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Police Science Technical Abstracts and Notes

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POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

Joseph D. Nicol*

Preservation of Agricultural Specimens in Plastic—*Miscellaneous Publication* No. 679 of the U. S. Department of Agriculture gives techniques for the preservation of delicate material in plastic. The preparations of the specimens as well as the casting methods are given.

The Partition Ratio of Alcohol between Air and Water, Urine and Blood; Estimation and Identification of Alcohol in these Liquids from Analysis of Air Equilibrated with Them—An article in *The Journal of Biological Chemistry*, 183:197-213 (March, 1950), by R. N. Harger, B. B. Raney, E. G. Bridwell, and M. F. Kitchell relates results of controlled determinations of alcohol in water, blood, and urine by analysis of air in equilibrium with them. The concentration range used was found to obey Henry's Law when the equilibrium was approached from above or below. A ratio of 2000:1 for alcohol concentrations in blood to expired alveolar air at 34° temperature is indicated by their results.

Choice of Plastics for Imbedding Paint Fragments—Before writing the article on the imbedding of paint fragments in plastic (this *Journal* 40:230-35, July-August, 1949) the authors experimented with a number of types of plastics. Castolite, the use of which was mentioned by Nicol (this *Journal* 40:810, March-April, 1950), was one of several liquid plastics used. It was found that many automobile, as well as other types of paint, were partially or completely soluble in these liquid plastics, and therefore they were considered unsatisfactory for imbedding paint chips. In addition, the polymerization of these plastics was slow, especially when done by the cold method. Therefore, the preparation of the completed mount took more time than when solid plastics were used.

Few old paint samples are affected by the moderate heat (200 to 300° F.) required to soften plastics such as Lucite and Plexiglass. It is possible that a chip containing a layer of fresh paint would be affected, and it may also be true that some particular types of paint are especially sensitive to this mild heat. The writer, however, has not found this to be true in the case of any automobile paints on which this imbedding method has been used. (Submitted by David Q. Burd, California Division of Criminal Identification.)

A Simple Procedure for the Determination of Microgram Amounts of Cyanide—Ernest Beerstecher, Jr., writing in the *Analyst*, 75:280-1 (May, 1950), describes a turbidimetric method of determining microgram quantities of cyanide. Five milliliters of the distillate from acidified sample are placed in the colorimeter tube; 0.5 ml. of KI (10% sol.) and 1.0 ml. of NH_4OH (conc.) are added with agitation of the solution. The instrument is then adjusted to 100. A 0.001N silver nitrate solution is added in 0.01 ml. increments, solution agitated and colorimeter read. The readings may be plotted vs. microliters of silver nitrate solution and the amount of cyanide estimated from the graph after subtraction of blank.

*Firearms Identification Technician, Chicago Police Scientific Crime Detection Laboratory.

Kraft Papermaking—A general description of the manufacture of kraft paper at the Crown Zellerbach, Camas, Washington plant is given in the *Industrial and Engineering Chemistry*, 42:1007-20 (June, 1950). The entire process is described step-by-step so that document examiners should find this a valuable reference.

Photo Over Wire Turns-Up Suspect—The picture transmission network between the New York Police Department, the Boston Police Department, Washington, and the Connecticut State Police has resulted in an identification of a suspect in a Hartford hold-up. The July 23, 1950, issue of the *New York Times* reports that a suspect apprehended in New York City was identified in Hartford by a transmitted photograph. (R. C. Steinmetz.)

Blasting Cap Safety Campaign—The Institute of Makers of Explosives is interested in reducing the injuries among children due to playing with blasting caps. To that end they have prepared several suggested press and radio releases warning children against handling these articles. Interested agencies may obtain copies of these bulletins by writing to the Institute of Makers of Explosives, 343 Lexington Avenue, New York 16, N. Y.

Embezzlers—Post War—The United States Fidelity and Guaranty Co. of Baltimore, Maryland, published a study of defalcations in business during the period from 1947 to 1949. A change is to be observed in the type of individual who embezzles in the post-war period as compared to the pre-war embezzler. His character and age as well as marital status differs, and he is less likely to stay and be caught but generally absconds. The period of embezzlement is shorter, and the length of service is much shorter for the post-war embezzler. Like the pre-war cases there seems to be no outward evidence of predilection to embezzle which might put employers on their guard. However, the different social and economic conditions which prevail now, as compared to those in the previous study made during the depression, have a large measure of responsibility for the increase in embezzling.

