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## Police Science Technical Abstracts and Notes

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## POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

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Edited by  
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### Abstractors

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**The Story of Ignition**—H. C. Logan, *The American Rifleman*, 103: 21-5 (January, 1955). The development of the ignition of powder charge from a burning stick to the present self-contained anvil primers is discussed. The article is well illustrated with line drawings. (JDN).

**Unusual Firearms**—Anon., *Bulletin, Bureau of Criminal Investigation*, New York State Police, 19 (2): 6-7 (1954). A weapon manufactured for the OSS during World War II is described. "The Stinger" resembles a short fountain pen and is loaded with a single .22 caliber cartridge. After firing the weapon is discarded. (JDN).

**The Police and Conditional Release**—J. Nepote, *International Criminal Police Review*, No. 82: 258-61 (Nov., 1954). It is the opinion of the author that conditional release should be the joint responsibility of the penologist and the police. The police in the area to which the prisoner will return should be questioned as to the existence of influences likely to hinder rehabilitation. Nepote feels that prison officials are in a better position to determine the suitability of the time of release than is a board of experts. (JDN).

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**Determination of Drugs by X-Ray Diffraction, Ultraviolet, and Infrared Spectrophotometry and by Microchemical Color and Crystal Reactions**—Royal Canadian Mounted Police Crime Detection Laboratories, Seminar No. 1. The following papers were presented at the Regina, Saskatchewan Laboratory, April ninth and tenth, 1953:

1. "Method of Drug Analysis Employed in the R. C. M. P. Laboratory"—W. Radyck.

2. "The Ultraviolet Absorption Spectra of Compounds of Toxicological Interest"—H. Ward Smith and J. R. MacDougal.

3. "The Identification of Drugs by Means of Color and Crystal Tests with Special Reference to Synthetic Narcotics and Barbiturates"—Charles G. Farmillo, P. M. L. Oestreicher, and Leo Levi.

4. Card System for Collection of the Data from Microcrystal and Color Reactions.

5. "Drug Identification by Means of Infrared Spectroscopy"—Leo Levi, Charles E. Hubby, and Charles G. Farmillo.

6. "X-Ray Diffraction Patterns Used in Drug Identification"—Charles G. Farmillo.

Photomicrographs, spectrophotometer tracings and X-ray diffraction patterns accompany the report. (JDN).

**A Modified Method for the Enzymatic Microdetermination of Ethanol**—N. G. Brink, R. Bonnichenen, H. Theorell, *Acta Pharmacologica*, 10: 223-236 (1954). The specific enzymatic microdetermination of ethanol by using horse-liver alcohol dehydrogenase and based on the spectrometric measurement of the rate of formation of reduced diphosphopyridine nucleotide (DPNH) has been modified to measure the

DPNH at the completion of the reaction. The authors claim that the method is simple, easy to carry out, and is applicable to amounts of ethanol in the range of 1 to 10  $\mu$ g, which is 10 times more sensitive than the original method. (SK).

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**Alcohol in Post-Mortem Specimens; Comparative Determinations by Widmark's and Zeisel-Fanto's Methods and by the A.D.H. Method**—R. Bonnichesen, F. Halstrom, K. O. Moller, H. Theorell, *Acta Pharmacologica et Toxicologica*, 10: 101-112 (1954). The authors made a comparative study between the results obtained on post-mortem specimens using the Widmark, Zeisel-Fanto, and the A.D.H. method. The details are described for the Zeisel-Fanto method. A brief description is given of the A.D.H. principle reactions. It was found by the authors that the Widmark method is unsatisfactory on cadavers more than 48 hours old. However, the Zeisel-Fanto and the A.D.H. method gave identical values even for purified material. (SK).

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**The Human Skeleton in Forensic Medicine, Part I**—W. M. Krogman, *Postgraduate Medicine*, 17: A-48, A-50, A-52, A-54, A-56, A-60 (Feb. 1955). The determination of age and stature from skeletal remains is discussed. (JDN).

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**Post-Mortem Diagnosis of Diabetes Mellitus**—R. S. Fisher, *Postgraduate Medicine*, 17: A-26, A-28 (Jan. 1955). The determination of diabetic acidosis in postmortem urine, blood, and cerebrospinal fluid is discussed. A highly positive Benedicts test and large amounts of ketones in the urine are considered to be the best indications of probably diabetic acidosis prior to death, since sugar is absent in urine of starvation. (JDN).

