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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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Abstractors

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The Railroad Police—Thomas F. Coon, *The Bulletin, The Society of Professional Investigators*, 8-13 (January 1965) surveys the activity and the legislative background under which the railroad police operate. (OH)

Tranquilizer Guns—Potential Law Enforcement Equipment—Gustave Ullrich and Irving C. Hansen, *The Bulletin, The Society of Professional Investigators*, 14-17 (January, 1965) describe tranquilizer or knock-out pellets which had been experimented with by various police departments. They describe the usefulness of these weapons in subduing, without bodily harm, suspects who are "temporarily berserk." (OH)

Essex Will Film Drinking Driver—Milton Honig, *The New York Times*, 35 (December 18, 1964). A featured news item describes the use of motion picture cameras while testing coordination of suspected drunken drivers by the Essex County, New Jersey, Police. (OH)

Data Processing in the Italian Police—Dr. Ilio Corti, *International Criminal Police Review*, No. 179: 158-167 (June-July, 1964) and No. 180: 190-197 (August-September, 1964). The paper presents an extensive discussion on data processing techniques. Basic principles, the use of computers in police work, and record consultation in crime prevention and law enforcement are discussed in the first section. Organization of the computer system in police investigation which includes a survey of the conventional system, choosing methods and spheres of application and equip-

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ment, coding systems and preliminary forms, staffing, and the maximum usage of the system's possibilities are among topics discussed in the second section. (OH)

International Conference on Alcohol and Traffic Safety—The 1965 conference will be held at Indiana University, Bloomington, Indiana December 6-10 and is open to all persons in the legal, medical, enforcement, and research fields. The conference is similar to those held in Stockholm, 1958, Toronto, 1960, and London, 1962. The divisions are: (1) alcohol and road accidents; (2) pharmacological, physiological, and psychological aspects; (3) the drinking driver; (4) chemical tests for intoxication; (5) comparative aspects; (6) enforcement aspects; and (7) legal aspects. For enrollment, or additional information, write Prof. Robert F. Borkenstein, Department of Police Administration, Indiana University, Bloomington, Indiana. (OH)

The Fourth International Meeting on Forensic Immunology, Medicine, Pathology, and Toxicology—The meeting is scheduled for Copenhagen August 15-18, 1966. Information concerning the meeting may be obtained from Professor Dr. Harald Gormsen, Director, University Institute of Legal Medicine, Frederik D. Femtes 9 A, Copenhagen, Denmark. Dr. Milton Helpert, Office of the Chief Medical Examiner, 520 First Avenue, New York, New York 10016 has information on charter flights which will leave New York for Stockholm August 6, 1966 and return from London September 5, 1966. The Stockholm arrival will provide for attendance at the Second Congress of the International Association of Traffic Accident Medicine to be held in that city August 9-12, 1966. Interested individuals in the charter flights are advised to write early for information and reservations. (OH)

Second International Meeting in Questioned Documents—The meeting is planned to be held in Copenhagen at the same time as the Fourth International Meeting in Forensic Medicine. Document examiners interested in participation or further information should write Ordway Hilton, 15 Park Row, New York, New York 10038. (OH)

Methods and Findings of Fatal Highway Collisions—A. L. Moseley, *Royal Canadian Mounted Police Gazette*, 26 (12): 12-4 (December, 1964). Recommends that an automobile fatality should be given the same attention as a homicide, bringing to bear experts in fields that might contribute to the solution of the total accident dilemma. (JDN)

The Diagnosis of Alcoholic Intoxication—M. J. Ree, *Medicine, Science and the Law*, 3 (4): 299-312 (July, 1963). The relation between urine and blood alcohol concentrations is discussed. If a single urine specimen, collected over four hours, is examined, the over estimate of alcohol in blood may be as great as 40%. The rate of metabolism of alcohol is proportional to the concentration. Immediately after the ingestion of alcohol on a fasting stomach, the blood alcohol concentration will be high until the alcohol has time to diffuse into body tissue. When properly conducted, chemical tests give a reliable index of blood alcohol levels. Multiple urine samples, at thirty minute intervals, are necessary for accurate results. (JDN)

