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Police Science Technical Abstracts and Notes

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POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

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EDITORIAL NOTE: Although this section of the Journal is devoted to the abstracting of matters of technical interest, the Editor wishes to take leave of this policy to call the readers' attention to the Statement of Director J. Edgar Hoover before the Special Committee to Investigate Organized Crime in Interstate Commerce on March 26, 1951. It is believed that herein is the crux of our present crime problem accurately and concisely stated; a message to be read from every pulpit, teaching platform, and judicial bench in the nation. It places the responsibility squarely upon the shoulders and hearts of the people to provide for proper law enforcement through local agencies. This message is reprinted in the *FBI Law Enforcement Bulletin* of May, 1951, 20:1-5.

The American Academy of Forensic Sciences—The American Academy of Forensic Sciences held its third annual meeting March 1, 2, and 3, 1951, in Chicago, Illinois. Thirty-seven papers were presented in addition to three sectional meetings in Toxicology, Pathology, and Psychiatry. Proceedings of the entire meeting were transcribed and arrangements are being made at present for the publication of this record. The fourth annual meeting has been arranged for March 6, 7, 8, 1952 at Atlanta, Ga. Dr. A. W. Freireich, 180 Hempstead Avenue, Malverne, New York, Chairman of the Program Committee, is accepting papers for consideration at the next meeting.

Arson Detection and Investigation—A Selection of Papers Presented at Sixth Annual Seminar and Training Course in Arson Detection and Investigation may be obtained from the International Association of Fire Chiefs, 22 East 38th Street, New York 16, N. Y. The following papers are reproduced: *The Art of Preparing Effective Reports and Statements* by W. J. Austin. *Circumstantial Evidence in Arson Cases* by W. C. Braun. *Fraud Fire Problems* by Abner Goldstein. *Developing Investigative Leads from Observations* by George Hood. *Arson Motives and Resultant Investigative Action* by E. A. Wakefield.

Fluorescence Techniques in Law Enforcement—A general review of the practical applications of fluorescence to crime detection is given by Charles Weeks in the *Fingerprint Magazine*; 32:15-19 (March, 1951):

Specialization in Police Work—An article by R. E. Clift in the *Traffic Digest*, 5: (3) 4-5 (March, 1951) deals with the controversy of specialization vs. multiplicity in police work. Clift points out that specialization is a poor background for supervisory personnel and it creates rivalries between different units within the department.

Incendiary Mixture—*Chemical Abstracts*, 45:1770 describes an Italian patent, 446,010, concerning an incendiary mixture, which consists of powdered magnesium, anhydrous copper sulphate, dry ammonium nitrate, and potassium chlorate. Water initiates the reaction.

Observations on Misplaced Deltas—Deviations from the normal position of the delta above the phalange articulation in whorl patterns are reported by

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G. T. Mairs in the *Finger Print Magazine*, 32:15 (Feb., 1951). Mairs found two whorl patterns with external deltas below the phalange articulation. This is another example of the necessity for finger print experts to take print patterns extending below the phalange articulation.

Infrared Spectrophotometer—According to a note in *Better Analysis*, 2:(1) 4 (1951), the Medical Examiner's Office of New York has recently acquired a Baird Associates Infrared Recording Spectrophotometer. The instrument has shown its possibilities in medico-legal problems by differentiating procaine from pantocaine in a recent case. These compounds are chemically related and would not be as readily differentiated by chemical means as by the infrared method.

Pick Up The Trail With Plaster Casts—A review of the procedure to be followed in making plaster casts is related in the *FBI Law Enforcement Bulletin*, 20:6-10 (May, 1951). A word of caution is given to "Keep the crime scene clear of all persons until an organized crime scene search can be made. It is no more reasonable to allow persons to walk or drive into the crime scene area than it would be to allow them to handle a murder weapon which may bear a murderer's fingerprints."

Use of Stomach Contents to Establish Death Situation—In "Notes from the Medical Examiner" in the *New England Journal of Medicine*, 244:34-6 (Jan. 4, 1951) J. W. Spelman describes an investigation in which the stomach contents of a baby, age seven days or less, contained milk corresponding to that of human mature milk from a mother who has nursed for nine months or more. This finding was based upon the comparisons of ash content and calcium-phosphorus ratio of the stomach contents with the same factors in various other types of milk. Only in the class of human mature milk (1-9 mo.) could similar conditions be found. This absolved the baby's mother of infanticide.

Use of Infrared Spectra in the Qualitative and Quantitative Determination of Alkaloids—The usefulness of the Infrared Spectrometer for qualitative and quantitative determinations of alkaloids in police laboratories is indicated by studies of G. B. Pleat, J. H. Harley, and S. E. Wiberley published in the *Journal of the American Pharmaceutical Association*, 40:(2) 107-10 (Feb. 1951). All of the 22 alkaloids studied could be identified by band structure. Quantitative determinations can be based upon the apparent linear relationship of absorbency to concentration as shown by graphs of these factors determined with six common alkaloids.

