

1949

## Police Science Technical Abstracts and Notes

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## POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

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**Identification in Disasters**—The experience of the Texas City disaster and the study of identification problems encountered there are described by H. Garrison in a booklet published by the Texas Department of Public Safety. This material is reprinted in the *Pacific Coast International Law Enforcement News*, 15: 5, 6, 20, 21 (Sept., 1948). Garrison states that "in the identification of people killed in a public disaster, organization is essential." Much harm can be done in the early phases of a disaster by untrained personnel so that shreds of evidence necessary to a certain identification may be missing, confused, or destroyed. It is obvious that disaster plans should be made before the calamity occurs, but many large departments are still without any concrete plans to handle such a situation.

**Traffic Paint**—Traffic departments place unusual demands upon the paints they purchase. The important characteristics which they desire in traffic paint are quick drying, ease of application, retention of original color, durability, and universal applicability to signs, markers, and pavement. Reflectorized paint has proven to be more durable and less affected by sun. Mica or pumice may be used if glass beads are unobtainable. Paint should be applied three or four times a year instead of the customary twice a year, and the pavement should be cleaned or swept prior to each application. This material is reported in the *American Paint Journal*, 32:30, 33 (1948).

**The Effect of Eating Onions, Limburger Cheese, etc., Upon Breath Tests for Alcohol**—As the result of a controversy in a Detroit case concerning the effect of food odors upon the results of an alcohol determination, Drs. Harger and Muehlberger conducted tests on the reducing properties of the odors of various foods. It was observed that in the concentrations encountered in breath these odors possessed only minute reducing properties; the effect was negligible. An article by J. D. Whittall in *Public Safety*, 35:6, 7 (April, 1949), relates that it was necessary to bubble air through concentrated solutions in order to produce any effect, and since few people digest food very well in their lungs this source of possible error may be discounted.

**Suppression of Cyanogen Bands in Carbon Arc Spectra of Rare Earth Oxides**—The cyanogen bands occur in the region where many of the most sensitive lines of the rare earth elements appear. Pure silver or pure copper electrodes reduce the sensitivity of spectrochemical analyses in which these elements occur as traces. In order to eliminate the CN bands and still retain the sensitivity of the carbon arc, G. M. Wiggins suggests, in an article in *The Analyst*, 74:101-4 (Feb., 1949), that the arc be run in an atmosphere of steam. A simple arrangement of a cylinder around the electrodes with an entrance for the steam and

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a window for the arc light is suitable. It is unnecessary to provide the window with a quartz plate.

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**Test for Mammalian Urine on Fabrics**—N. H. Ishler, K. Sloman, and M. E. Walker report a spot test for mammalian urine which may find application to the identification of such stains in criminal cases. Their method, as reported in the *Journal of the Association of Official Agricultural Chemists*, 30:670-72 (1947), consists of applying 2 to 4 drops of a urease solution (10% aqueous suspension of Jack Bean meal; supernatant liquid) to the spot and letting it soak for 5 to 10 seconds. Then, the fabric is placed on a steam bath and immediately covered with impregnated filter paper so that paper is moistened by the damp area of the fabric. Press firmly, and if the stain is due to urine, a black spot will appear on the paper in about 30 seconds. (The paper is prepared by diluting 14 ml. of a 50% solution of manganese nitrate to 100 ml. and adding it to 100 ml. of a 4% silver nitrate solution. Add 0.1N sodium hydroxide until a black precipitate begins to form. Filter, soak filter paper in solution, and dry it quickly on a steam bath. Prepare fresh paper each week.)

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**The Microscopic Identification of Organic Substances (Benzoic acid derivatives, Barbituric acid derivatives, and Sulfonamides)**—F. Reimers (*Anal. Chim. Acta*, 2:1-16 (1948)) studied various methods of identification of organic compounds and found that the temperature intervals within which the molten substances have the same refractive index as standard glass powders is one of the best methods of identification. Related compounds have the same magnitude of temperature interval distribution; however, the distribution for unrelated compounds is higher than the spread of their melting points. It was found that eutectic mixtures were the least reliable criteria for identification. The data obtained for the 87 compounds in the three groups, benzoic acid derivatives, barbituric acid derivatives, and sulfonamides, are tabulated in very useful form, giving eutectic points and refractive index of molten substances at specified temperature intervals.

