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Police Science Technical Abstracts and Notes

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POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

Joseph D. Nicol*

Detection of Bufotoxin in Toad Poisoning—The investigation of a death resulting from eating a toad of the family bufonidae is reported by M. H. Bautista in the *Chemical Newsletter* (Philippines), 1:1 (Dec., 1948). Bufotoxin, bufotalin, bufotenin, and bufothionin are contained in the poisonous secretions of the cutaneous glands. Their action is similar to saponins, and their physiological action resembles digitalis. "Bufotoxin is insoluble in water, ether, acetone, chloroform, acetic ether, and petroleum ether; barely soluble in 50 per cent alcohol; and very readily soluble in methyl alcohol and pyridine. Pure crystals of bufotoxin melt at 204-5°C." The following qualitative tests are related: "To a portion of the extract dissolved in 2 cc. of chloroform a few drops of acetic anhydride were added and then concentrated sulfuric acid added drop by drop. The mixture produced a fugitive red color, changing to blue, and finally became a beautiful green. Bufotoxin and bufotalin both give this test, but in the case of bufotalin the red color is not as fugitive as with bufotoxin. Concentrated sulfuric acid produces an orange-red color with bufotalin changing to deep red and exhibiting distinct green fluorescence."

Supervision of Traffic at Special Events—The July, 1949 issue of the *F. B. I. Law Enforcement Bulletin* (18:11-16) contains a comprehensive article on the control of traffic at unusual times. The special events are broken down into three groups: fixed events, mobile events, and emergencies or disasters. It is suggested that all traffic departments have advance plans for such events, and the *Bulletin* cites the handling of traffic arrangements for the Memorial Day race by the Indianapolis Police Department as a good pattern to follow. Some of the factors which must be taken into account are the conditions of the streets; volume and character of normal traffic; traffic control system in use in the area; unusual obstacles such as junctions, railroad crossings, etc.; alternative routes; and accident history of streets under consideration in the plan. A coordinating supervisor must have complete knowledge of the area plan and acquaint each detail with their responsibility. Communications play a major part in discovering and eliminating congestions. Publication of the advance plan to the public will work strongly toward preventing trouble. The suggestions for the disaster plan do not differ markedly from others published elsewhere.

Estimation of Cyanide in Plant Material by Means of Conway Units—G. W. Baker and S. Taubes-Steinfeld report that after trying unsuccessfully to determine cyanide in "feeding cake" by several methods the use of Conway units produced the desired results. Their recommendations in the *Analyst*, 74:189-90 (March, 1949), are that finely ground samples be covered with hot water (60°C.) in the outer chamber of the Conway unit and the HCN be absorbed in 10 per cent potassium hydroxide in the inner chamber. Three days seems to be sufficient if the sample is not large. A few crystals of KI are added to the liquid in the center chamber, and it is titrated with 0.1N silver nitrate.

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Geiger Counters Aid Police—Lead bars containing radioactive cobalt were located in a junk yard by means of Geiger counters. The lead had been stolen from the Palmer Physical Laboratory of the Princeton University. This probably represents the first police case involving Geiger counters. The case is reported in the *Chemical and Engineering News*, 27:1938 (July 4, 1949).

Transmission of Fingerprints by Facsimile—*The Royal Canadian Mounted Police Quarterly*, 15:14 (July, 1949), relates a demonstration conducted at Syracuse, New York, where fingerprints were transmitted by facsimile on a carrier in the 920-960 megacycle band. The range of broadcast is governed by the height of the antenna since the propagation is line-of-sight. This could aid the trend toward early charging or releasing of criminal suspects by permitting regions to maintain centrally located identification bureaus to which surrounding departments would communicate by facsimile.

Colorimetric Adaptation of Levvy Method for Arsenic—E. W. McChesney has simplified the Levvy method of arsenic determination by using a more concentrated silver nitrate solution (2 ml. of 0.1 N solution) to absorb the arsine generated in the specimen. In addition, the metallic silver is oxidized with an excess of standardized ceric sulfate as rapidly as it is formed. The excess ceric sulfate is then determined colorimetrically. This method is reported in the *Analytical Chemistry*, 21:880-2 (July, 1949).