Statistical Data Regarding Arrests for Arson and Kindred Crimes, 1936-1949—The Mutual Investigation Bureau compiled the statistics on arson from 1936 to 1949 from the *Uniform Crime Reports* issued by the F.B.I. and related them to other forms of crime. The data is compiled as to sex, race, percentage of persons with previous arrests, and percentage of persons under 25 years of age. Copies may be obtained by writing to the Mutual Investigation Bureau, 111 W. Washington Street, Chicago 2, Illinois.

A Versatile Microscope Hot Stage—Since melting points are useful physical properties in the identification of unknown substances police chemists will be interested in an inexpensive microscope hot stage described by W. A. Bonner in the *Journal of Chemical Education*, 23:601-2 (1946). This stage is easily constructed of brass, glass, and asbestos and will take the standard microscope slide. Control of temperature is obtained by means of a Variac and temperatures up to 300° are possible to fairly close tolerances.

Preservation of Arson Evidence—J. R. Underwood, writing in the *Kentucky Fire News*, 1:8 (June, 1950), suggests the use of Reynolds Wrap as a method

of preserving evidence against moisture. It has the further advantage of not contaminating the evidence with fibers from the wrapping.

A Color Test for Cocaine—E. Rathenasinkam [*Analyst*, 75:169 (1950)] describes a new test for cocaine based upon the reaction of the nitrated cocaine to alkali. The test is performed by mixing the sample of cocaine (0.5 mg.) with 100 mgs. of potassium nitrate and adding 10 drops of sulfuric acid. After heating on a water bath the mixture is cooled and diluted to 30 ml. with water and extracted with chloroform, which is discarded, alkalized with ammonia and extracted with chloroform. Evaporate, dissolve residue in acetone and add 1-2 drops of 10% sol. of sodium hydroxide. Intense purple color indicates cocaine.

Double-Beam Infrared Spectrophotometer—John U. White describes a new instrument manufactured by the Perkin-Elmer Corporation, Glenbrook, Conn., in the *Analytical Chemistry*, 22:768-772 (June, 1950). It appears to be particularly adept at solving chemical problems in the following categories: 1. Structure Determination, 2. Product Purity, 3. Spectra of Isomers, 4. Steroid spectrum. Special features are high speed, resolution, stability, and flexibility. In a police laboratory where speed and accuracy are both essential this new instrument will undoubtedly find a place. (Clemens R. Maise, St. Louis Police Laboratory.)

Beckman Flame Spectrophotometer—A new flame accessory for the Beckman spectrophotometer is described by P. T. Gilbert, Jr., R. C. Hawes, and A. O. Beckman in the *Analytical Chemistry*, 22:772-80 (June, 1950). A table is also presented listing the sensitivity for 43 elements. This instrument appears to be particularly useful for the determination of the alkali metals and alkaline earth metals in very low concentrations in solution. Advantages claimed are small sample (1 ml. or less), speed, and precision. (Clemens R. Maise.)

Method of Facilitating Recording Filing and Intercomparison of Infrared Spectra—Special methods and apparatus are described by O. D. Shreve and M. R. Heether in the *Analytical Chemistry*, 22:836-7 (June, 1950) which make infrared spectra reference cards more readily accessible. (Clemens R. Maise.)

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.

Recordall—The Miles Reproducer Company of New York manufactures a combination Recorder and Transcriber which will continuously record up to 3½ hours, on an endless plastic band. The instrument includes an automatic volume control, sound-power start-stop, low power consumption, and it comes in a variety of models including a battery-operated set.

Micro Centrifuge—A centrifuge designed for microchemical and clinical tests has been placed on the market by the Microchemical Specialties Co. of Berkeley, California. Eight tubes up to one milliliter capacity may be used without too great attention directed to balance. The speed of rotation may be controlled by powerstat up to 22,000 RPM. Centrifuge tubes may also be obtained from the Microchemical Specialties Co.