A Gas Chromatographic Technique for the Analysis of Anesthetic Gases in Tissue—E. N. Cohen and H. W. Brewer, *Journal of Gas Chromatography*, 2 (8): 261-262 (August, 1964). A biopsy needle by which tissue can be introduced into the column port, is described. By using a fore-column of Drierite and Carbowax, tissue can be eliminated. (JDN)

Effective Lecture Slides—Anonymous, *Photo Methods for Industry*, 7 (6): 32-34 (January, 1964). Tips for presentation of information through slides. (JDN)

Sentenced to Death: The Simcox Case—T. Lockley, *The Police Journal*, 37 (7): 314-20 (July, 1964). A man, murdered his second wife, was sentenced to death, reprieved and released. A short time later he attempted to murder his third

wife and instead killed his sister-in-law and wounded three other people. The author reflects on the wisdom of a court that could endanger innocent people by leaving a man with such a record, on the street. (JDN)

In the Shadows—A. R. B., *Journal, Forensic Science Society*, 4 (3): 110 (March, 1964). A discussion of the "dark figure" of hidden or unreported crime. The apparent growth of crime of the hidden kind may be greater than suspected. Criminals may simply be practicing their craft with greater skill than police are practicing detection. Those in the forefront of the crime war can certainly attest to this. (JDN)

The Re-adoption of Previous Habits to Disguise Handwriting—D. G. Stuckey, *The Australian Police Journal*, 18 (2): 93-108 (April, 1964). Forgeries or attempt fraud were identified by comparing the questioned signature with writing executed several years before. The same peculiarities appeared in the contemporary disguised writing as were writing habits forty years before. Author suggests that handwriting laboratories retain old disguised writing in order to detect these same disguises in present forgeries. (JDN)

Automatic Single Fingerprint Identification—J. A. Fitzmaurice, *Identification News*, 13 (11): 4-7 (November, 1963). Describes a machine scanning of fingerprints for ridge-endings and bifurcations. These are located in a grid system, stored on magnetic tape. Scanning can be done at a rate of 3,000 per week. Author estimated that as many as 50% of latents can be scanned. (JDN)

Can Eight Corresponding Ridge Details in Fingerprints Justify Positive Identity—Pardaman Singh, *Identification News*, 14 (4): 11 (April, 1964). Using hypothetical values, the author "justifies" an eight point identification. (JDN)

Airline Ticket Frauds—Anonymous, *Royal Canadian Mounted Police Gazette*, 26 (12): 5-7 (December, 1964). Although the suppression of airline ticket frauds is largely a problem for airline security, police agencies operating on a national basis, as well as Interpol, are concerned. Wherever airline travel agency offices are burglarized, attention should be directed to possible loss of tickets and validating stamps. (JDN)

Recent Developments in the Application of Neutron Activation Analysis Techniques to Forensic Problems—V. P. Guinn, *Journal, The Forensic Science Society*, 4 (4): 184-91 (October, 1964). A review of progress in 1964, in the application of N A A to the study of evidence in the areas of hair, gunshot residue, and paint. (JDN)

Color Photography and its Limitations in Forensic Work—M. Neilson, *The Australian Police Journal*, 18 (2): 131-4 (April, 1964). Discusses the relationship between lighting conditions and the color picture vs. the way the eye and brain "see" the object's color. (JDN)

When is a Photograph a Fair and Accurate Representation?—H. B. Tuttle and Edwin C. Conrad, *Fingerprint and Identification Magazine*, 46 (6): 3-46 (Dec., 1964). The authors present many of the problems associated with accurate reproductions of crime scenes and evidence by photography. The mechanism of "seeing" is discussed with respect to color and persistence of vision. Perspective and geometric interpretation as well as the effect of the type of shutter need to be considered in the so-called "photographic distortion"; the authors state that this is a myth. No distortion exists if the photograph is properly viewed. Several suggestions are made concerning the use and presentation of photographs in court. (JDN)