Chemico toxicological Examination of Food—Police laboratories are frequently asked to analyze food for the presence of poisons or harmful contaminants. N. I. Goldstone (*Analytical Chemistry*, 21:781-87 (July, 1949)) has developed an analytical scheme which is designed to isolate and detect twenty-six of the commonly occurring poisons. The method utilizes standard analytical tests.

Development of Fingerprint on Cadaver—*The Fingerprint and Identification Magazine*, 30:7-8 (Feb., 1949) contains an article describing the experiences of the Indiana State Police Laboratory in solving the problem of fingerprints on the hands of an old cadaver. The fingers were removed and placed in normal saline solution at 75°F. for one month with occasional changing of the solution. After this treatment the fingers were placed in a warm bath of a commercial leather dressing for 24 hours. Further treatment in the leather dressing at 250°F. for 45 minutes caused the pattern to shrink but made it more legible. It is suggested that a longer treatment in leather dressing at lower temperatures would produce better results. A positive identification resulted from the technique described.

Method for Improving Photographs of Fingerprints on Bottles or Jars—The photographs of fingerprints on bottles or other glass objects are often improved if a background is used which is in contrast with the powder in the print. The usual practice is to insert paper of the necessary color; however, in narrow neck bottles this is difficult, and where the shape of the bottle is irregular it is often impossible to get the necessary improvement in contrast. It was found that rubber balloons of the

right color could be introduced into the neck of the bottle and inflated until the balloon took on the shape of the vessel. This method produced a variety of available backgrounds for any shaped object. (Submitted by Adolph Valanis, Chicago Police Scientific Crime Detection Laboratory.)

Zip Guns—*The Bulletin of the Bureau of Criminal Investigation of New York State Police*, 14:1-3 (1949), describes a type of homemade gun in general use among New York's juvenile gangs. The weapon is an adaptation of a toy plane launcher which has a trigger and hammer mechanism. By selecting the proper size tubing for the cartridge to be used the weapon is easily constructed and held together by wire or tape. Other localities have seen similar devices constructed from toy pistols.

Proposed Method of Sampling and Analysis of Barrel Gas in Firearms—The spectrophotometric determination of residual gases in the barrel of a fired weapon serves as a basis for determining the time of firing in shooting cases. The oxides of nitrogen (nitrites) present in the barrel gases are sampled by breaking the tip of an evacuated "grab bottle" in the barrel, expelling the gases from this bottle into Greiss' Reagent, (1.5 gms sulphanylic acid in 450 cc of 2N acetic acid; 0.6 gms of α -naphthylamine boiled in 60 cc of water, decanted, and added to 450 cc of 2N acetic acid; mix the two solutions and store in cool place) and analyzing with a spectrophotometer. The conditions pertaining at the crime scene concerning air flow, position of weapon, ammunition, must be noted since it will be necessary to run a time vs. gas concentration curve on the gun under conditions simulating those at the crime scene. The collecting media is 10 cc of Greiss reagent in a curette, the color of which is read at 525 m μ . Several firing times are taken, and the transmittance vs. time is plotted on semi-log paper. After the curve has been drawn, the transmittancy recorded for the crime scene test is used to determine the time elapsed between test and firing of the weapon. The curve must be drawn anew for each case since weapon, ammunition, and condition at crime scene will have a bearing on the quantitative results. Approximate maximum times for the following weapon classes will give some idea of the possibilities of the method; .45 caliber service pistol—9 hours; .22 caliber rifle—10 hours; 12 gauge shotgun—5 hours; .32 caliber pistol—10 hours. The technique is invalid if the weapon is out-of-doors or near an airy place. (Submitted by Evan E. Campbell, University of Colorado Medical Center.)

Document Examiners Meet—The American Society of Questioned Document Examiners held its annual meeting at Denver, Colo., from August 17-23, 1949. The major portion of the meeting was devoted to problems arising out of the examination of disputed signatures, both genuine and forged, and their proof in court. Four members of the Society presented testimony on typical signature cases followed by a general discussion marked by constructive suggestions for improvement. A very successful seminar was held with the Denver Bar Association at which members of the Society gave illustrated talks on various phases of document examination followed by an open question and answer period. A report was made by the Society librarian on the Albert S. Osborn Memorial Library, established last year, which now includes over 1,000

books on questioned documents, handwriting, typewriting, inks, paper, photography, and related subjects. Donald Doud of Milwaukee, Wis., was elected to regular membership, and Prof. Fred E. Inbau of Northwestern University Law School, authority on scientific evidence, and Julius Grant, noted English author on scientific document examination, were elected honorary members. (O. H.)