Water-Soluble Embedding Materials for Botanical Microtechnique—R. L. Van Horne and L. C. Zopf investigated the use of water-soluble "Carbowax" as an embedding medium. Their report in the *Journal of the American Pharmaceutical Association*, 40:(1) 31-4 (Jan., 1951) indicates that this method is faster and eliminates much of the shrinkage associated with paraffin embedding. "Carbowax" can be obtained in various degrees of hardness. Experimentally the procedure is to dehydrate with increasing strength solutions of polyethylene glycol 400W and embed in three changes of a mixture of "Carbowax" 4000, 15-25%, Tween 20, 1-2%, and "Carbowax" 1,540 as remainder. Only woody tissue requires longer than twelve hours for complete infiltration. Rapid cooling in refrigerator keeps down crystal size, and the specimen must be stored away from moisture.

A Direct-Writing Pneumotachograph—Leslie Silverman describes an instrument in *The Journal of Laboratory and Clinical Medicine*, 36: (1) 158-62 (July, 1950) which should be of interest to lie detector experimentors. Silverman uses an RCA No. 5734 tube as an electromechanical transducer, a means of converting mechanical movement into electrical change. The 5734 tube, which measures .88" by .33" diameter, has a movable plate which provides a linear electrical response up to 12,000 cycles. The output of the bridge network containing two RCA No. 5734 tubes is run through three stages of amplification and then into a recorder. The recording of other biological responses are under investigation; this may provide a blood pressure recording free from discomfort.

Origin of Bullet Markings—An article by Cpl. E. Cross of the R.C.M.P. Crime Detection Laboratory [*R.C.M.P. Quarterly* 16:221-29 (Jan. 1951)] gives an excellent description of various markings found on fired bullets. Each type of mark and the means by which it is produced is described, and many are illustrated by drawings. Among those described are die markings, cannellures, and stab crimps present on unfired ammunition; scrape marks produced by the cartridge neck and stab crimps; axial engravings; stripping marks; grooves and carbonaceous incrustations produced by escaping hot gases; shearing marks; land and groove engravings; and others. (Submitted by David Q. Burd, California State Bureau of Criminal Identification and Investigation)

Coatings—An article on Coatings by T. G. Rochow and R. W. Stafford is presented as part of a series called the "Third Annual Review of Analytical Chemistry" in the *Analytical Chemistry*, 23:(2) 212-6 (Feb., 1951). All of the recent literature pertaining to coatings is discussed. The article is divided into six sections: General Analytical Schemes for Organic Coatings; Resinography and Depiction of Macromolecules; Specific Classes of Polymeric Materials, Oils, Pigments, Specific Constituents. Since forensic chemists are frequently called upon to compare paint specimens, this article is fundamental. (Submitted by Clemens R. Maise, St. Louis Police Laboratory)

Pharmaceuticals and Natural Drugs—Another in the "Third Annual Review Series," this article by W. W. Hilty and M. M. Marsh discusses recent advances in the drug field. Of special interest to forensic chemists are the discussions on Alkaloids and Related Substances. Analytical methods are briefly discussed under three categories: Chemical Methods; Physicochemical Methods; and Physical Methods. A bibliography of 174 references makes this article a valuable contribution. This article is to be found in *Analytical Chemistry*, 23:(2) 237-43 (Feb., 1951). (Submitted by Clemens R. Maise)

Portable Field Kit—A portable field kit developed by the New York Police Laboratory is described in *Spring* 3100, 22:14-5 (Apr., 1951). This kit weighs about forty pounds and measures 14½" x 12" x 20¼". The contents are assembled largely for the collection and preservation of fingerprints and trace evidence although some tools and a 35 mm. camera are included. It is apparently a collection of tools found from experience to be most useful at a crime scene.

Typewriter Identification—All of the factors involved in the identification of an individual typewriter are considered by Jean Gayet in "The Individual Identification of Typewriting Machines." (*International Criminal Police Review*, Nov. 1950, Dec. 1950, and Jan. 1951.) The author pays par-

ticular attention not only to the defects and their importance in an identification but also to their mechanical cause. Besides common identifying factors he discusses a number of rare or unusual mechanical faults which on those occasions when they occur are reflected in the work of the typewriter. Suggestions for preparing proper standards of comparison are included. (O.H.)

Photographic Documents—In a series of three articles in the *Professional Photographer* Ordway Hilton discusses the various uses of photography in connection with questioned document examination. The first part (March 1951: 39-41) deals with proper photographing of documents for record purposes and expert examination; the second (April 1951: 37-9) with special applications of photography for the discovery of facts contained in a document; and the final installment (May 1951: 39-40) with photography in court presentations. While the article is of special interest to the commercial photographer, police laboratory workers and investigators should find helpful information in this series.

