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Police Science Technical Abstracts and Notes

POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

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Disguised Handwriting—H. Pfanne, *Archiv fuer Kriminologie, 131* (5–6): 140–157 (May–June 1963). A report of the author's analysis of the handwriting disguises employed by a sample of 590 persons over a period of 10 years. A clear distinction is made between deliberate (conscious) and unintentional (unconscious) changes in handwriting characteristics, and the frequency of occurrence of the various features are tabulated.

One of the important findings is that disguised writing is not always identifiable with the normal writing of a given subject. The reason is that the act of disguise brings its own characteristics into the writing, mainly as a tendency toward distortion. However, these concomitants of disguise tend to be individualized, i.e. whichever method of disguise a person selects will contain features of "his disguised writing." The author therefore proposes that procedures for taking handwriting specimens be modified. Whenever a suspect's request writing is to be compared with a questioned writing which is disguised, he should also be asked to provide "disguised" specimens. (The underlying principle is that the known writing should be of the same kind as the questioned writing or at least as comparable as possible). He should therefore be instructed to write the incriminating text as he would if he were using the particular method of disguise under examination. If the suspect is in fact the guilty party, his requested disguise writing will be more directly comparable with the questioned writing than would his normal handwriting. Conversely, if he did not write the incriminating document, the expert's conclusion will be a more definite one of non-identification. (JB)

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Improved Method For X-ray Diffraction Analysis—Ir. H. van der Kolk, *Archiv fuer Kriminologie, 131* (3–4): 101–104 (March–April 1963). Very small samples, such as minute paint fragments, can be analyzed in a conventional X-ray diffraction camera by using a micro-sample carrier made from drawn glass. This technique is described in detail together with the special photographic processing necessary to obtain a usable diffractogram. (JB)

The Bite—H. von Hentig, *Archiv fuer Kriminologie, 131* (5–6): 121–136 (May–June 1963). An eminent European scholar examines the medical and psychopathological aspects of the bite from a criminological point of view. Extensive references. (JB)

Differentiation of Human and Animal Bone Tissue—R. Raemsch and B. Zerndt, *Archiv fuer Kriminologie, 131* (3–4): 74–87 (March–April 1963). Analysis of the microstructure of bone is proposed as a means of differentiating human and animal bone fragments. The authors studied a number of sections of the femur of humans and the common domestic animals with respect to the blood vessel canals. On the basis of size, shape and distribution of these canals, it was concluded that human bone samples can readily be distinguished from particularly the smaller domestic animals. The article is illustrated by a number of photomicrographs. (JB)

Determining Shooting Distance By Neutron Activation Analysis—A. Schoentag and F. Baumgaertner, *Archiv fuer Kriminologie, 131* (1–2): 1–7 (January–February 1963). By measuring the

amount of antimony deposited around an entrance wound, the authors were able to extend the former maximum shooting distance determination of about 80 cm. to 3 meters. The amount of metal was established by neutron activation analysis which made it possible to measure the deposits over a much larger area of fabric than would be possible by spectral analysis. Samples of fabric which had been fired into with one automatic pistol and using the same lot of ammunition were cut in the form of a ring around the entrance hole. The results of the measurements showed a clear—although not linear—correlation between shooting distance (up to 3 m.) and a decrease in the amount of antimony. The differential deposit of particles in front of and around the projectile as against the wake of the projectile are discussed. (JB)

Radioactive Isotopes As a Document Examination Tool—H. Frisch, *Archiv fuer Kriminologie, 131* (1–2): 22–36 (January–February 1963). A novel method of paper analysis using isotopes is described. It was first applied to postage stamps (A. Narath, 1958), revealing faults and repairs in valuable philatelic items which otherwise appeared to be in perfect condition.

This technique employs a radioactive isotope, C^{14}, dispersed in a methacrylic sheet which is enclosed in an X-ray cassette. The paper sample is placed in firm contact between the radioactive sheet and the X-ray film for about 24–48 hours, the exposure depending on the thickness of the paper. Paper structure, wire marks, and watermarks will be recorded in fine detail while most printing inks are not recorded. The method is superior to other hard or soft X-ray techniques by its convenience and ability to record differences in paper structure without interference from printing inks. The carbon-14 isotope is a very slow radiator with a half life of 5500 years but other, more vigorous isotopes may be used. However, the longer exposures are said to yield superior contrast compared to the more active radiation sources. (JB)