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**Barbiturates**—R. S. Fisher, H. C. Freimuth, *Postgraduate Medicine*, 17: A-28, A-30 (Jan., 1955). The significance of the concentration of barbiturates in blood can be determined only if the following variables are considered: Identity (potency) of the particular compound; duration of poisoning, concomitant alcoholism,

or the presence of other central nervous system depressants; complications such as respiratory infection or renal failure. Blood concentration levels above 2.0 mg per 100 cc of a short-acting barbiturate or 10.0 mg per 100 cc of a long-acting barbiturate are not positive indication of a lethal dose. (JDN)

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**Deaths During Fires**—H. C. Freimuth, *Postgraduate Medicine*, 17: A-30 (Jan., 1955). Significant elevation of carbon monoxide levels in the blood of fire victims will indicate that the person was alive during the fire and inhaled CO-laden atmosphere. Death before fire occurs will show only traces to normal limit of six percent. (JDN).

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**Paper Chromatography Applied to the Detection of Opium Alkaloids in Urine and Tissues**—G. J. Mannering, A. C. Dixon, N. V. Carroll, and O. B. Coke, *The Journal of Laboratory and Clinical Medicine*, 44: 292-300 (August, 1954). Nine opium alkaloids and the morphine substitute, meperidine, have been subjected to paper chromatography and their  $R_f$  values determined, using various developing solvents and buffered papers.

A method employing paper chromatography is described which enables the detection of minute amounts of morphine in urine and tissues. (JDN).

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**The Determination of Cyanide in Biologic Fluids by Microdiffusion Analysis**—Milton Feldstein and Nick C. Klendshoj, *The Journal of Laboratory and Clinical Medicine*, 44: 166-70 (July, 1954). A rapid, sensitive method for the determination of cyanide in biologic samples is presented. The method is based upon the diffusion of cyanide from the outer chamber of a Conway cell to the inner chamber, where it is absorbed in dilute alkali. The colorimetric estimation is performed by the method of Boxer and Rickards. (JDN).

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**A Rapid Method for the Estimation of Morphine**—J. M. Fugimoto, E. Leong Way, and C. H. Hine, *Journal of Laboratory and Clinical Medicine*, 44: 627-35 (Oct., 1954). A rapid extraction method for the photometric estimation

of morphine in biologic media is described. The method utilizes single extraction techniques and has a high degree of specificity for morphine. Considerable time-saving is accomplished by extracting morphine from a highly alkalized solution with n-butanol to give the major separation of the morphine from the extraneous interfering material. Subsequent extraction steps remove further interfering substances without undue loss in time or yield of morphine. A colorimetric phenol reagent is used for the final estimation of the morphine in the buffer extract. A highly specific test for morphine is also obtained by simply incorporating the ultraviolet absorption and partition ratio determinations into the general procedure. (JDN).

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**Infrared Spectra of Nicotine and Some of the Derivatives**—C. Roland Eddy and Abner Eisner, *Analytical Chemistry*, 26 (9): 1428 (September, 1954). The authors give infrared curves for nicotine and five related alkaloids showing differentiation which cannot be shown with the ultraviolet spectra. (JFW).

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**Determination of Density of Small Fragments**—William Primak and Paul Day, *Analytical Chemistry*, 26 (9): 1515 (September, 1954). A flotation method of determining density of very fine particles (in the range 40 to 100 mesh) by use of a liquid whose density and temperature coefficient are determined is described. Methods of temperature control, complication caused by the small size of the particles, contamination, and viscous motion of the particles introduce additional problems. While absolute density determinations of this type do not often confront the criminologist (police science chemist) the complications introduced by the very fine particles should be of interest to him. (JFW).

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**Analysis of Normal Human Tissue by Emission Spectrography**—Isabel H. Tipton, Robert L. Steiner, William D. Foland, Johanna Meuller, and Mary Stanley, *Analytical Chemistry*, 26 (11): 1855 (November, 1954). An abstract of this paper which was given at the Southeastern

Regional Meeting of the American Chemical Society at Birmingham, Alabama, October 21–23, 1954, indicates the authors examined eighteen different tissues from twenty-five autopsies of instantaneous deaths for nineteen elements. Zinc, copper, aluminum, and lead were found in every sample examined; cadmium in every kidney, and titanium in every lung. Antimony occurred in one sample and germanium and thallium not at all within the limits of sensitivity of the method. (JFW).