NEW PRODUCTS

EDITOR'S NOTE: It is the purpose of this additional service to our readers to call their attention to new products deemed helpful in the police fields. Data presented will be abstracts of the manufacturer's literature or reports of demonstrations. Only those products considered most suitable to police science will be included. The mention of any product in this Journal, however, is not to be construed as an endorsement by the Journal.

Infrared Transmitting Filters—Filters, opaque to visible and ultraviolet light, with high transmission in the near infra-red have been announced by the Polaroid Corporation, Cambridge 39, Mass. The type XRX60 filter has a sharp cut-off at about 8000 Å and over 80% transmission at 9000 Å. They are obtainable mounted or unmounted in conventional sizes.

Reflection Control in Photography—The presence of high-lights on the surface of objects often interferes with the photography of fingerprints and other fine details. The Polaroid Corporation, Cambridge, Mass., recently developed a circularly polarizing filter which will eliminate this troublesome reflection. It is a combination of a polarizing filter and a quarter-wave plate which rotates the plane of the polarized incident, highlight-producing light, 90° and stops its return transmission. It does not interfere with non-specularly reflected light.

Reaction Kettles—Pyrex reaction kettles may be used in place of vacuum dessicators in the Farrel distillation set-up according to Sgt. John Williams, Missouri State Police Laboratory. The Corning Glass Co. makes Reaction Kettles in three sizes; 2,000 ml., 3,000 ml., and 4,000 ml. The cover has four openings ground to standard tapers, and the bottom has convenient straight sides and large mouth for the introduction of boards or bulky clothing.

Felsen Quadrant Culture Plate—A 94 mm Petri dish, divided into quarters by 6½ mm ridges, has been developed and is available from the Fisher Scientific Co. Such a dish will find use by Forensic Microscopists as sorting dishes where several classes of material must be segregated.

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

Compiled by
KURT SCHWERIN**

Errata: Correction of the listing in vol. 40, no. 3 (1949), p. 391, of this Journal: *Annales de médecine légale*. Paris. no. 4, July/Aug. 1949. A. Charlin, *Le problème de la narco-analyse chimique en médecine légale* (p. 161-166).—J. Trillot, *La narco-analyse barbiturique en médecine légale* (p. 166-171) (Two articles on problems of chemical narco-analysis in legal medicine).—A. Abecassis and M. Berthou, *Sur un cas d'inversion sexuelle avec travestissement* (A case of sexual inversion with transvestism) (p. 177-180).

Annales de médecine légale. Paris. no. 5, Sep./Oct. 1950, nos. 1/2-3, Jan./Feb.-March, 1951.

N. Rojas and B. Szekely, *La méthode de Szondi dans la recherche des tendances anti-sociales* (The Szondi method in the investigation of anti-social tendencies) (p. 284-289).—Dérobert and Gascoin, *Intoxication mortelle par ingestion de salicylate de méthyle* (Mortal intoxication through ingestion of methyl salicylate) (p. 289-292).—Jacques Brissaud, *Sur une hypothèse de criminogénèse* (A theory on the genesis of criminality) (no. 1/2, p. 3-25).—P. Bourret and L. Thévenin, *Délits de vol chez les mineurs délinquants* (Delicts of robbery among juvenile delinquents) (no. 1/2, p. 26-31).—J. Fourcade, L. Fruehling and A. Ozturel, *Sur un cas d'éteouffement criminel du nouveau-né sans marques extérieures de violence* (On a case of criminal suffocation of a newborn without external marks of violence) (no. 3, p. 108-113).

Beginning with no. 1/2, 1951 (31st year) the title of this publication has been changed to: *Annales de médecine légale et de criminologie*.

International criminal police review. *Revue internationale de police criminelle*. Paris. 6th year, nos. 44-46, Jan.-March, 1951. English edition.

J. Gayet, *The individual identification of typewriting machines* [Conclusion] (no. 44, p. 21-31).—Giuseppe Tamburro, *The right of sanctuary in the new public law* (no. 44, p. 14-20).—René Fabre, *Modern toxicology and forensic medicine* (no. 45, p. 42-44).—Edmond Locard, *The inert hand, a rare type of forgery* (no. 45, p. 45-47).—Ch. Gilliéron, *Observation and selection of condemned persons* (no. 46, p. 78-84).—S. T. Wood, *Extradition* (no. 46, p. 85-87).—R. M. Howe, *The "Burgot" burglar alarm system* (no. 46, p. 88-91).—L. Ducloux, *Counterfeiters at bay* (no. 46, p. 92-99).

Maandblad voor berechting en reclassering. Amsterdam. 30th year, no. 3, March, 1951.

F. Grewel, *Experimentaal-psychologisch onderzoek by forensisch-psychiatrisch onderzoek* (On experimental-psychological and forensic-psychiatric examinations) (p. 53-61)

Nordisk kriminalteknisk tidsskrift. Stockholm. 20th year, no. 9, 1950.

Reidar Sveen, *Selvantendelse. Olein og ull*. (A case of spontaneous combustion in wool treated with oil) (p. 97-101).

* 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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