the alimentary canal during life but do penetrate through the respiratory tract. During drowning, diatoms penetrate through the lungs and into other organs. Investigation is continuing on the evidential value of diatoms as proof of death from drowning. (PLC)

**Limits of Specificity in Estimating the Species Origin of Blood**—S. Roszeja, *Journal of Forensic Medicine*, 13(4): 138-40, (October-December 1966). The specificity limits of the method of inhibition of phytohaemagglutinin obtained from the

pericarp of the fungus *Laccaria laccata* var *proxima* were determined and compared with the limits of the classical precipitin method. The new method is not absolutely specific for human blood but is able to distinguish with certainty human blood from that of a zoomorphic monkey thus surpassing the precipitin method. (PLC)

**The Efficiency of Methods of Estimating the Time of Death by Pharmacological Means**—S. Bardzik, *Journal of Forensic Medicine*, 13(4): 143-3 (October-December 1966). Reactions of the pupils and the sweat glands to drugs may be useful in estimating the time of death provided the examiner is skillful and has had some experience in the interpretation of the results. Positive reactions from the pupils and sweat glands are obtained for a maximum period of 20 hours; for the double reaction of the pupils, 10 hours. Further analysis with additional drugs on a larger sample is planned. (PLC)

**Penetration of Ethyl Alcohol into the Central Nervous System**—E. Chrosculewski and J. Pfeiffer, *Journal of Forensic Medicine*, 13(4): 144-7 (October-December 1966). A study of the alcohol concentration in the blood and that in the brain cortex and brain white matter in autopsy material and at different time intervals after alcohol administration indicates that the index of alcohol in the brain is constant and within definite limits. In all cases, the ratio of alcohol in blood and in the brain was on an average 1.15. Method may be used on brain tissue in autopsy cases where a blood sample is not available. (PLC)

**Estimation of Post-Mortem Blood Barbiturates**—A. M. Teppo and A. Alha, *Journal of Forensic Medicine*, 13(4): 148-52 (October-December 1966). Turner's perchloric acid protein precipitation method and thin layer chromatographic isolation were used to identify barbiturates in liver extracts of 30 fatal cases. Results of thin layer chromatographic isolation were lower than those from Turner's direct procedure possibly because of factors in the blood which add to the results in the direct procedure. (PLC)

**Influence of Insulin on Rate of Ethyl Alcohol Oxidation in Blood**—M. Kapczynska and J. Raszewski, *Journal of Forensic Medicine*, 13(4): 153-5 (October-December 1966). A study has been made on the effect of insulin on the disappear-

ance rate of alcohol in blood samples from dogs and human subjects. Results indicate that insulin does not act on alcohol. This is in agreement with the findings of other investigators. (PLC)

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**Camera Lucida—An Instrument for Forgery—**Robert Keyes, *Finger Print and Identification Magazine*, 48(5): 3-5, 23 (November 1966). The technique by which signatures can be forged using Camera Lucida is discussed. All of the characteristics of a traced forgery may be found with the addition of those arising out of the shift in axis of the forger's eye. (JDN)

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**Bibliography for the Firearms Examiner—**B. D. Munhall, *Finger Print and Identification Magazine*, 48(5): 6-7, 11-16 (November 1966). A very comprehensive bibliography of books and periodicals relating to firearms, ammunition and firearms identification. Periodical articles are not included. (JDN)

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**Determination of Volatiles in Solids and High-Boiling Liquids by Gas Chromatography—**D. D. Rice and J. M. Trowell, *Analytical Chemistry*, 39(2): 157-162 (February 1967). The article describes two methods of determining volatile organic components and water in solids and high-boiling liquids. Method one involves on-column trapping. Method two involves a precolumn for trapping. (PJC)

