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Police Science Notes

POLICE SCIENCE NOTES

TECHNICAL ABSTRACTS

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Restoration of Faded Writing—Identification of a Body by Means of a Tailor's Label—Methods for the restoration or intensification of writing or printing are applicable in many types of cases other than those pertaining strictly to document investigation. Writing or printing on cloth, wood, leather, or other material may be removed intentionally for criminal purposes, or may become illegible due to other causes, such as wear, and exposure to atmospheric conditions.

Laundry marks and cleaners' marks are often used by the police for ascertaining the identity of the owner of a garment. In some instances the writing or printing may be so faded or indistinct that it cannot be deciphered by ordinary inspection. In such cases the use of filtered ultra-violet light, fuming processes, or photography can be utilized to render the illegible parts visible. The exact procedure to be used, and the results to be expected, depend of course, upon the composition of the material in the writing itself. A case of this kind, involving an illegible name on a tailor's label, was investigated recently by the Chicago Police Scientific Crime Detection Laboratory. The label was removed from the coat of a man who had been killed by a train, and it constituted the only clue to his identity. Upon examination it was found that the printed name and address of the tailor were clearly visible, but the ink writing at the bottom of the label was so faded and indistinct that only a date, "July 20," could be read. (See Fig. 1-A.) An examination was made of the label with the aid of filtered ultra-violet light and by this means the name "Wiliam Rodlaff" was disclosed; as a result of this examination an identification was made of the body.

Following the inspection of the label in ultra-violet light an attempt was made to restore the writing by fuming it with sulphocyanic acid vapor.[1] The procedure was entirely successful, the name appearing brilliant red against the white background of the cloth. While in this condition the label was photographed on Eastman Process Panchromatic film with a Wratten No. 49 filter (Fig. 1-B).

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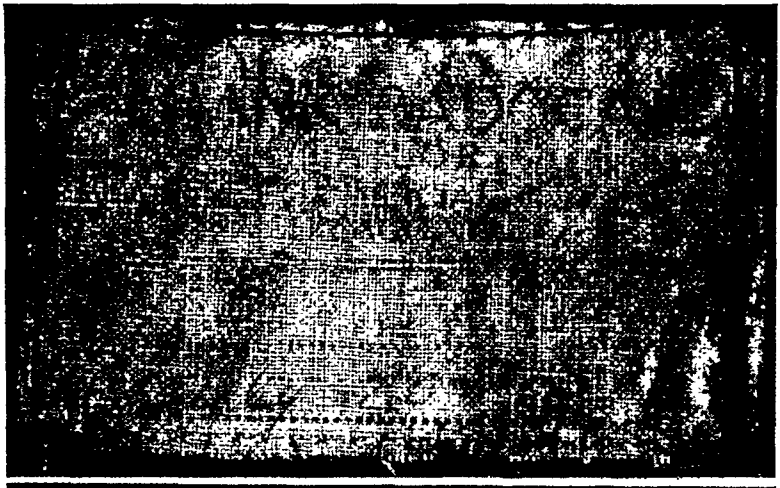
[1] For a description of the technique see O'Neill, M. E., "The Restoration of Obliterated Ink Writing," J. Criminal L. and Crim., 27(4):574-577 (1936).