Academy of Forensic Sciences—The second meeting of the Academy of Forensic Sciences will be held on January 26, 27 and 28, 1950 in Lincoln Hall, Northwestern University School of Law, Chicago. The program will include a symposium covering the academic, research, and technical problems in the various branches of the forensic sciences. Papers on related subjects are invited. Contributors will please contact the chairman of the Program Committee, Dr. A. W. Freireich, 180 Hempstead Ave., Malverne, N. Y., stating the title of the paper and the approximate time needed for presentation. Further information regarding hotel reservations, etc. can be obtained from the chairman of the Program Committee or the acting secretary, Professor Ralph F. Turner, Department of Police Administration, Michigan State College, East Lansing, Michigan.

Interesting Firearms—Three unique firearms are described and illustrated in the *Bulletin of the Bureau of Criminal Investigation of the New York State Police Department*, 14:7-10 (No. 2, 1949). The first is the familiar fountain pen pistol. The second weapon is a small, home-made pistol capable of being fired between the fingers while concealed in the palm of the shooter's hand. The third weapon is a modification of a toy pistol which has been effected by inserting a .22 caliber barrel into the barrel of a toy popgun.

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. 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 a recommendation by the Journal.

A New A.R.L. 1.5 Meter Grating Spectrograph—The Applied Research Laboratories has developed a flexible grating spectrograph capable of covering the spectrum from 1850Å to 9000Å, either photographically or by direct reading. Like previous models it is equipped with a 24,000 lines-per-inch grating and will be in the same price range. Dispersion in the first order is 6.94Å/mm with a camera range of 2500Å per exposure.

Kodak Pola-lights—Troublesome glare from cracked and wrinkled photographs can be eliminated through the use of Kodak Pola-lights and a Kodak Pola-Screen. This means of illumination is also helpful when copies must be made from prints on texture paper. The Pola-light may be purchased as complete units with stands, without stands, or as baffles for existing copy lights.

Transparent Plastic Boxes—Plastic boxes, ranging in size from 15/16" x 15/16" x 3/4" to 6" x 7/8" x 3/4", are available from the R. P. Cargille Co., 118 Liberty Street, New York City.

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

Compiled by
KURT SCHWERIN†

Annales de médecine légale. Paris. no. 3-4, May/June-July/Aug. 1949.

25e congrès de médecine légale, de médecine sociale et de médecine du travail, Bordeaux, 1-14 May 1949; P. Moureau, C. Heusghem, A. Collard, P. Xhenseval et L. Quinet, *Médecine légale et modifications biologiques et chimiques liées a la grossesse* (Legal medicine and biological and chemical modifications connected with pregnancy) (no. 3, p. 101-159). A. Charlin, *Le probleme de la narco-analyse chimique en médecine légale* (no. 4, p. 161-166). A. Abecassas & M. Berthon, *La narcose barbiturique en médecine légale* (no. 4, p. 177-180) (Problems of chemical narco-analysis in legal medicine. *Bulletin officiel de la Société de médecine légale* (no. 4, p. 181-213).

Criminalia. Revista mensual. Organo de la Academia Mexicana de ciencias penales. Mexico, D. F. Año 15, no. 3-4, March-April 1949.

Evelio Tabio, *La criminologia y el derecho penal del porvenir* (Criminology and criminal law of the future) (no. 3, p. 100-120). Maria Lavalle Urbina, *Delincuencia infantil* (Juvenile delinquency) (no. 4, p. 134-146).

International criminal police review. Official organ of the International criminal police commission. Paris. (English edition) 4th year, April, 1949, no. 27-June/July, 1949, no. 29.

J. Gayet, *The identification of makes of typewriters by the script* (no. 27, p. 11-20; no. 28, p. 16-26). A. Björback, *The police in Norway* (no. 27, p. 2-10). P. Marabuto, *Police training in France* (no. 28, p. 3-9; no. 29, p. 15-25). L. Sandoval Smart, *Blood groups (Groups, sub-groups, blood-types and factors) in criminal investigation* (no. 28, p. 10-13). H. Donnedieu de Vabres, *French justice and the usage of Penthotal* (no. 29, p. 2-9).