Macrophotography with Electronic Flash—H. Eisenbeiss, *International Photo Technik*, 1964 (2): 88, 106-8 (Summer, 1964). The exposure correction for change in effective diaphragm setting is calculated from a nomograph with further calculations for lamp to subject distance for flash. The use of even low power units eliminates reciprocity failure. The correct setting for maximum resolution and depth of field can be calculated from data given. (JDN)

Special Monochrome Photographic Techniques—H. J. Walls, *Journal, The Forensic Science Society*, 4 (3): 111-8 (March, 1964). The use of superimposition to compare objects or to show the relationship of separate items of evidence often reveals patterns not seen in the individual photograph. Infrared and x-ray photographs are reviewed. (JDN)

Restoration of Serial Numbers—Anonymous, *Royal Canadian Mounted Police Gazette*, 26 (12): 15-6 (December, 1964). Various methods for removal of serial numbers are discussed. These include, reworking, altering, removal, and removal followed by substitution of new metal and re-stamping. (JDN)

Powder Actuated Tools—B. D. Munhall, *Identification News*, 13 (8): 10-3 (August, 1963). The operation of cartridge or powder actuated tools, as well as malfunctions, are discussed. Accidents usually result from improper maintenance of equipment or unusual composition of material into which the stud is fired. Suggestions for an investigation of accidents are given. (JDN)

Staff Development in the Police Service—E. Anstey, *The Police Journal*, 37 (7): 308-13 (July, 1964). In order to improve police service, a greater number of recruits with higher educational attainments must be attracted. After enlistment a program must be available to train, school, and promote the most eligible. Each recruit is made aware of his progress through evaluations and interviews. (JDN)

On Methods and Errors in Speed Measurement—E. W. Hemingway, *The Australian Police Journal*, 18 (2): 114-7 (April, 1964). Two methods of speed check are discussed. The first uses a stop-watch to time a car between two points (shadows) over a measured distance. Error of only 2% is possible. The second method involves tracking a vehicle for a period using the tracking car's speed as the measure of the speed of the forward car. In this method, serious error is possible unless the tracking extends over a long enough distance, several hundred yards, at least. (JDN)

Spectrophotometric Determination of Microgram Quantities of Copper in Biologic Material—Ramon E. Stoner and Waldemar Dasler, *Clinical Chemistry*, 10 (9): 845-852 (September, 1964). This method seems to fill the need for a specific method for the determination of small amounts of copper in routine analyses. The spectrophotometric sensitivity of the reagent in micrograms per square centimeter as defined by Sandell is 0.0011. The sample is wet ashed with a nitric acid-perchloric

acid mixture. The copper is extracted from an alkaline solution of the ash with a solution of diphenylcarbazide in benzene. Absorbance of the red complex is read at 540 millimicrons. Purines and pyrimidines are destroyed in the wet ashing procedure and are of no concern in inhibiting reaction between diphenylcarbazide and copper. (JDC)

Uses for a Holmium Oxide Filter in Spectrophotometry—Roderick T. MacDonald, *Clinical Chemistry*, 10 (12): 1117-1120 (December 1964). The use of a holmium oxide calibration filter is discussed for checking wave length, trouble shooting, and adjusting sensitivity of spectrophotometers. The spectral transmittance curve shows 19 well defined peaks over the range of 280 to 550 millimicrons. This filter permits the wave length calibration of an instrument to be checked over a fairly wide range. The author also describes a procedure of running a spectral scan on the calibration standard to show the resolution when the instrument is questioned, then another scan can be run to revert to a manual slit adjustment until the instrument slit program defect is corrected. (JDC)

Fat Embolism in Fatal Automobile Accidents—Robert M. Greendyke, *Journal of Forensic Sciences*, 9 (2): 201-8 (April, 1964). One hundred twelve victims of fatal automobile accidents were studied to ascertain the incidence and significance of fat embolism occurring in association with extensive skeletal fractures. Nineteen percent of victims dying in accidents showed a minor degree of pulmonary fat embolism, whereas 86 percent of patients dying sometime after arrival at a hospital showed extensive pulmonary fat embolism. Fat embolism was thought to be a major cause of death in 9 patients, all of whom exhibited massive pulmonary involvement and 3 of whom exhibited cerebral fat embolism. More clinical attention to the possibility of fat embolism seems indicated in patients with skeletal fractures. (WEK)