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**Ultraviolet Absorption Spectra of the Hydrolysis Products of Diethyl Barbituric Acid**—G. R. Jackson, Jr., J. R. Weschler, and R. L. Dannley, *Analytical Chemistry*, 26 (10): 1661 (October, 1954). The ultraviolet absorption spectra of the various hydrolysis products of diethyl barbituric acid are given. The authors indicate that the ultraviolet spectra of the various hydrolysis products gives an optical density not over 0.03 unit with two exceptions, and even these do not have too great an absorption at 260  $\mu$ g. Thus Goldbaum's method [Goldbaum, L. R., *Analytical Chemistry*, 24: 1604 (1952)] can be used to follow the rate of hydrolysis of barbital with an accuracy of 5 percent. (JFW).

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**Chicago's Police Force**—Thomas M. Frost, *Chicago Schools Journal*, 36 (5–6): 124–9 (January–February 1955). The author discusses the requirements for admission to the Chicago Police Department and briefly the recruit and in-service training programs. Of special interest is his discussion of the in-service program being carried on in connection with junior colleges of the Chicago area. (OH).

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**Conference on Law Enforcement Photography**—Eastman Kodak Company is sponsoring a week's conference for a select group of law enforcement personnel on the applications of photography in law enforcement work. The program includes new techniques and materials and discussion of special problems that arise in the law enforcement field. Enrollment has been limited to thirty men, and all are being urged to bring special photographic problems to these

meetings. No definite plans have been made for future conferences. (OH).

**Integrated Fire-Police Work**—*Public Management*, 14 (January 1954). Oak Park, Michigan, and New Augusta, South Carolina, have integrated police and fire services. All personnel receive training in both fields. Seven other cities are listed who have previously followed this pattern recently. Slight pay increases were made to personnel for the additional duties. Considerable overall saving in personnel and personal services budget was pointed out.

*Public Management*, 117 (May 1954). Oregon City, Oregon, population 7682, recently integrated fire and police services. Each patrol car is manned by a fireman and a police officer. They take training from each other in the two fields. Cars are combination police and fire vehicles, and they respond to fires prior to the arrival of the main fire vehicles.

A. C. Bergman, *Public Management*, 156-7 (July 1954). Oakwood, Ohio, (9691) recently completed 25 years of integrated operations of fire and police functions under a single Safety Department. This city is mainly residential, with an area of approximately three square miles. They have 31 men assigned to the department with a portion of the men assigned as "property protection" crews, who are chiefly responsible for fire fighting. They have a year around training program with outdoor demonstrations and drill in summer and four (4) hours of classroom work per week in winter months. They operate four combination cars for patrol and fire fighting, a police ambulance, and 2 triple combination pumpers. The city has a fire insurance rating of class 4, while only one other city in the population group between 5,000 and 35,000 has a class 3 or better rating. (LDA).

**Integration of Fire and Police Services**—Charles S. James, *Public Management*, 26-9 (February 1954). Integration of fire and police services is pointed out as taking place in both United States and Canada, with Quebec especially having a large percentage of cities using it. The departments do rely upon some specialization in the two fields. (LDA).

**Alcohol Breath Tests and Breath Deodorization by Chlorophyll Derivatives**—L. A. Greenberg and D. Lester, *Quarterly Journal of Studies on Alcohol*, 15: 16-20 (March 1954). A series of tests were run on control groups with and without the use of sodium potassium chlorophyllin. Four conclusions were arrived at:

1. Ingestion of 100 mg. of chlorophyllin is without effect on the concentration of alcohol occurring in the blood and the breath after the consumption of whiskey.

2. The chewing of chlorophyllin-containing-gum is without effect on the alcohol content of the breath following the consumption of beer.

3. Chlorophyllin does not interfere with the alcohol breath test.

4. The breath odor after drinking is due primarily to the presence of highly aromatic substances characteristic of each beverage. The reported deodorization of beer breath with chlorophyllin suggests that this substance neutralizes some of the characteristic aromatic substances present. (LDA).

**Police Use Motorcycles in Patrol Work**—*Public Management*, 61 (March 1954). Eau Claire, Wisconsin, (37,000) has adopted the use of three wheel motorcycles to patrol work, thus increasing coverage and reducing patrolmen. These cycles, formerly used for meter checking only, are now used for patrol work on night shifts. It is claimed their versatility fits them to patrol work formerly done by foot patrolmen. Two men now cover what five foot patrolmen formerly covered. Claims responsibility for a 37% reduction in all reported crimes in 1953 over 1952 due to the use of these cycles. (LDA).