Portable Ultraviolet Lamp—The application of fluorescent materials to fire alarm boxes has become a common method of apprehension of false fire alarm setters. Ultra-Violet-Products, Inc. of South Pasadena, California, have developed two portable ultraviolet lamps suited to this use; one is a short wave lamp peaking at 2537 Angstroms, and the other is a long wave lamp peaking at 3660 Angstroms. The lamps can be operated on 110 AC current or may be powered by a portable battery pack weighing 3 or 7 lbs. These lamps may also be used where other applications of ultraviolet are desired.

Automatic Portrait Camera—The Beattie Portronic camera, distributed by Photographic Products, Inc., Hollywood, California, has features making it useful in police identification photography. The Portronic camera uses either 35 or 70 mm film in magazines enabling as many as 325 pictures to be taken with one loading. It may also be had in an electrically operated model which has an electrically operated shutter and film transport.

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. 99th year, no. 11, June 3, 1950.

W. Froentjes, *Bloedgroep onderzoek in de criminalistiek* (Examination of bloodgroups in criminology) (pp. 214-217).

International criminal police review. Revue internationale de police criminelle. Official organ of the International criminal police commission. Paris. Fifth year, May 1950, no. 38 (English edition).

J. Kadlec, *The construction of safes and bank strong rooms*, pt. II (pp. 130-136).

Kriminalistik. Zeitschrift für die gesamte kriminalistische wissenschaft und praxis. Heidelberg. 4th year, heft 9/10-11/12, May-June 1950.

W. Hoerbinger, *Ueber den chemischen giftnachweis im gerichtsverfahren* (The chemical proof of poisoning in criminal procedure) pt. 2 (heft 9/10, pp. 107-109).—Rudolf Mally, *Stellungnahme zu "Möglichkeiten und grenzen der schriftexpertise"* (Comments on "Possibilities and limitations in the examination of handwritings," an article by Hans Salaw in heft 19/20, October 1949 of "Kriminalistik") (heft 9/10, pp. 100-104).—Th. Mommsen,

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

** Head, Foreign and International Law Sections, Elbert H. Gary Library, Northwestern University School of Law.

Die tagung der polizeichefs in Hilltrup. Das werden des Deutschen bundes-kriminalamts (The Hilltrup convention of the chiefs of police. The development of the German federal office of criminology) (heft 11/12, pp. 121-123).—G. A. Schroeder, *Papier und dessen sicherung gegenüber fälschungen* (Paper and its protection against forgery) (heft 11/12, pp. 128-130).

Nordisk kriminalteknisk tidsskrift. Stockholm. 20th year, no. 4, 1950.

Philipp Schneider, *En serie mord och mordförsök med tallium* (Homicide with tallium) (pp. 37-41).

Nordisk tidsskrift for kriminalvidenskab. Copenhagen. 38th year, no. 2, 1950.

Georg K. Stürup, *Narcoanalyse i retspsykiatrien og tavshedspligt* (Narcoanalysis in legal psychiatry and professional secrecy) (pp. 162-164). Erik Strömngren, *Narkoanalyse og retspsykiatri* (Narcoanalysis and legal psychiatry) (pp. 164-165). This is a discussion on the article "*Narcoanalysens anvendelse i retspsykiatrien*" (The application of narcoanalysis in legal psychiatry) by Prof. Strömngren in no. 3, pp. 195-203 (1949) of the Nordisk tidsskrift.

Revue de criminologie et de police technique. Geneva. Vol. 4, no. 1-2, Jan./March-April/June, 1950.

Jean Graven, *Récents publications sur la narco-analyse* (Recent publications on narcoanalysis) (no. 1, pp. 75-80).—G. Bérout, *Empoisonnement par le phosphore* (Poisoning through phosphorus) (no. 2, pp. 141-142).—L. Lambert, *La police judiciaire dans le récent projet du Code d'instruction criminelle français* (Judicial police in the recent project of the French Code of criminal procedure) (no. 2, pp. 112-136).—For additional listings from no. 1 see the preceding list in no. 2 of this *Journal*.

Revue pénitentiaire et de droit pénal. Paris. 74th year, no. 1-3, Jan.-March, 1950.

M. Faucher, *Narcose et justice* (Narcosis and justice). Report at the February session of the Société générale des prisons et de législation criminelle (pp. 3-71).