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**Measurement of Infrared Spectra of Gas-Liquid Chromatography Fractions Using Multiple Scan Interference Spectrometry—**M. J. D. Low, and Stanley K. Freeman, *Analytical Chemistry*, 39(2): 194-198 (February 1967). The proposed method utilizes a multiple-scan interference spectrometer to measure G. C. Fractions. The gas chromatograph effluent is passed through a flow-through IR cell. As it does so, consecutive scans are taken across the profile of the G. C. peak. (PJC)

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**General Method for Analyzing Refractory—Metal Alloys Using the Vacuum-Cup Electrode—**E. C. Leao, E. W. Hobart, and D. E. Fornwalt, *Applied Spectroscopy*, 20(6): 400-3 (November-December 1966). Use of the vacuum cup electrode in the analysis of refractory-metal alloys is described in detail. Citric and oxalic acids are used as complexing agents. Under these conditions, no interelement effects could be observed. Internal

standards are necessary in this method. A chart of alternate parameters for the Jarrell-Ash varisource unit is presented. The method appears to have an overall relative standard deviation of 3.5%. The vacuum cups are convenient to use in that no electrode preparation is necessary, electrodes can be loaded well in advance of excitation and solutions are never lost by boiling over. (EMB)

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**Pressed-Film Techniques for Obtaining Infrared Spectra of Thermoplastic Materials—**J. E. Coakley and H. H. Berry, *Applied Spectroscopy*, 20(6): 418-21 (November-December 1966). A simple and rapid method of obtaining thin films of thermoplastic materials via a compression moulding technique is presented. Equipment needed consists of (1) two flat polished chrome nickel stainless steel disks, (2) a hot plate, and (3) a laboratory press. Experimental details are presented along with comparisons of spectra obtained by ordinary techniques. (EMB)

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**Anomalies in Infrared Transmission Spectra Caused by the Self-Emission of Translucent Samples—**M. J. D. Low and L. Abrams, *Applied Spectroscopy*, 20(6): 416-17 (November-December 1966). Samples with very low transmittance ( $\approx 1\%$ ) may show an increase in apparent transmission which is actually due to heating of the sample with resultant sample emission. Such effects can be avoided if a chopper is used between the source and sample since then any sample emission would appear as a dc signal and would not be recorded. (EMB)

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**A Simple Apparatus for Dark Ground Illumination of Precipitin Lines—**Ralph M. Glazier, *Journal of the Biological Photographic Association*, 34(2): 51-52 (May 1966). A description of a simple, inexpensive method for construction of a dark-field illuminator for observation and photography of precipitin lines. (CRT, Jr.)

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**Short Wave Ultraviolet Radiation—Its Uses in the Questioned Document Laboratory—**Joseph Tholl, *Police*, 11(4): 21-28 (March-April 1967). A description of the uses of short wave ultraviolet radiation for photography in questioned document cases. The added effectiveness of photography with a pinhole lens is discussed. Additions and erasures can be studied by U. V. fluorescence and luminescence. Inks can be compared by the fluorescence of chromatograms. (CRT, Jr.)

**Identification of Crystals in Human Tissue**—D. H. Hamer, *The Microscope*, 15(6): 230-8 (September-October 1966). Crystalline material in tissue can be identified by determination of normal optical properties *in situ*. When the ratio of crystalline material is high, X-ray diffraction patterns can be produced by ground dry samples. Crystal solubility can be determined by suspending on a cover slip over solvent in a cavity well. Dispersed crystals can be gathered into a ball with Canada balsam and subjected to X-ray diffraction study. (JDN)

**A Device for Holding Objects under the Microscope**—Bernard M. Dubeski, *The Microscope*, 15(4): 146-7 (May-June 1966). An illustration of a method for holding objects under the microscope for examination by means of a fine hypodermic needle and a small vacuum pump. The needle is ground square and attached to the barrel of a syringe which serves as a handle. As long as the vacuum is on, the object is held by the needle. (CRT, Jr.)