Theoretical Explanation of Multiple Intracerebral Hemorrhages in Closed Head Trauma—Alfred Angrist and Sanford Edberg, *Journal of Forensic Sciences*, 9 (2): 236-43 (April, 1946). Alternating waves of increased and decreased pressure were demonstrated by rapid motion pictures and recorded in a skull artefact with

simulated brain contents after impact. These findings offer a theoretical explanation for some of the deeply placed multiple focal petechial and larger hemorrhages in closed head injury. The role of this mechanism in concussion should be explored by finer, so-called molecular, studies in an equivalent artefact. (WEK)

Identification of Glass Fragments—Herbert L. MacDonell, *Journal of Forensic Sciences*, 9 (2): 244-54 (April, 1964). Several methods have been outlined for the determination of chemical composition and measurement of physical properties of glasses. When these data are obtained on glass fragments it is usually possible to predict the original source of the fragment based upon conventional rules of glass application. The more widespread usage of various glass formulations suggests that such information will be of greater significant value to the forensic scientists in those cases wherein broken glass is involved. (WEK)

The Quantitative Determination of Ethanol and Other Volatile Substances in Blood by Gas-Liquid Partition Chromatography—Donald W. Hessel, *Journal of Forensic Sciences*, 9 (2): 255-64 (April, 1964). A gas chromatographic method for the quantitative determination of volatile toxic substances such as methanol, ethanol, isopropyl alcohol, and acetone in blood is described. Ethyl acetate was used as an internal standard. (WEK)

Bone Fractures Produced by Bullets—Donald F. Huelke, *Journal of Forensic Sciences*, 9 (4): 461-9 (October, 1964). A study of bullet-bone fracture phenomena. Bullet impacts to the distal end of the dry femur produced a "drill hole" fracture, a smooth walled tract through the bone. Cadaver specimens showed many fractures about the exit hole of this area. Shaft impacts caused much shattering of the bone with "butterfly" fragments being produced on the sides of the shaft at right angles to the bullet tract. Bullet impacts to cadaver limbs show the same type of fractures, thus complementing the results of the bullet impacts to the dry and cadaver bones. (WEK)

Lethal Intoxications by Volatiles: Methods and Results—Andreas Maehly, *Journal of Forensic Sciences*, 9 (4): 470-6 (October, 1964). In classical toxicology, poisonous substances can be divided into three groups according to analytical tech-

niques: volatiles, extractables, and mineral poisons with many overlaps.

The most common volatiles are gases, alcohols, carbonyl compounds, polyhalogenated aliphatics, aromatic hydrocarbons, and volatile bases with some exceptions. Several analytical methods are suggested for the various groups of volatiles. (WEK)

Handwriting Identification and Graphology—Jan Beck, *Journal of Forensic Sciences*, 9 (4): 477-84 (October, 1964). A brief report intended to shed some light on just what it is that handwriting identification and graphology might have in common. The author admits there are a lot of questions about graphology that remain unanswered. He hopes the Questioned Documents Section of the Academy will do two things to help answer these questions—one, bring a representative practitioner of the European school to this country to address the group, and two, undertake its own study and report the findings to the section. (WEK)

Postmortem Vitreous Glucose Determinations—Willim Q. Sturmer, *Journal of Forensic Sciences*, 9 (4): 485-91 (October, 1964). A series of cases analyzed for vitreous sugar values demonstrates both stability and reliability when compared to simultaneous determinations in blood. A more accurate indication of glucose metabolism at the time of death can be obtained with the use of this medium. (WEK)

Murder and Attempted Murder—Practical Hints for Psychiatric Testimony—Werner Tuteur, *Journal of Forensic Sciences*, 9 (4): 492-500 (October, 1964). The paper restricts itself to practical hints regarding psychiatric testimony in cases of murder and attempted murder. It deals with the technicalities of court appearances and the composing of workable and understandable reports in such cases. They must be kept free from technical terms, yet must not be oversimplified, must be comprehensive and able to press forward to a lay public the issue at stake: the truth.