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**Electrical Blood Pressure Recording**—The use of a physician's blood pressure cuff to record blood pressure changes during lie detection cases has the serious limitation of becoming uncomfortable after a short interval. Therefore, lie-detector operators may find the use of a device described by H. R. Bierman in *The Review of Scientific Instruments*, 19:707-10 (Oct., 1948), more to their liking. Bierman recorded blood pressure by an electrical wire resistance strain gauge, a device only 24 mm. in diameter. The blood pressure changes are converted into resistance changes by the gauge which is a part of a Wheatstone bridge. By means of amplifier and galvanometer the resistance changes may be recorded. The frequency response is flat from zero to over 200 cycles per second, and good results are obtained with as low as 40 mm. contact pressure.

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**Animal Foot Prints in Crime Detection**—A dog's footprints on a bed sheet at a burglary scene were the only clues to the perpetrator. The investigators observed that the prints showed the cuts and characteristic

marks of the dog's foot and proceeded to footprint the dogs in the surrounding area. A dog was found with matching prints and investigation proved the dog's master to be the burglar. He used the animal as his look-out.

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**International Association of Arson Investigators**—Arson investigators who met in the Fifth Annual Seminar and Training Course in Arson Detection and Investigation at Purdue University joined together in the formation of the International Association of Arson Investigators. It is the purpose of the new organization to further the work of arson detection and investigation by providing a means for the exchange and dissemination of information pertinent to this work. G. H. Parker of Louisville, Kentucky, will serve as the first president. A committee has been chosen to form a constitution and by-laws, and a board of technical consultants has been appointed to aid in the solution of investigators' problems.

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**Plan Drawing**—D. C. McGregor discusses the general aspects of crime scene sketches in *The Police Journal* (London), 22:66-75 (Jan.-March, 1949), 146-53 (April-June, 1949). McGregor's article contains many practical suggestions for obtaining data necessary to producing an accurate drawing at a later date.

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**Judging Speed by Skid Marks**—The conditions of coefficient of friction of pavement, lengths of skid marks, and speed of the vehicle are discussed in *The Police Journal*, 22:120-7 (April, 1949). Although the material is not new it will be of interest to those concerned with traffic accident investigations.

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**The Classification and Identification of Palm Prints**—The article by Douglas Grant in *The Police Journal* (London), 20:277-311 (Oct.-Dec., 1948), 21:40- (Jan.-March, 1949), cannot be abstracted since it consists of a great amount of detail. However, identification technicians interested in this type of identification will find it a worthwhile article. Grant describes a system of dividing the thenar and hypothenar areas into 160 groups and dividing the base-of-the-finger area into 625 groups. The palm prints of each individual are classified in four collections as follows: (a) Right hand-thenar and hypothenar areas, (b) left hand-thenar and hypothenar areas, (c) right hand- base-of-the-finger area, and (d) left hand- base-of-the-finger area. The manner in which palm prints are found at a crime scene led to these four divisions.

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**Footprints, Tire Marks, and Tool Marks**—Douglas Hamilton suggests that a preliminary photograph be made of all footprints, tire marks, and other impressions which require preservation. He also relates in his article in *The Police Journal* (London), 22:42-49 (Jan.-March, 1949), 128-37 (April-June, 1949), a method for obtaining the walking habit of the individual making the foot prints. For this, large protractors and scales are used to construct the walking line, line of the foot, angle of the foot, angle of the step, step length, and step breadth. Various preservation techniques are discussed.

**Preliminary Examination of Typewriting**—W. Schneeberger of Berne, Switzerland, in the *International Criminal Police Review* (Jan., 1949, pp. 10-12), proposes a three factor classification system for the preliminary sorting of typewritten material in questions of identification. These factors in order of use in the formula are: (1) The space in mm. occupied by 100 letter-spaces; (2) the design of the crossbar of the "t" which is divided into two subgroups, 1—those which are decidedly asymmetrical, and 2—those which are symmetrical or doubtful; and (3) the design of numerals in which group A. is made up of "regular" or the Roman style numerals, and B. of the billing or Gothic. When each specimen is first examined it is assigned a classification number (a current model Remington pica machine would be classed 254/lb B (1 B) for example), and all these specimens which do not have identical classification numbers can be immediately eliminated from further consideration. This system appears to have much greater value to European workers than to U. S. examiners as there is a far greater variation in letter spacing between different makes of foreign typewriters than between domestic machines all of which space ten letters to the inch with pica typeface which means that all would have a primary classification of 254. Undoubtedly in this country comparison of a few key letters will be of greater advantage in preliminary sorting than use of this formula. (Contributed by Ordway Hilton, Examiner of Questioned Documents, New York.)