**A Simple Microspectroscopic Ocular**—John Gustav Delly, *The Microscope*, 15(4): 143-4 (May-June 1966). An illustration and description of a simple spectroscopic ocular for qualitative determinations through microscopy. Its use is limited to transparent solids and liquids, and is considered especially good by the author for detecting blood and checking absorption of light filters. (CRT, Jr.)

**Thin-Layer Chromatography Techniques Utilizing the Eastman Chromagram Sheet and Developing Apparatus**—Joseph Tholl, *Police*, 11(2): 55-63 (November-December 1966). A description of applications of thin-layer chromatography to identification of inks from questioned documents and to matching the pens which produced the original writing. (CRT, Jr.)

**Notes on Polygraph Research**—Frank R. Wallace and Rudolph R. Caputo, *Police*, 11(2): 41-42 (November-December 1966). A discussion of the need for more extensive research programs involving polygraph examinations to establish more reliability upon the polygraph as a tool in criminal investigations. (CRT, Jr.)

**History of Blood Group Nomenclature**—Alexander S. Wiener, *Journal of Forensic Medicine*, 14(1): 3-12 (January-March 1967). A history of blood group nomenclature is given with emphasis on the

current controversy regarding the nomenclature to be used for Rh-Hr blood types. The author advocates discarding Fisher and Race's C-D-E notations and Rosenfield's numbered notations in favor of the original Rh-Hr nomenclature. (PLC)

**Experimental Studies on Barium Poisoning**—A. Jaklinski, J. Maj and E. Przegalinski, *Journal of Forensic Medicine*, 14(1): 13-15 (January-March 1967). A study of the influence of potassium on acute intoxications with barium compounds was made using white mice, white rats, and rabbits. Results indicate that the administration of potassium has a protective action in barium poisoning. The LD in all cases was increased, and the symptoms were diminished. Results also indicated a lowering of the potassium level in serum in cases of barium poisoning. Further research on the antagonism between potassium and barium may indicate a mode of treatment for barium poisoning. (PLC)

**Investigations on Endogenous Carboxyhaemoglobin**—Jan Markiewicz, *Journal of Forensic Medicine*, 14(1): 16-21 (January-March 1967). The formation of carboxyhaemoglobin in cadaver blood samples was investigated. The conditions found in haemoglobin degradation are favorable to COHb formation: low pH values, haemolysis, decreased partial pressure of oxygen, decreased activity of catalase, and the appearance of peroxides in the case of aeration. Heating of the blood samples also causes formation of CO. These results indicate that further investigation on carbon monoxide of endogenous origin is necessary. (PLC)

**Death Due to Electric Flash Burns**—S. K. Nayak, *Journal of Forensic Medicine*, 14(1): 22-29 (January-March 1967). Two rare cases of death due to electric flash burns are discussed including reconstruction of the events leading to the accident. Neither man was electrocuted despite the fact that a high tension current passed through the body, including the heart and lungs. The apparent reason for this survival was the duration of the current, probably only a fraction of a second. (PLC)

**Blood Group Substances in Body Fluids—Comparison of the Concentrations in Semen and in Saliva**—M. Sato and F. Attensaaser, *Journal of Forensic Medicine*, 14(1): 30-38 (January-March 1967). A technique for determining group 0 as well

as A, B, and AB secretors is described. The A, B, and H inhibition titers of saliva and semen were determined using isoantibodies and the lectins of *Ulex europaeus* and *Dalichos biflorus*. Results indicate that individuals with high, low, and intermediate H levels in semen can be readily differentiated since the H substance in different samples from the same individual show small variation in inhibition titer. In most secretors, the A, B, and H content of semen is higher than that of saliva causing dried seminal stains to give much better reactions than dried stains of saliva. (PLC)