Individual, comprehensive reports on the cases tabulated in this paper are available from the author on request. (WEK)

Mercury Levels in Normal Human Tissue—Spectrographic Determination of Mercury in

Tissues—Leo A. Dal Cortivo, Sidney B. Weinberg, and Philip Giaquinta, *Journal of Forensic Sciences*, 9 (4): 501-10 (October, 1964). A procedure whereby mercury is first concentrated on copper dust and subsequently determined spectrographically has been improved and adapted for analysis of the metal in normal human tissues. Sensitivity and reproducibility of the method and recovery of mercury from tissues are discussed briefly. Levels found in presumably normal human kidneys and other organs are presented and compared with data appearing in the literature. (WEK)

Forensic Applications of the Electron Microprobe—William P. Whitney and Herbert L. MacDonell, *Journal of Forensic Sciences*, 9 (4): 511-9 (Oct., 1964). The electron microprobe is a relatively new addition to the ever-expanding field of scientific instrumentation. It can detect and yield semiquantitative data for any element heavier than sodium in a wide variety of matrices including biological specimens. Results obtained on paint chips have demonstrated one forensic application for which this instrument is well suited. Two other examples of related research were also discussed. The authors suggest that as the electron microprobe becomes more generally available to the forensic scientist, there will no doubt be many more areas of investigation which will find practical applications for this instrument. Identification of trace evidence may be especially worthwhile due to the ability of this instrument to analyze extremely small samples. The extent to which diffusion measurements may find application in forensic science is, as yet, relatively unexplored. (WEK)

Organization, Study, and Use of Fired Standards—John G. Sojat, *Journal of Forensic Sciences*, 10 (1): 1-22 (January, 1965). A brief review of research into the matter of class characteristics of firearms reference standards. The author describes his method in acquiring and recording data on rifling and reproduction of characteristics on fired cartridge cases. The purpose of the paper is to emphasize that such research has far reaching importance in identification work itself in addition to its limited application in the advance determination of the make and model of weapons. (WEK)

A Deep Look into Typewriter Alignment—Joe Nemecek, *Journal of Forensic Sciences*, 10 (1):

23-33 (January, 1965). The author, a mechanic expert in typewriter repairs now in law enforcement, presents a detailed discussion of the side effects of mechanical failures and ills as found in standard and portable typewriters. (WEK)

The Colorimetric Determination of Blood and Breath Carbon Monoxide—Milton Feldstein, *Journal of Forensic Sciences*, 10 (1): 35-42 (Jan., 1965). A colorimetric procedure for the accurate determination of carbon monoxide in air and in combustion effluents has been adapted to the determination of carbon monoxide in blood and breath samples. The method is based upon the reaction of carbon monoxide with the alkaline solution of the silver salt of para sulfaminobenzoic acid. Concentrations of CO from 5 ppm to 1800 ppm can be measured with an accuracy of 95 plus or minus 5%. (WEK)

The Determination of Blood Carbon Monoxide by Infrared Spectrophotometry—Milton Feldstein, *Journal of Forensic Sciences*, 10 (1): 43-51 (Jan., 1965). A procedure has been described whereby carbon monoxide present in blood is extracted by treatment with sulfuric acid in a standard 100 ml. syringe. The gas is transferred to a 0.6 meter path length infrared gas cell, and absorbance of carbon monoxide at 4.6 microns is measured. The extraction is complete, and results of analyses agree with the gasometric procedure. The entire procedure takes less than 5 minutes per analysis, exclusive of shaking time, and a minimum of 12 samples per hour may be analyzed. (WEK)

Individualization of Glass Specimens—David Q. Burd, and Roger S. Greene, *Journal of Forensic Sciences*, 10 (1): 52-9 (January, 1965). Discussion of a refined technique in determination of refractive index and density of glass specimens. Improvement in accuracy reported by use of an aqueous salt solution instead of the organic mixtures such as bromoform-bromobenzene heretofore used. (WEK)