**Packing and Handling Exhibits for Fingerprint Examination**—Royal Canadian Mounted Police, Identification Branch. A 16mm color and sound movie depicting the proper handling and packaging of evidence to be processed for latent fingerprints. Such common items of evidence as firearms, drinking glasses, bottles, and pieces of plate glass are discussed. The film is an excellent example of the value of color motion picture as a training media. (JDN).

## New Products

EDITOR'S NOTE: It is the purpose of this additional service to the readers of the Journal to call their attention to new products deemed helpful in police fields. The mention of any product in this Journal, however, is not to be construed as a recommendation by the Journal.

Miniature Tape Recorders—The Mohawk Business Machines Corp., 944 Halsey Street, Brooklyn 33, N. Y., announce availability of the "Midgetape Recorder",  $8\frac{1}{2} \times 1\frac{7}{8}$ ", weight

$3\frac{1}{4}$  lb., battery operated, cartridge loaded, no tape threading required. Records for one hour and simultaneously erases old material as new recordings are made. (WEK).

Transistor Radio—Regency Division, Industrial Development Engineering Association, Inc., 7900 Pendleton Pike, Indianapolis, Ind., announce new pocket sized tubeless radio  $3" \times 5" \times 1\frac{3}{4}"$ , weight less than 12 oz. (WEK).

## FOREIGN LANGUAGE PERIODICALS AND ARTICLES OF INTEREST IN THE FIELD OF POLICE SCIENCE\*

Compiled by Kurt Schwerin†

ALGEMEEN POLITIEBLAD VAN HET KONINKRIJK DER NEDERLANDEN. The Hague. 103d year, no. 25, Dec. 11, 1954.

H. Willems van Beveren, *Over schrijffproeven . . . en nog wat* (On handwritings . . . and some more) (p. 467-71).—W. Faber, *Het wegverkeer in Parijs: Maatregelen ter regeling en beveiliging* (The traffic in Paris: Steps for regulation and security) (p. 472-77).

ANNALES DE MÉDECINE LÉGALE ET DE CRIMINOLOGIE. Paris, 34th year, no. 1, Jan.-Feb., no. 5, Oct.-Nov. 1954.

G. C. Lairy-Bouines and J. Benbanasté, *Quelques aspects électroencephalographiques particuliers des Syndromes post-traumatiques* (Some electroencephalographic aspects of late post-traumatic syndromes) (no. 1, p. 3-11).—M. H. Fischgold, *Difficultés de l'emploi de l'électroencephalographie dans l'expertise des anciens traumatismes du crâne* (Difficulties of employing electroencephalography in the appraisal of old injuries of the skull) (p. 23-40).—P. Claus and F. Thomas, *Empoisonne-*

*ment criminel par bonbon au chocolat rempli d'acide cyanhydrique* (Criminal poisoning by candy or chocolate filled with hydrocyanic acid) (no. 5, p. 203-09).

LA GUISTIZIA PENALE. Rome. Vol. 59, no. 9, Sep. 1954.

O. Sivieri, *La Perizie calligrafiche non servono più a nulla?* (Is calligraphic expert opinion no longer helpful?) (Sec. I, col. 302-04).

INTERNATIONAL CRIMINAL POLICE REVIEW. Paris. (English edition) Ninth year, nos. 80-83, August-Dec. 1954; tenth year, no. 84, Jan. 1955.

R. Deguent, *The results of tests made with radioactive rubidium 86* (no. 80, p. 194-96).—J. H. Rogers, *Forgery of Australian ten pound notes* (p. 197-204).—Stanley S. Smith (Harrisburg, Pa.), *A method of comparing written documents* (p. 205-16).—E. Martin, *Chromatographic microanalysis of dried ink* (no. 81, p. 232-38).—A. K. Ghosh, *Boundaries and locations of police stations* (p. 239-41).—*The Vienna Institute of Criminology* (p. 245-46).—J. Népote, *The police and conditional release* (no. 82, p. 258-60).—H. Eydoux, *The air police in France* (p. 261-65).—R. F. Rodgers, *Calculation and crime* (p. 266-71).—L. Lerich, *Photography in the detection of forgery by addition*

\* All periodicals listed are available in the Elbert H. Gary Library, Northwestern University, School of Law, 357 East Chicago Ave., Chicago.