Ultraviolet Analysis—H. Becker, *Kriminalistik, 17* (7): 309–316 (July 1963). Ultraviolet fluorescence analysis in forensic science has not been notably advanced in the past few decades. The established techniques using a radiation source emitting UV at 366 mu. for fluorescence and reflectance photography with glass optics are practically the only methods in use. The author carried out a series of experiments employing a variety of wavelengths and filters, primarily to restore erased writing. The apparatus consisted of a filter monochromator and a camera with quartz optics. Three wavelengths were found useful: 256, 313, and 366 mu. In addition to the visible fluorescence effects and UV photographs possible from these three regions, invisible fluorescence photographs can also be made to record in the 313 and 366 mu. regions from exciting radiation at 256 and 313 mu., respectively. A number of photographs accompanying the article show how effective these modifications of UV technique can be in restoring writing, revealing eradicator stains, differentiating writing media, etc. (JB)

What Every Chief Should Know About Narcotics—W. Cleon Skousen, *Law and Order, 12* (2): 10–14 (February 1964). This article gives a short lay discussion of the common narcotics encountered by police officials which includes opium, morphine, heroin, morphine by-products cocaine, marihuana, barbiturates, and benzadrine. The article will be interesting to those who have not done much reading on narcotics; however, it does have a few mistakes such as heroin being colorless and dilaudid being a weaker drug than morphine. (JDC)

The Psychology of Narcotic Addiction—W. Cleon Skousen, *Law and Order, 12* (3): 22–25 (March 1964). A followup to the article on What Every Chief Should Know About Narcotics. This article discusses in the policeman's language such subjects as Narcotics and Youth, Drug Addiction and Prostitution, people who are considered Medical Addicts, and how they become such, the Effects of Drug Addiction, and the methods of treatment of drug addiction. (JDC)

How to Beat The Narcotics Racket—W. Cleon Skousen, *Law and Order, 12* (4): 18–23 (April 1964). The third in a series of articles on narcotics, this article discusses such subjects as the Machinery for Prevention and Detection of Narcotic Addiction, and the type of law to beat the narcotics racket, which does not focus on the drug itself but on the addict. It makes drug addiction a

crime. Also other topics such as the need for a tighter control on legitimate drug outlets, and that suppressing addiction usually suppresses crime generally. (JDC)

Photography, The Investigator's Tool—Owen Crumb, *Law and Order, 12* (4): 7–11 (April 1964). The author advocates having pictures made of all the clues obtained from the crime scene, then have more pictures made until literally every inch of pertinent scene has been recorded on film. Abundant pictures have been made totally practical by a modern 35 mm. camera, using inexpensive and rapidly processed roll film. Also discussed in the article are various small articles found which should be photographed for presentation, such as a cockroach leg; the availability of 35 mm. color film has brought color photography within the financial reach of nearly every police department. Discussed are cases involving photograph and pictures to illustrate. (JDC)

Do's and Don'ts of Photography During a Snowstorm—*Law and Order, 12* (4): 12 (April 1964). Shows by example of photographs that mounting a camera on a tripod and using time exposure of several seconds with lighting from the side gives a better coverage of the area during falling snow. (JDC)

A Single Exposure Test Strip Method For Photomacrography, Photomicrography, and Polaroid Photography—Herbert MacDonell, *Law and Order, 12* (4): 14–16 (April 1964). The article describes the use of the device known as the Kodak Projection Print Scale which is a circular gradient density scale consisting of several pieshaped segments. In use, the device is placed over a 4 × 5 piece of enlarging paper and a single exposure of one minute made. After development the effective exposure time given to each segment is clearly printed within it's own area. A final enlargement may be made by using the exposure time printed in a section having the density desired. The method is particularly advantageous when used with Polaroid film. (JDC)

Simplified Ultramicro Determination of Carbon Dioxide Content Using the Natelson Microgasometer—Robert G. Martinek, *Clinical Chemistry, 10* (2): 153–158 (February 1964). Elimination of the absorption of carbon dioxide with alkali and the use of a single unified reagent promote greater ease in facility of analysis and insure greater precision. The relative constancy of gases other than carbon dioxide contained in serum was the basis for elimination of the alkali absorption step by Carraway and Fanger and by Knight, et al. It should be possible to apply the single unified reagent and simplified technique to other gasometric instruments as well as to preparatory gas chromotography. (JDC)

A Simple Method of Preparative Electrophoresis—Newton Ressler and Ramon R. Joseph, *Clinical Chemistry, 10* (4): 346–351, (April 1964). A volume of approximately one milliliter of protein solution can be applied with the cell used. A marker solution applied adjacent to the sample to be separated indicates the position of the protein bands during the migration. Since the cell combines the running surface and electrode compartment in a single unit, preparation is simplified merely by filling the cell with the stabilized buffer solution. The method described is for the use on serum proteins; however, the method could be adapted to use in other analyses using gel electrophoresis. (JDC)