The Use of Activation Analysis in Procedures for the Removal and Characterization of the Surface Contaminants of Hair—L. C. Bate, *Journal of Forensic Sciences*, 10 (1): 60-72 (January, 1965). The results obtained from hair washing studies show that detergents are much more effective in cleaning hair than organic washing agents. A nonionic detergent is recommended for

laboratory hair washing because (1) it is equally effective as an ionic detergent (shampoo) in removing the surface contamination from the hair, and (2) there is essentially no residual sodium left on the hair to interfere with the measurement of the Al, V, Mn, and other short half-lived trace elements since the hair for these elements must be cleaned before irradiation. (WEK)

Determination of Alcohols in Body Fluids by Gas-Liquid Chromatography—John B. Freudiger and John A. Vignau, *Journal of Forensic Sciences*, 10 (1): 73-6 (January, 1965). A rapid method for the determination of alcohols in body fluids by gas-liquid chromatography. It resolves the alcohol such as methyl alcohol, ethyl alcohol, and isopropyl alcohol and eliminates any interference from acetone. (WEK)

Synthetic Signatures—Gordon R. Stangohr and Edwin F. Alford, Jr., *Journal of Forensic Sciences*, 10 (1): 77-85 (January, 1965). A discussion of various methods of producing synthetic signatures. Because reproduced signatures are extensively used in the business world, they are sometimes the object of investigative query when used for unauthorized or unlawful purposes. In all cases, findings should be predicted upon examination of the original writings. In making technical examinations regarding any type of reproduced signatures, there must be a keen awareness of the limitations imposed by various reproduction processes and extreme caution is necessary. (WEK)

Counter-Irritation Marks Produced by Traditional Chinese Medical Practice—E. B. La'Brooy, *Journal of Forensic Sciences*, 10 (1): 94-102 (Jan., 1965). The practice of pinching and scratching as a means of counter-irritation and resuscitation as utilized in the traditional system of Chinese medicine is described. Attention is drawn to the similarity between some of the lesions produced and those resulting from assault and throttling. The nature and distribution of these therapeutic injuries and their distinction from homicidally inflicted wounds is described. (WEK)

Applied Uses of the 35mm Camera In Document Examination—Joseph Tholl, *Journal of Forensic Sciences*, 10 (1): 86-93 (January, 1965). A dis-

cussion of the value and utility of the 35mm camera. (WEK)

Suicide and Criminality—Jacob Tuckman and William F. Youngman, *Journal of Forensic Sciences* 10 (1): 104-7 (January, 1965). One hundred and seventy-two suicides were compared with a matched control group of 148 persons who died from natural causes on four aspects of criminal behavior: (1) police record; (2) number of arrests; (3) seriousness of the charges; and (4) severity of the sentences. No significant differences between the two groups were found for any of the four measures. (WEK)

Use of Diapositives in Document Examination—Ronald M. Dick, *Journal of Forensic Sciences*, 9 (4): 520-7 (October, 1964). The purpose of this paper is to discuss another technique which can be utilized in developing and demonstrating the latent evidence which may be incorporated in a document under examination, i.e., the use of diapositives (positive photographic transparencies). Three separate cases are cited wherein this technique was utilized in reaching an opinion and in demonstrating the evidence supporting that opinion. (WEK)

Forensic Neuropathology—XII. The Alcohols—Cyril B. Courville *Journal of Forensic Sciences*, 9 (2): 209-35 (April, 1964). The effects of alcohol on the nervous system may be either acute or chronic. The acute effects occur in the form of congestion (at times with petechial hemorrhages) and edema and are usually reversible with restoration of the normal processes. When reinforced by malnutrition and vitamin deficiency, these changes are translated into cellular and architectural changes which are accompanied by more or less characteristic syndromes. Delirium tremens is associated with a widespread pyknosis and acute swelling of the various pyramidal cells of the cortical laminae. Korsakoff's psychosis and psychotic manifestations incident to postalcoholic pellagra are accompanied by a precocious and almost universal deposition of lipid material in the nerve cells of the brain and spinal cord. A frontal lobe syndrome (alcoholic pseudoparesis) results from atrophy of the dorsolateral, frontal, and central cortex. Hemorrhagic encephalopathy of the gray nuclear masses adjacent to the third and fourth ventricles and intervening cerebral

aqueduct gives rise to extraocular palsies usually associated with impairment of consciousness and disordered mentation. The peculiar syndrome known as Marchiafava-Bignani disease, with degeneration of the mid-portion of the commissural pathways (notably the corpus callosum) or symmetrical foci in the frontal cerebral centrum and middle cerebellar peduncles, results from excessive consumption of crude Italian red wine and malnutrition. The sequence of chronic alcoholism and vitamin deficiency is best seen in cases of the more common peripheral neuropathy.