**Suspended Animation and Resuscitation—A Historical Review in the Light of Experimental Hypothermia**—H. Karplus, *Journal of Forensic Medicine*, 13(2): 68-73 (April-June 1966). Discussion of references to reanimation traced back to Bible in legend of Elisha to modern experiments in suspended animation. Resuscitation of persons suffering from severe alcoholic intoxication, apparently killed by frost, even after prolonged cardiac arrest is explained by fact that brain is cooled rapidly and its need of oxygen reduced. Exposure to cold, in an asphyxiated newborn, is therefore life-saving and does not accelerate death. Application of warmth and artificial respiration are basic elements of resuscitation. (PLC)

**Driving under the Influence of Alcohol**—K. M. Bowden, *Journal of Forensic Medicine*, 13(2): 44-67 (April-June 1966). Author discusses the following measures in use in dealing with problem of drunk driving and the road toll: 1) Basic Legislation, 2) Chemical Test Legislation, 3) Preventive Legislation, 4) Increased Traffic Police Force, 5) Police Preventive Work, 6) Greater Use of Road Blocks, 7) Graduated Offenses with Graduated Penalties, 8) Automatic Suspension of the License, 9) Elimination of Right of Drunk Drivers to Go before a Jury, 10) More Widespread Use of Breath Tests, 11) A Sustained Intensive Educational Program, 12) Stigma of the Offense of Driving under the Influence of Alcohol and 13) Legislation and Education Concerning the Use of Safety Belts, Crash Helmets, etc. (PLC)

**Preconditioning of Septums to Reduce Eluate Contamination and Anomalous Peaks during Temperature Programing**—A. Tamsma, F. E. Kurtz, N. Rainey, and E. M. J. Pallansch, *Journal of Gas Chromatography*, 5(3): 271-72 (May 1967).

Spurious peaks, not related to the sample can be generated by volatile components of the septum. Septums can be preconditioned by prolonged heating under vacuum. (GDM)

**Computerized Ballistics Analysis**—Robert Jones, *Identification News*, 17(4): 6-9 (April 1967). Research being done at the present time indicates the future possibility of a nation-wide open firearms file. Using an electromechanical scanner and a nation-wide computer, the possibility of searching all test bullets from all laboratories in the country may be developed. (GDM)

**Forgery of Finger Prints**—R. Keyes, *Finger Print and Identification Magazine*, 48(8): 3-7, 13-17 (February 1967). A discussion of the impracticality of finger print forgery. A number of identical prints at a crime scene or prints impressed with a substance not having the composition of sweat would suggest an attempt at a forgery. Since the "appointed innocent suspect" must cooperate in providing the original material, this idea seems likely to remain a topic for sensationalism, only. (JDN)

**Comments on the Discovery of Striation Matching and on Early Contributions to Forensic Firearms Identification**—F. Thomas, *Journal of Forensic Sciences*, 12(1): 1-7 (January 1967). Literature concerning the discovery and early applications of the principle of striation matching has been summarized. Significant contributions to the science of identifications involving this principle easily may be overlooked because of their presence in sources which are now relatively obscure. (WEK)

**Acute Ethanol Toxicity in the Dog**—J. C. Gariott, A. B. Richards, F. W. Hughes, and R. B. Forney, *Journal of Forensic Sciences*, 12(1): 8-18 (January 1967). Lethal doses of ethanol administered to dogs by constant infusion produced a hyperglycemia, an increase in plasma free fatty acids, and a rise in the serum glutamic oxaloacetic transaminase activity. This is in contrast to the effects of another central depressant, pentobarbital sodium, which decreases these blood constituents. Damage to some body tissues by the alcohol is implicated by the rise in SGOT activity and circulatory failure may be a contributory factor to death, as indicated by a depression of blood pressure. Catecholamine release and sympathetic stimula-

tion due to ethanol are discussed as possible common factors influencing these observed changes. (WEK)