**Academy Meeting**—The Academy of Forensic Sciences (American Medico Legal Congress) will hold its next meeting in Lincoln Hall, Northwestern University School of Law, Chicago, Illinois, January 26-28, 1950. The meeting will be devoted to a formal organization of the Academy, and a discussion of forensic science problems. Those interested in presenting papers should contact Dr. A. W. Freireich, 180 Hempstead Avenue, Malverne, New York, or Professor Ralph F. Turner, Police Administration Department, Michigan State College, East Lansing, Michigan.

**Traffic Courses at Northwestern University**—Twenty-three police officers have been selected to attend the five-month traffic police administration course at the Traffic Institute, Northwestern University, on awards provided by the Kemper Foundation for Traffic Safety, Chicago, and the Automotive Safety Foundation, Washington, D. C.

The comprehensive course in street and highway traffic control and accident prevention begins September 1 and continues through January 26, 1950. It includes more than 600 hours of classroom study, work projects, demonstrations, and a one-week field study trip.

The 23 men, chosen in nation-wide competition, represent 14 municipal police departments and seven state police and highway patrol organizations. Of the 23 named by the Institute Board of Selection, 15 received awards from the Kemper Foundation for Traffic Safety. The Foundation furnished eight \$650 fellowships and seven \$250 tuition scholarships to city police officers. Seven \$650 fellowships and one \$250 tuition scholarship were granted to members of state departments by the Automotive Safety Foundation.

Four hundred and seventy-three men have been graduated from 20 previous courses in traffic police administration at the Institute.

In addition to the above described course, a three-week traffic training course for police officers will be offered by the Traffic Institute from October 31 to November 18, 1949. This basic course in traffic control and accident prevention is open to all city, county and state police and highway patrol officers in active service whose attendance is approved by their department heads. The course will deal primarily with the policeman's part in controlling traffic and preventing accidents, but it will also acquaint student officers with other elements of control, such as public education and traffic engineering and their relation to police activity. Instructors in the course include staff members of the Traffic Institute and the Traffic Division of the International Association of Chiefs of Police, Northwestern University faculty members, police and other traffic officials and representatives of leading safety organizations.

Further information about these traffic police training courses may be obtained from Mr. Gerald O'Connell, Director of Training, Northwestern University Traffic Institute, 1704 Judson Avenue, Evanston, Illinois.

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**Conference for Traffic Court Judges and Prosecutors**—A five-day court and traffic law administration conference for judges, prosecutors, and justices of the peace from all over the midwest will be conducted October 17-21 at the Northwestern University School of Law on the Chicago Campus.

The conference is being planned and directed by staff members of the American Bar Association's Traffic Court Committee, the Law School and the Traffic Institute of Northwestern University.

This is the third such conference to be held at Northwestern and the eleventh in a series being conducted at universities throughout the country. The conference program is aided by a grant to the Traffic Institute from the National Association of Automotive Mutual Insurance Companies.

Subjects to be covered in the conference include: The Traffic Accident Problem and Principles of Control, Traffic Court Operations, Application of Criminal Law and Law of Evidence, Model Traffic Ordinance, Elements in Reckless Driving Charge, Factors Influencing Driver Performance and Means of Improvement, Civil and Criminal Responsibility in Traffic Accident Cases, Physical Laws Affecting Motor Vehicle Operation, Legal and Scientific Aspects of Chemical Tests for Intoxication, Functions of the Prosecutor, and other related subjects.

Further information and registration forms may be obtained by writing to the American Bar Association, 105 West Monroe Street, Chicago 3, Illinois, or the Traffic Institute, 1704 Judson Avenue, Evanston, Ill.

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#### NEW PRODUCTS

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**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. 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.

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**Sweeper Attachment**—The Microchemical Specialties Company of Berkeley, California, has introduced a plastic sweeper attachment designed to fit the standard vacuum hose and accommodate standard 11 cm.

filter paper. The unit is made in two pieces with an air-tight joint and is intended for the collection of dirt, fibers, etc., from clothing of suspects or large objects such as car cushions.

**Sorting Dish**—As an aid in sorting material collected in the vacuum sweeper filter, the Microchemical Specialties Company has developed a sorting dish made of clear plastic with a large central cavity and seven smaller cavities on the rim. A movable ring fits over the smaller cavities as a cover and has one opening which may be turned to any side cavity, while the others remain closed. The center receptacle is also provided with a cover.

**Ethyl Alcohol Distillation Units**—The distillation unit used by Kozelka and Hines for alcohol determination is now manufactured by the Microchemical Specialties Company in two types. One type is all glass with semi-ball joints, and the other type is glass without ball joints.

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

*Compiled by*

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Annales de médecine légale. Paris. no. 1, January/February, no. 2, March/April, 1949.

