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Police Science Technical Abstracts and Notes

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POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

Joseph D. Nicol*

A Study of the Factors in the Identification of Handwriting—M. E. Tresselt, *The Journal of Social Psychology* 24: 101-109 (1946), found that the ability of a "lay witness" to differentiate between his or her own handwriting and traced or free hand forgeries is low; 67% could not identify their handwriting. In these studies whole paragraphs were used so that undoubtedly there would be even less ability to determine signatures. Changes in media, ink or pencil, and changes in content made some slight increase in ability. The author concluded "That the identifications of one's own or other people's handwriting is too often faulty to be regarded as direct testimony, and if admitted, should be given a low weighting."

Determination of Methyl Alcohol in the Blood and Body Fluids—

Because of the wide use of methyl alcohol as a beverage E. E. Ozborn was led to a method for its determination in body fluids and blood. This prevents wrongly diagnosing cases of drunkenness as due to ethyl alcohol, in time for treatment. Most alcohol tests do not distinguish between ethyl and methyl alcohol. The following procedure will detect 0.2 mg of methyl alcohol in 1 cc. of blood. (1) Add with shaking 2 ml. of 20% trichloroacetic acid to 2 ml. of oxalated blood. (2) Centrifuge and/or filter. (3) Oxidize 1 ml. of filtrate with 0.2 ml. of permanganate reagent (15 gms. KMnO_4 and 75 ml. of 85% phosphoric acid made up to 500 ml. with distilled water) and shake. (4) Further decolorize with solid powdered sodium bisulfite. (5) Add chromotropic acid and allow 1.5 ml. of H_2SO_4 to run down the side of tilted tube. A purple color should form. Only Methenamine and Formaldehyde interfere, and these can be detected by omitted the oxidation by permanganate. This material is abstracted from the *U. S. Naval Medical Bulletin*, 46: 1170-2 (Aug. 1946).

Determination of Barbiturates from Postmortem Specimens—

The increased use of barbiturate drugs and their occurrence in postmortem examination caused Paul Valov to develop a rapid method for qualitative and quantitative results which he describes in the *Industrial and Engineering Chemistry*, Analytical Edition, 18; 456 (1946). His principal modification of existing procedures is to extract the specimen with 10% sodium hydroxide first and then extract the filtrate with ethyl ether instead of ethyl alcohol. The procedure is as follows: (1) Shake 60 ml. of specimen in 410 ml. of distilled water and 10 ml. of 10% sodium hydroxide for 5 minutes. (2) To this add 60 ml. of 10% sodium tungstate. Now add slowly 60 ml. of 0.67 N sulfuric acid with shaking and acidify with 18 N sulfuric acid using Universal indicator paper. (3) Filter until 450 ml. of filtrate is collected and extract with

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an equal volume of redistilled ethyl ether, shaking for 5 minutes. Separate and evaporate ether. The ether may be recovered and reused. (4) Weigh, deduct blank, and calculate mg. per 100 gms. Identification is by Zwikker-Koppanyi method. The time consumed is short, and the method produces a complete yield.

Stereoscopy as an Aid to Accurate Observation—Mr. H. F. Kurtz of the Bausch and Lomb Optical Company points out the advantages of stereoscopic pictures in accurately portraying objects or scenes for jury presentation. The critical dimensions for camera and the stereoscopic systems are given. It is possible to produce stereoscopic pictures by microscope and by x-ray which will give the orientation of objects in three dimensions. This material was presented to the International Association for Identification Convention at Rochester, New York, on August 16, 1946.

Recovery of Bullets by Mine Detector—*The Police Journal* (England), 20:158 (April-June, 1947) describes the use of Army Mine Detectors at Winnipeg, Canada, for the location of bullets and cartridge cases in snow, sawdust, and coal dust in one case and clay and mud in another. (These instruments are available in United States as military surplus.)

Stolen Guns—In each issue *The American Rifleman* prints a list of stolen guns. Police departments might add these to their local lists.

Incendiary Device—*The Chemical and Engineering News*, 25:1072 (April 14, 1947) describes a new heat tablet devised by the Army for warming field rations. "It is not easily extinguishable by wind, does not give off noxious or unpleasant gases, and burns with an almost unnoticeable flame." The tablet is made of trioxane and is ignited by a match.

German Arms Codes—The article by W. H. B. Smith in *The American Rifleman*, 95:35-8 (April, 1947) will enable firearms technicians to identify the source of German small arms and ammunition. Although the list is not complete it is sufficiently so to serve in most cases. The code abbreviations are tabulated in alphabetical order in two groups, arms and ammunition.

A New Air Rifle—Major General J. S. Hatcher describes the Sheridan Pneumatic Rifle in *The American Rifleman*, 95:28, 29 (April, 1947) as a chamber or reservoir type having a 20-inch barrel rifled with three lands and grooves, right-hand twist, one turn in twelve inches, and firing a special 15.3 grain bullet, .195 inches in diameter. With multiple action of the pump velocities as high as 770 ft. per second have been attained. Four strokes of the pump will cause a complete penetration of one inch pine.

Indoor Pistol Targets—In order to have a system by which the range officer can control the shooter who fires after command or whistle, a device of a novel design has been constructed which enables the range

officer to turn the targets towards or away from the shooter. Construction is very simple and the cost small due to utilization of the present target carrier and ordinary gas or water pipe with which to make the necessary alterations. When completed the range officer can stand behind the shooter and work a control lever to turn the targets. This alteration was made on the standard Caswell target carrier and with slight modification could be fitted to any type of carrier system. The pilot model is in use at the present time on the National Rifle Association range, Washington, D. C. Diagrams are available in *The American Rifleman*, 94: 26, 34 (Sept., 1946), in an article by I. L. Murphy, Jr. (Contributed by C. J. Panush, Chicago Police Scientific Crime Detection Laboratory.)

Pan American Medicolegal Congress—The First Pan American Medicolegal Congress will be held in St. Louis, January 19-20-21, 1948, under the auspices of the Board of Police Commissioners, Metropolitan Police Department, St. Louis, Missouri. This congress will be conducted under the joint leadership of Dr. R. B. H. Gradwohl, M.D., Director, Research Bureau, St. Louis Police Department; Dr. I. Castellanos, Director, Gabinete Nacional de Identification, Havana, Cuba, and Major Sidney Kaye, Toxicologist and Associate Director, Research Bureau, St. Louis Police Department, Secretary-Treasurer.

Contributions—Many unpublished methods and techniques are in use today which would be of definite interest and help to other workers in the field of scientific crime detection. It is planned to make available through the Technical Note Section a number of these procedures which would not warrant as extensive and lengthy treatment as is required of a leading article. Proper credit will be given in each instance to the person submitting notes of this nature. Contributions should be brief. These notes should be forwarded directly to Joseph D. Nicol, Technical Note Editor, Chicago Police Scientific Crime Detection Laboratory, 1121 South State, Chicago 5, Illinois.