Kriminalistika. Review of criminology and criminal practice. Prague. 4th year, no. 1/2-4, January/February-April, 1949.

Valentin Dekan, *Sadista* (Description of a rather rare case of sadism) (no. 1/2, p. 1-7). Emanuel Vlcek, *Chrup jako identifikacni prostredek* (Teeth as means of identification of unknown corpses and skeletons) (no. 3, March, p. 35-40). The articles in *Kriminalistika* have summaries in English, French and Russian).

Nordisk kriminalteknisk tidsskrift. Stockholm. 19th year, no. 2-4, 1949.

Carl-Axel Nyman, *Förgiftningsolycka till följd av läckage pa anslutningsledning till kylelement* (An accidental poisoning due to a break in the pipe line leading to the cooling element) (No. 3, p. 26-30).

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

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Revue de criminologie et de police technique. Geneva. vol. 3, no. 1-2, January/March-April/June, 1949.

Roland Grassberger, *Qu'est-ce-que la criminologie?* (What is criminology?) (no. 1, p. 3-9). J. Pinatel, *Science pénitentiaire et criminologie juvénile* (no. 1, p. 33-43). P. Jeanneret, *Brèves réflexions sur le problème de la criminalité juvénile* (no. 1, p. 44-47). C. Kohler, *Le cinéma et les enfants* (no. 1, p. 48-54) (Three articles on special aspects of juvenile delinquency). Walter Hepner, *Preuve d'une falsification par l'examen microscopique des bords de papier (tranches)* (Proof of falsification through the microscopic examination of the edges of paper) (no. 2, p. 126-135). J. Graven, *La Commission suisse d'études criminologiques et de prophylaxie criminelle* (The Swiss Commission for criminological studies and the prevention of crime) (no. 2, p. 83-92).

Revue de science criminelle et de droit pénal comparé. Publ. sous les auspices de l'Institut de criminologie et de l'Institut de droit comparé de l'Université de Paris. Paris. N. S. no. 1-2, January/March-April-June, 1949.

Docteur Bachet, *Etude médico-psychologique concernant 47 délinquants récidivistes rélégués* (A medico-psychological study concerning 47 delinquent imprisoned second offenders) (no. 1, p. 47-72). Jean Graven, *le droit pénal soviétique* (Soviet criminal law) (no. 2, p. 241-308; last installment; previous installments in nos. 1-2, 1948).

Revue internationale de droit pénal. Bulletin de l'Association internationale de droit pénal. Paris, 20th year, 1949, no. 1-2.

P. Marabuto, *La 17e session de la Commission Internationale de police criminelle* (Report on the 17th session of the International criminal police commission, Prague, September 6-8, 1948. Represented were Australia, Austria, Belgium, Bulgaria, China, Czecho-Slovakia, Denmark, Egypt, Finland, France, Hungary, Iran, Italy, Luxemburg, Netherlands, Norway, Sweden, Switzerland, Venezuela) (p. 65-80).

Revue pénitentiaire et de droit pénal. Bulletin de la Société générale des prisons et de législation criminelle et de l'Union des Sociétés de patronage de France. 73e année, no. 1/3, January/March, 1949.

Dr. Badonnel, *Les psychoses carcérales; rapport présenté à la Section pénitentiaire du 2e Congrès international de criminologie* (Prison psychoses; report presented to the penitentiary section of the 2d Internat. Congress of criminology) (p. 32-35).

Schweizerische zeitschrift für strafrecht. Revue pénale suisse. Bern. 64th year, heft 2, 1949.

Hans von Hentig, *Die amerikanische polizei* (American police) (p. 210-222). Jean Graven, *Le "proces de penthotal"* (The "Penthotal trial") (p. 235-246).

Tijdschrift voor strafrecht. Leiden. Deel LVIII, afl. 1-2, 1949.

Maria Stas, *De bepaling van alkohol in bloed en de betekenis hiervan voor de rechtspraak* (The determination of alcohol in blood and its legal consequence. (p. 166-189).