A Study of the "Paraffin Test"—Mary E. Cowan and Patricia L. Purdon, *Journal of Forensic Sciences*, 12(1): 19-36 (January 1967). A frank discussion and demonstration of the fallibility of the so-called "Paraffin Test". The study presented here concentrated attention on results obtained on 173 pairs of casts formed on hands of deceased persons known to have discharged firearms, i.e. a case group and comparison of these with results obtained on 158 pairs of casts from hands of persons known or presumed not to have fired guns, i.e. a control group. Critical evaluation of the type, site, and numbers of reactions obtained on casts from hands of persons known to have fired guns and comparison of these characteristics in similar reactions on casts from a control group of persons known or presumed not to have fired guns failed to establish any significant distinction. This study affirms the unanimous opinion of representatives of twenty-one countries who participated in the First I.C.P.O.—Interpol Seminar on Scientific Aspects of Police Work, viz.:

"The seminar did not consider the traditional paraffin test to be of any value, neither as evidence to put before the courts, nor even as a sure indication for the police officer. The participants were of the opinion that this test should no longer be used." (WEK)

Handwriting by the Blind—Mary S. Beacom, *Journal of Forensic Sciences*, 12(1): 37-59 (January 1967). Handwriting by the blind merits serious study by the document examiner because an ever increasing number of blind persons are being taught to write and type and will eventually be engaged in signing important papers. It follows that some of these writings will be involved in disputes and must be properly evaluated and identified. Twenty-two features of handwriting by the blind have been enumerated and described as illustrated. It is not easy to recognize the writings of sightless people or those who have suffered great impairment of vision, for these persons show a surprising variation in habits, skills, and forms in their writings. It is hoped that large and representative collections of handwritings by the blind will be acquired by various document examiners in order to augment those presently available. (WEK)

Intracranial Pressure Changes Following Impact of Human Cadaver Heads. I. Brain Surface Measurements—Sanford Edberg and Alfred Angrist, *Journal of Forensic Sciences*, 12(1): 60-7 (January 1967). The effects of impact on human cadaver skulls with brains in situ were studied by sensitive transducers and accelerometers. It was demonstrated that rapid negative and positive pressures occurred at the surface of the brain following coup and contrecoup blows to different skull areas. These pressure changes were associated with the movement or acceleration of the calvarium in relation to the contained brain. Negative pressures should be emphasized as important in causation of cerebral injury. (WEK)

A Case of Mercury Poisoning—T. C. Chao and C. Y. Yap, *Journal of Forensic Sciences*, 12(1): 68-76 (January 1967). A case of a 26-year old Chinese male diabetic who had received injections of metallic mercury purported to cure his diabetes has been described. He subsequently had gastrointestinal, renal, and neurological symptoms of mercury poisoning prior to his death. Water-soluble mercury compounds were obtained in analyses of liver, kidney, and intestines. It is suggested that the metallic mercury was metabolized to water-soluble mercury compounds which were absorbed and excreted giving rise to toxic symptoms. (WEK)

Exclusion of Paternity by Rh-Hr and M-N-S Genotyping—Edson Silveira and Ribeirao Preto, *Journal of Forensic Sciences*, 12(1): 77-81 (January 1967). An unusual case of exclusion of paternity is reported, in which the genetic incompatibility was demonstrated by family studies to establish the Rh-Hr and M-N-S genotypes of the litigants. The defendant proved to be phenotype Rh<sub>2</sub>Rh<sub>0</sub> and genotype R<sup>1</sup>R<sup>2</sup>, as determined by tests on his parents. The child proved to be type rh, i.e., genotype rr, incompatible with the defendant's genotype. Similarly, the mother proved to be type MNS, genotype M.S/N.s as deduced from tests on her relatives. This genotype was also incompatible because the man was type M.s and the baby MN.S. Since the mother did not have gene N.S and the man did not have M.S, the child could be phenotype M.S or MN.s but not type MN.S. (WEK)

Printed Matter as Questioned Documents—Jan Beck, *Journal of Forensic Sciences*, 12(1): 82-101