Rapports présentés au 24. Congrès international de Médecine légale, de Médecine sociale et de Médecine du travail de langue française, Lausanne, Mai, 1948. (no. 1) N. Béno, *D'un cas de kleptomanie et de sa pathogénie* (p. 1-6) Louis S. Copelman and I. Stanesco, *L'exploration de l'affectivité en médecine légale par la méthode du réflexe psychogalvanique* (p. 6-11).—Rapport de traumatologie légale. (no. 2) Mm. Costedoat, Borie and Tupin, *Les effets du souffle déterminé par les explosions sur l'organisme* (p. 39-52).

Archivio di antropologia criminale psichiatria e medicina legale. Milan. ser. V. Vol. 69, Jan./March, 1949, fasc. I.

V. Chiodi, *In tema di responsabilità professionale del radioterapista per insorgenza di cataratta dopo epilazione röntgen del volto e del capillizio* (p. 1-16) R. Gilli, *Lesività mortale da bicicletta* (p. 31-73)

International criminal police review. Official organ of the International criminal police commission. Paris. (English edition) 4th year, March 1949, no. 26.

J. Gayet. *The identification of makes of typewriters by the script.* (p. 10-16).

Kriminalistik. Zeitschrift für die gesamte kriminalistische wissenschaft und praxis. Heidelberg. 3d year, no. 5/6, March 1949.

F. Pietrusky, *Das blut als kriminalistisches leitelement* (p. 52-56)

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

† Head, Foreign and International Law Section, Elbert H. Gary Library, Northwestern University School of Law.

Die neue polizei. Monatliche fach—und lehrschrift der polizeirogane. Munich. 3d year, no. 3, March 15, 1949.

Walter Hepner, *Ueber fluoreszenz-photographie im sperrgefilterten ultraviolettlicht* (p. 57-59)

Nordisk kriminalteknisk tidsskrift. Stockholm. 19th year, 1949, no. 1.

Arne Hanson, *Kriminalteknisk undersökning av saliv och salivläckar* (p. 3-6)

Nordisk tidsskrift for straffert. Copenhagen. 36th year, hefte 3/4, August 1948.

Gunnar Rundstedt, *Amerikansk straffverkställighet. Intryck fran en studieresa i USA 1947* (p. 224-257)

Polizei-praxis. Fachzeitschrift für die gesamte polizei. Frankfurt a/M. 3d year, April 1949, no. 7/8.

F. Pietrusky, *Ueber kugelschutzverletzungen* (last installment) (p. 124-126)

Polizei-rundschau. Monatshefte für polizeikunde und kriminalistik. Lübeck, Hamburg. 3d year, heft 6, March 1949.

Recueil de documents en matière pénale et pénitentiaire. Bulletin de la Commission internationale pénale et pénitentiaire. Berne. Vol. XIII, livraisons 3/4, Nov. 1948.

*United States working group on treatment of adolescent and adult offenders* (p. 237-304) [Series of papers] (Sanford Bates, Parole and other release procedures.—James V. Bennett, The habitual criminal.—F. Lovell Bixby, Classification.—E. R. Cass, The selection and training of personnel.—W. C. Reckless, The short-term sentence and its alternatives in the U. S.—Paul L. Schroeder, The pre-sentence examination of the offender.—Thorsten Sellin, Trends in penal treatment.—Miriam van Waters, Specialized treatment of the woman offender in America and the reasons for the success of this movement.)

Revista de la Escuela de estudios penitenciarios. Madrid. 5th year, Jan. 1949, no. 46.

Revista penal y penitenciaria. Organo de la Direccion general de institutos penales de la nacion, Republica Argentina. Buenos Aires. 9th year, 1944 no. 31/34 (Published in 1948).

Alfredo J. Molinario, *Discurso inaugural del Instituto de altos estudios penales y criminologia* (p. 1-12).

Revue de criminologie et de police technique. Geneva. Vol. II, no. 4, Oct./Dec. 1948.

R.-H. Els, *Examen des encres et teintures sous l'action des infra-rouges* (p. 279-285).

Revue internationale de droit pénal. Bulletin de l'Association internationale de droit pénal. Paris. 19th year, 1948, no. 3/4.

Rivista italiana di diritto penale. Milan. 1st year (n. s.), no. 4/6, July/Dec. 1948.

Schweizerische zeitschrift für strafrecht. Revue pénale suisse. Bern. 64th year, heft 1, 1949.

Adolf Schönke, *Strafrecht und kriminalität im heutigen Deutschland* (p. 16-30).