The indirect effects of chronic indulgence in alcohol are typified by degeneration of the posterior and lateral columns of the spinal cord (posterolateral sclerosis) consequent to atrophic gastritis and anemia. (WEK)

[NOTE: This is the final chapter of the series by Dr. Courville. His book "Forensic Neuropathology" will be available soon through Callaghan and Company.]

Indentations and Anonymous Letters—Paul A. Osborn, *Journal of Forensic Sciences*, 9 (2): 265-70 (April, 1964). Indentations in anonymous letters are more common than some might expect. Two of these cases are described because the results of the examinations were extremely different, and each illustrates the importance of determining the full meaning of indentations in anonymous documents.

The first case is described to stress the importance of making a thorough examination of every anonymous document in each case. A study should be made not just of the handwriting or typewriting, but for every conceivable iota of evidence that may lend to the description or identification of the writer. Since doing the work in this case, it has become an automatic habit of this writer to make a general examination of anonymous letters and envelopes even before starting an examination and comparison on the handwriting or typewriting. Such an examination includes not only looking for indentations, but also traces of lipstick, an odor of cosmetics, noting the dates and times envelopes were postmarked, studying the subject matter and comparing it between letters, looking for erasures or obliterations of possible significance, etc.

The second case is mentioned to illustrate what can happen if documents in question have been carelessly handled before being examined. More

important, an examiner of questioned documents should never assume the importance or unimportance of certain documents. In the book *Suspect Documents* by Dr. Wilson R. Harrison there is described an anonymous letter case wherein indentations were proven to have been put in a letter as a misleading clue towards identifying the wrong person as the writer. (WEK)

Drinking Drivers in an Eastern Ontario City—
B. B. Coldwell and G. L. Grant, *Journal of Forensic Sciences*, 9 (2): 271-86 (April, 1964). A study has been made of the 594 drivers taken into custody by the Ottawa City Police, on suspicion of driving while impaired or intoxicated by alcohol, during the period from July 1, 1960 to June 20, 1962. The following facts emerge:

- (a) One in every five drivers was released, because of injuries or insufficient physical evidence to warrant a charge. Seventy-six percent of the charged drivers pleaded guilty; the conviction rate was 92 percent.
- (b) The majority of suspected drinking drivers were apprehended in the business districts of the city between 12 o'clock midnight and 3 a.m., on Fridays and Saturdays and during the summer and fall months.
- (c) Charged drivers under 24 and over 55 years of age, proportionately, had a greater number of collisions than charged drivers between these ages.
- (d) The number of refusals to take a Breathalyzer test increased from 7 percent in the first year to 17 percent in the second year, following the introduction of the instrument.
- (e) The maximum number of drivers had a blood alcohol level around 195 mg. %, with a mean level of 216 mg. %. The high blood alcohol concentrations found present strongly indicate that many of the drinking drivers apprehended by the police are alcohol abusers and have a drinking, rather than a driving, problem. The relatively large number of drivers with previous convictions for impaired and intoxicated driving (at least 84 in the charged group) also supports this conclusion.
- (f) A large majority of the charged drivers states they had been drinking nondistilled alcoholic beverages in licensed premises. There is evidence indicating that charged drivers in professional and semi-professional occupations prefer to drink distilled beverages.

- (g) Persons in labouring and skilled occupation groups appeared more frequently than expected amongst the apprehended drivers, while the managerial and professional classes were underrepresented.
- (h) Data are presented which indicates that significantly higher proportion than expected old drivers in the 25 to 44 year age class appear in the apprehended group of drivers and in drinking drivers involved in accidents. Similarly, the under 24 and over 55 year age classes appear less frequently than expected in both groups. (WEK)

Principles of Evidence Evaluation—A Symposium—16th Annual Meeting of the American Academy of Forensic Sciences, *Journal of Forensic Sciences*, 9 (4): 413-55 (October, 1964).