Tracking Prison Escapees Is An Art—H. V. Agala, *F.B.I. Law Enforcement Bulletin, 33* (2): 3–7, 21–2 (February, 1964). Communication equipment, trained personnel, and general technics are discussed. A tracker must be patient and have considerable endurance. No track should be left until a new one is found. Always return to last track if trail runs out. By using two teams, one on the track, and the other scouting, some "leap frogging" is possible. (JDN)

A Preparative Technique for Quantitation of Volatile Materials by Gas Chromatography—R. H. Gadsden and W. M. McCord, *Journal of Gas Chromatography, 2* (1): 7–11 (January, 1964). Alcohols and other volatiles are separated from blood by carrier distillation after tungstate precipitation of the proteins. The immiscible fraction is dehydrated and chromatographed on Hallcomid using flame ionization detection. Sample injected is a constant volume and allowance is made for excess concentration of volatiles in original sample distilled. Peak heights are plotted for quantitation. Method is reproducible to ±5%. (JDN)

A Burglaries Alarm—C. W. Farrow, *R C M P Gazette, 26* (3): 17 (March, 1964). A burglar strung wire from a battery and a button outside the bur-

glarized premises to a bell on the inside. A look-out could warn the burglar inside if any danger developed. (JDN)

Handling Techniques for Submicrogram Sample for X-ray Diffraction and Analysis—E. R. DuFresne, *Mikrochimica Acta, 3:* 416–21 (1963). Discusses using plastic for specimen supports for X-ray diffraction. Also considers a number of specimen handling techniques; such as, electrostatic, "cold needle", drying oil. (JDN)

Lighting Technics for Photographing Gold Objects—H. L. Gibson, *Dental Radiography and Photography, 36* (3): 59–62 (1963). Objects having specular glare must be photographed with indirect light. This can be accomplished by reflecting flood lights from metallic foil on to the subject. Where the subject is colored, matching colored metallic foil is used. This may be shaped to suit needs of the occasion. The camera may shoot through a hole in the reflector. (JDN)

Identification of the Pyrolyzates of Substituted Barbituric Acids by Gas Chromatography—D. F. Nelson and P. L. Kirk, *Analytical Chemistry, 36* (4): 875–8 (April, 1964). The sodium salts of barbital, butethal, hexethal, probarbital, amobarbital, pentobarbital, and metharbital were pyrolyzed on platinum foil and the product analyzed on columns of polypropylene glycol, Carbowax 600 and Carbowax 20 M. The first two barbituates could be identified, the third and fourth with some certainty and the last three with some probability. (JDN)

New Method For Latent Print Development—H. Hartmann, *Kriminalistik, 17* (10): 476–479 (October, 1963). A detailed appraisal of the "Magna-brush" which is a "brush-less" method of latent fingerprint development. It is a new aid which should be familiar to all American specialists concerned with latent print methods. (The article is a commendable example of how knowledge of methods and inventions can be reported in the professional journals for the benefit of specialists in more than one country). (JB)

The Identification and Determination of Alcohols in Blood by Gas Chromatography—W. M. McCord and R. H. Gadsden, *J. of Gas Chromatography, 2* (1): 38–9 (January, 1964). Various alcohols are removed from blood specimens by distillation of deproteinized sample. The distillate is dehydrated and then injected into a column of Diisodecyl phthalate on chromosorb. The alcohol is identified by retention time and determined by peak bright plots. (JDN)

A Simplified Procedure for the Concentration of Congeners in Alcoholic Beverages—A. Bober & L. W. Haddaway, *J. of Gas Chromatography, 2* (2): 76–9 (February, 1964). To 40 ml of beverage in a 100 ml volumetric flask is added, 10 ml of a 20% sol. of polypropylene sebacate in reagent grade ethyl ether. Water is added to bring volume to 100 ml. After mixing, the upper layer is injected into chromatograph. For method see: Bober, A. and Haddaway, L. W., Gas Chromatographic Ident. of Alcoholic Beverages, *J. Gas Chromot., 1* (12): 8 (1953). (JDN)

Fatal Cases With an Elevated Urine Alcohol but Without Alcohol in the Blood—A. R. Alha, *J. of Forensic Medicine, 11* (1): 3–5 (January–March, 1964). Fifteen cases were reported in which there was no blood alcohol found although the urine alcohol may reach 200 mg per 100 ml. In this case, brain injuries resulted in some period of survival prior to death. Urine alcohol might present significant supplementary data if alcohol is suspected. (JDN)

The Quantitation Demonstration of Air Embolism—J. Erben and F. Nadvornik, *J. of Forensic Medicine, 10* (2): 45–50 (July, 1963). Air embolism is demonstrated by a quantitative determination of oxygen in the right heart. A specially constructed aspirometer collects the gas and an oxygenometer determines the quantity of oxygen by pyrogallol analysis. The method has proven to be useful in determining cause of death in cases of massive skull injuries. Gases generated by putrefaction can be distinguished. (JDN)