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(p. 272-74).—Carlos Eboli, *The smoking of latent fingerprints on metal and glass and their resistance to high temperatures* (p. 275-81).—*Progress reports of the 23d Meeting of the ICPC General Assembly* (Rome, Oct. 9-14, 1954) (no. 83, p. 291-331). Supplement to no. 83: *Quarterly List of Selected Articles* (Arranged by Subject), 6th year, no. 21 (July-Sep. 1954).—J. H. Rogers, *Thallium poisoning: The case of Caroline Grills* (no. 84, p. 11-16).—A. Bessemans, *Triple verification of the age of a questioned document* (p. 17-24).—A. Trens, *Divining as an aid to the police* (p. 3-10).

KRIMINALISTIK. Hamburg. 8th year, nos. 9-12, Sep.-Dec. 1954 (including Supplement "Kriminalwissenschaft"); 9th year, nos. 1-2, Jan.-Feb. 1955.

H. J. Starck, *Zur papierchromatographischen Untersuchung von Schreibstoffen und Schriften* (The paper chromatographic examination of inks and writings) (no. 9, supp. p. 85-88).—K. Thoma, *Eine einfache Methode zur Färbung der Oberfläche des menschlichen Kopfhaares* (A new method for coloring the surface of human hair) (p. 91-92).—W. Katte and W. Specht, *Analytische Beiträge zur Erkennung und Beurteilung autoxydabler Öle in Brandresten* (Analytical contributions to the examination of autoxidizable oils in fire residues) (no. 10, supp. p. 93-100).—S. Oehlinger, *Das Elektronen-Mikroskop in der Kriminalwissenschaft* (The electron microscope in criminal science) (p. 101-104). Remarks to this article, by K. Thoma, in no. 11, supp. p. 113.—Franz Angermayer, *Ist der Beweiswert der T.O.-Fingerabdrücke erschüttert?* (Is the proof by fingerprint at the scene of the crime without value?) (Special supplement, 8 p.).—Roland Grassberger, *Die Psychologie der Haus-durchsuchung* (The psychology of house search) (no. 1, p. 2-6).—Rolf Holle, *Die polizeiliche Kriminalstatistik 1953* (Criminal police statistics, 1953) (p. 7-11).—Max Frei, *Spuren-Untersuchungen bei Sachbeschädigung* (Examination of traces in damage to property) (no. 2, p. 54-56).—A. Nickening and Dr. Schöntag, *Möglichkeiten kriminal-technischer Beweisführung* (Possibili-

ties of criminological proof) (p. 56-62).—A. Steiner, *Beweismittel "Schrift" in Theorie und Praxis* (Typescript a proof in theory and practice) (p. 62-64).—Gerd Schaidt, *Eine neue Methode zur Darstellung der Haarcuticula* (A new method to represent cuticles of the hair) (no. 12, supp. p. 127).—S. Berg and G. Schaidt, *Methodik und Beweiswert des Biss-Spurenvergleiches* (Methodology and probative value of comparing the marks of bites) (no. 12, supp. p. 128-30).—Max Frei, *Mikrobiologische Kulturverfahren im Dienste der Brandursachen-Forschung* (Micro-biological cultures in the service of fire investigations) (p. 131-32).

DIE NEUE POLIZEI. Munich. 8th year, nos. 9-10, Sep.-Oct. 1954.

Walter Knögel, *Der Lügendetektor* (The lie detector) (no. 9, p. 150-52).—No. 10: Special issue: *Photo und Optik im Dienste der Polizeitechnik* (Photography and optics in the service of police technique). Introduction by Franz Meinert; articles by Walter Specht, Werner Katte, Wilhelm Ruml.

NORDISK KRIMINALTEKNISK TIDSKRIFT. Stockholm. 24th year, nos. 4-9, 1954.

Svante Odén, *Nya riktlinjer för framkallning av latent fingeravtryck på papper och liknande material* (New directions for determining apparent fingerprints on paper and similar materials) (no. 4, p. 37-43).—A. Bangsgaard, *Fingeraftryksfremkaldelse med radioaktivt pulver* (The investigation of fingerprints with radioactive powder) (no. 8, p. 99-102).—H. J. Birkelund, *Fingeraftrykssystemer* (Fingerprint systems) (no. 9, p. 109-18).

POLITIEMBTSMENNENES BLAD. Oslo. 29th year, no. 11, Nov. 1954.

Ulrik Borch, *Noen ord om film, tegneserier og ungdoms-kriminalitet* (Some remarks on film, comic books and juvenile delinquency) (p. 208-11).

TIJDSCHRIFT VOOR STRAFRECHT. Leiden. Vol. 63, no. 2, 1954.

C. J. F. Böttcher, *Theorie en praktijk van de gerechtelijke schriftvergelijking* (Theory and practice of legal examination of handwritings) (p. 77-131).