1. *An Inquiry into the Nature of Proof—The Identity of Fingerprints*—James W. Osterburg, 9 (4): 413-27. Fingerprints were chosen for the first paper for several reasons: familiarity of most people with fingerprints; the surprise that there is an area of doubt concerning their identity in limiting situations; and the simplicity of the details used to determine identity yet the wide disagreement concerning the significance of these details when judged subjectively. If, in the simplest problem of identity, the problem is more complex than many seem to realize, how much more occult is the evaluation of details in other areas of criminalistics? The need for data gathering and interpretation following statistical principles of experimental design should become quite clear. When the necessary research is accomplished the administration of justice will benefit immeasurably.

2. *The Principles of Evidence Evaluation as Applied to Firearms and Tool Mark Identification*—A. A. Biasotti, 9 (4): 428-33. A review of the present status of evidence evaluation in firearms and tool mark identification; no attempt made to deal with the fundamental philosophical or mathematical concepts of probability. While we have the necessary theory for formulating objective criteria of identity, we lack the fundamental statistical data needed to develop verifiable criteria which can be applied to the solution of practical problems with a degree of confidence imputed by a true science.

3. *Evidence Evaluation and Problems in General Criminalistics*—Paul L. Kirk and Charles R. Kingston, 9 (4): 434-44. The list of types of

evidence that still requires precise evaluation could be indefinitely extended, and would, in the end, include every type of evidence known. The omissions and errors of the past in this area of criminalistics are past, and should be remembered only as they may serve as a guide for the future. The total task is enormous, and will not be completed for a long time. However, with modern computers, it is now possible to process masses of data very rapidly, and the opinion must be expressed that increased use of computers in solving our unique problems will expand rapidly. This leaves to the criminalist the largest task, that of collecting the basic data.

4. *The Expert and Legal Certainty*—Edwin C. Conrad, 9 (4): 445-55. The expert bears a heavy burden in his court appearances. He does not comprehend that science is science and law is law, and never the twain shall meet. The author observes that the expert witness must stand quite a bit of abuse from the modern sergeants-at-law.

1. He must take a position for or against a party and therefore is placed in a posture of bias right from the very start.
2. He cannot pursue his own methods of scientific investigation but must conform to truth as molded by lawyer-made artificial rules of evidence.
3. He cannot ask questions himself to bring out pertinent points but must rely on the evidence the parties produce.
4. He cannot express his own opinion freely, even though he is sworn to tell the truth, unless he meets the legally acceptable standards of determining the truth.
5. He must, in many cases, answer a stupid, hypertechnical, hypothetical question which distorts the whole picture, when his professional conscience dictates his answering otherwise.
6. He cannot object to the questions because that is beyond his jurisdiction.
7. His views may not, and often are not, treated with the respect to which he as a scientist is accustomed.
8. Cross-examination of an expert may find his integrity and intelligence impugned.
9. His findings, learning, and conclusions will be ridiculed by the sergeants-at-law, whose power of confusion and lack of training in the scientific field are hallmarks of their profession.
10. He learns early in his practice that legal rules of evidence are not and never will be based on principles of science.

5. *The Role and Rights of the Expert Witness*—Charles M. Cook. The author, in preparation for this discussion, requested the view of some academy members on what the article should cover. Two basic questions evolved.

1. Are the intimate details of my investigations, tests and conclusions available to the opposing party through discovery procedure prior to trial or are my communications to the attorney employing me, privileged?
2. May I answer either yes or no without qualification when asked a question on cross-examination and the Judge so instructs me to answer?

The author discusses answers to both questions. (WEK)

Further Thoughts on Fingerprinting—K. S. Puri, *International Criminal Police Review* 178: 130-34 (May, 1964). A discussion of an apparent variable in two prints from the same fingers. (OH)

Motor Vehicle Thefts in Canada—Donald N. Cassidy, *International Criminal Police Review* 178: 135-43 (May, 1964). A statistical study of the motor vehicle thefts in Canada. (OH)