Latent Prints Solve Eight Year Old Murder, Anon, *Ident. News, 13* (12): 4–5 (December, 1963). After killing a woman, the assailant sealed her in a metal box, soldered shut. The box was then placed in a carton and left for storage. Eight years later, it was opened. Latent prints of the assailant were found and identified. Victim was identified from her dental chart. (JDN)

Eisendroth: How I Light Metal—D. B. Eisendroth, Jr., *Photo Methods for Industry, 7* (2): 30–

34, 54–5 (February, 1964). Suggests use of Ortho film, transluscent tents, dulling sprays, contrast backgrounds, mirrors and polarizing filters to handle reflection problems. (JDN)

Some Properties of ABH Antisera Considered in Relation to Blood Stain Grouping—S. S. Kind, *J. of Forensic Medicine, 10* (2): 51–6 (April–June, 1963). Discusses properties of ABH antisera in relation to blood stain grouping. By preabsorbing, sensitive and reliable sera is formed. In the absorbtion-elution method, easily readable agglutination resulted without clumps adhering to stain. (JDN)

A Four-in-one Nomograph to Calculate the Exposure Corrections for Close-up Photography—W. G. Hyzer, *Photo Methods for Industry, 7* (2): 52–3 (February, 1964). Log-log paper is used to construct a nomograph showing correction factor for magnification from 0 to 9 in terms of exposure time or f number, and exposure index. (JDN)

The Identification of Make, Model, and Year of Manufacture of a Car by an Examination of its Paint Flakes—C. F. Tippett, *Medicine, Science and the Law, 4* (1): 22–5 (January, 1964). A study of the top coat and undercoats applied to eight manufacturers products, representing over 95% of the cars on the road in Wales area, indicated that the make, model, and year of a car could be predicted from paint specimens. The scheme for identification starts with 1961–1962 production. It is hoped that future efforts will permit a larger coverage of cars and their makers into the system. (JDN)

The Use of Ninhydrin in the Development of Latent Finger Prints—H. A. Speaks, *Finger Print and Identification Magazine, 45* (9): 11–13, 23 (March, 1964). The author urges the use of ninhydrin routinely in the development of latent finger prints on checks and other paper. In several cases, the development period was a month or longer. (JDN)

The Deadly Tranquilizer—R. A. Neilson, *Traffic Safety, 64* (4): 8–10 (April, 1964). Report of survey of drinking drivers and accidents in eight California Counties, 67% had been drinking, 59% had 0.10% or higher. In two car accidents, the "responsible" driver had an alcohol background 7 times more frequent than the "victim" driver. Of the socalled "social drinker," four out of five of the drinking drivers who died had between 6 martinis and a quart of bourbon. Recommends the following:

1. Implied consent for chemical tests.
2. A testing device small enough for policemen to carry on their persons.
3. Policemen willing to use the device.
4. Qualified chemical test experts.
5. Impartial, well-trained judges and prosecutors who are not themselves a part of the problem of the drinking driver.
6. Presumptive limit laws. (JDN)

Color Reactions of Organic Compounds with Selenious—Sulfuric Acid (Mecke's Reagent)—V. E. Levine and M. Nachwan, *Journal of Forensic Medicine, 10* (2): 65–86 (July, 1965). A review of reactions with the following classes of compounds: Phenolic, Thiol, Thiopurines, Barbiturates, Thiourea, Organic Sulfides, Heteropentacycles. Since many compounds give similar reactions, misinterpretation is possible. It is best used to exclude morphine alkaloids rather than identify them. (JDN)

Album of Criminal Offenders—H. Schleimer, *International Criminal Police Review*, No. 171: 235–38 (October 1963) describes files kept by the Israel police for 16 classes of criminals. Method of filing and the use of transparent overlays to superimpose hats, spectacles and moustaches are included. (OH)

The Use of Radioactivation for the Investigation of Crimes, Gammaspectrometry—S. Decour, L. Aufroix, S. Pougheon, and P. F. Ceccaldi, *International Criminal Police Review*, No. 171: 239–42 (October 1963) discuss the theory of gammaspectrometry and illustrate with an example of differentiating between paint samples. (OH)

The Chemical Confidence Trick—Homero Villareal, *International Criminal Police Review*, No. 172: 274–7 (November 1963) tells of a fraudulent box device and the methods used by confidence men to persuade victims that they can print currency with it. (OH)

The French Surete Nationale's Training Centre for Shooting—*International Criminal Police Review*, No. 172: 278–80 (November 1963). A brief