(January 1967). Analysis of printed matter to differentiate originals from reproductions or to establish the source of a printed document is within the document examiner's sphere of competence. Competence presupposes some knowledge of the important printing processes and their characteristics. The examiner who has occasion to analyze printing should be sufficiently familiar with the subject to confer intelligently with specialists. This paper has discussed printing characteristics in terms of printing processes, typesetting methods, type matter, kind of press, quality of printing job, and typefaces, and has described the process of comparison. (WEK)

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#### Perception and Handwriting Identification—

Rafael Fernandez Ruenes, *Journal of Forensic Sciences*, 12(1): 102-111 (January 1967). The necessity of special training in perception of form for examining handwriting for the purpose of identification has been discussed. Individual characteristics of handwriting which a layman looks for are not the best for the purpose of identification. With a mnemonic device the author has arranged twenty outstanding individual characteristics of handwriting, which have been of great help in teaching as well as in practice. When examining handwriting something striking must be found in order to convince the examiner and also to help him convey to others his findings, when the process of examination is concluded. It may consist of a small stroke, such as a tiny harpoon, or a whole letter or word. This has been called the "hint." Gestalt Psychology illustrations and other visual illusions are employed to indicate the nature of the mental processes involved in finding a "hint." One illustration is taken from an actual case in which the formation of a capital "L" is the "hint." With only the "hint" spuriousness of a signature is shown. (WEK)

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#### Determination of Gunshot Firing Distances and Identification of Bullet Holes by Neutron Activation Analysis—S. S. Krishnan, *Journal of Forensic Sciences*, 12(1): 112-122 (January 1967). A new method of identification of bullet holes and determination of gunshot firing distances has been developed. The patterns of metallic elements such as antimony and copper, found in firearm discharge residues around a bullet hole, by the use of the neutron activation analysis technique.

The method consists of (1) firing test shots on a filter paper or clothing, (2) removal of concentric

circular sections of target material at various distances from around the bullet hole, (3) activation of these sections in a nuclear reactor, (4) radiochemical separation of the induced radioactivities of  $Sb^{122}$  and  $Cu^{64}$  in the discharge residues and (5) the quantitative estimation of each activity using gamma scintillation spectrometry. The NAA technique for the determination of firing distances is effective much beyond the range of the procedures available at the present time. The method is versatile and subject to less errors by contamination than other methods. This application of NAA provides a powerful tool for the identification of bullet holes and the determination of firing distances. (WEK)

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#### The Determination of Carbon Monoxide in Blood by Gas-Solid Chromatography—Donald W. Hessel and F. Rene Modglin, *Journal of Forensic Sciences*, 12(1): 123-31 (January 1967). A gas chromatographic method is described for analyzing blood for carboxyhemoglobin. The chemically bound gases in half of a dilute solution of hemolyzed blood were released by treatment with aqueous ferricyanide solution, and the gaseous mixture was fractionated on two 2-meter silica gel columns mounted in series in the gas chromatograph. A second analysis was made on the other half of the diluted blood solution after it had been saturated with carbon monoxide. Direct comparison of peak heights gave the level of saturation of blood by carbon monoxide.

A few simple experiments dealing with the effect of storage and decomposition of blood on the analytical results showed no consistent trend. Samples should be analyzed as soon as possible after acquisition, and storage, if necessary, should be at freezing temperatures. Parallel analyses with and without sodium hydrosulfite added to the diluted blood solutions are recommended in the case of specimens which are not fresh, as a means of confirming the possibility of significant compositional change. (WEK)

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#### Narcotic Drugs—*International Criminal Police Review*, No. 203: 290-296 (December 1966). A report summarizing discussion and activities of Interpol General Assembly which was held in September, 1966 at Berne, Switzerland, and gives information on the activities of police throughout the world in the investigation of illicit drug traffic. Recommendations again repeat, among others, the need for destroying the cultivation of plants