A



B

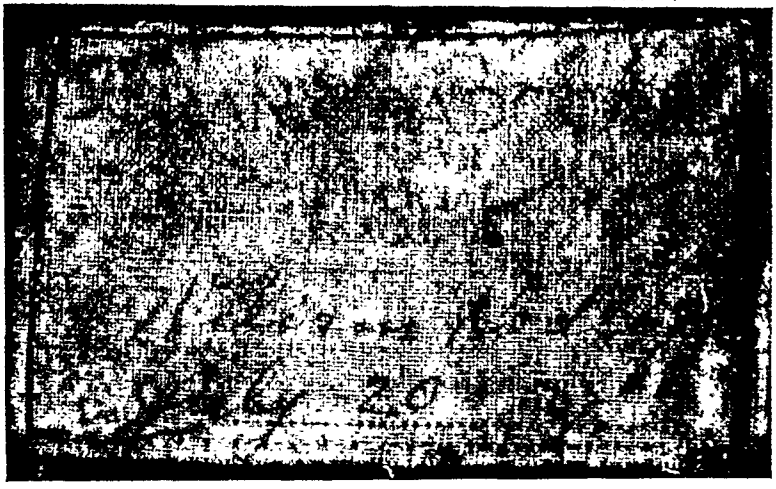


FIGURE 1

(A) Tailor's label, as it appeared in its original condition when presented for laboratory examination. (Photographed on Panchromatic-Process film.)

(B) Same label after the faded writing had been intensified by fuming with sulphocyanic acid vapor. (Photographed on Panchromatic Process film with Wratten No. 49 filter.)

Legal Decisions

Fred E. Inbau

Spermatozoa Identification—In *White* v. *State*, 128 S. W. (2d) 51 (Tex. Cr. App., 1939), involving a prosecution for rape, a physician testified for the state that he had examined the victim's vagina shortly after the offense and found live sperm present. He further testified that in view of their live condition the sperm must have been less than six hours old. To the doctor's testimony the defendant, a negro, objected on the ground that since science could not determine from whom the sperm came, or even whether or not they came from a colored or white man, "such testimony was entirely speculative." Upon appeal the Texas Court of Criminal Appeal held: "We think that the objection to the testimony would apply to its weight rather than to its admissibility."

Police Science Book Reviews

Edited by *Paul V. Trovillo*†

Clinical Laboratory Methods and Diagnosis. By *R. B. H. Gradwohl*, M.D. (Director of the Gradwohl Laboratories and Gradwohl School of Laboratory Technique; Director of Research Laboratory, St. Louis Metropolitan Police Department.) The C. V. Mosby Co. (St. Louis, 1938) Second edition. Pp. 1607 with 492 illustrations and 44 color plates. $12.50.

The purpose of this book, as stated in the preface, is "to help the clinician, the laboratory worker and the medical student to learn laboratory diagnosis." Although the major part of this ponderous volume is devoted to clinical laboratory methods and the interpretation of their results, the book contains two chapters which should be of interest to readers of this Journal. These are on "Toxicologic Technic" and "Detection of Crime by Laboratory Methods." The latter chapter is of special import in view of the author's statement that it is based upon his "experience as Director of the Research Laboratory of the St. Louis Police Department" (p. 8).

Although this reviewer does not pretend to be qualified in clinical pathology and its related fields, it does appear, nevertheless, that the problems of biochemistry, hematology, bacteriology, serology, histology, parasitology and other medical sciences treated in this book are adequately handled. The various procedures are given in simple language, so that even students with very meager preliminary scientific training will have no difficulty in using this book as a text and reference. As a result of the author's very fundamental approach, we find much space given to such simple considerations as how to read a burette, to compute the per cent strength of a solution and to perform the ordinary calculations of analytical chemistry. The volume is truly encyclopedic in its scope.

The chapter on "Toxicologic Technic" (49 pages), however, is a

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hodge-podge of methods for the isolation and identification of poisons. The author denies any intention of presenting a complete treatise on the subject of Toxicology (p. 1141), and one must agree that this disclaimer is justified. In fact, the treatment of toxicologic procedure is so perfunctory that it might better have been omitted altogether. The chemical methods for determining the metallic poisons are antiquated. Three lines are devoted to the only really sensitive chemical procedure for determining lead (the dithizone method), although the accurate spectrographic method is discussed. The methods for alcohols, cyanide and chloroform as employed by the New York Medical Examiner's Laboratory are discussed; also their procedure for determining death by drowning through blood analyses. Professor Harger's methods for determining alcohols are presented. Discussions of other poisons are extremely sketchy.

Some of the statements which one finds are startling. Thus, on page 1164, a titration of 7 cc. of N/10 sulphuric acid brings the conclusion that the specimen contained 0.199612 gram of morphine, and again, on page 1155 one finds that as a result of a titration of 1.53 cc. of standard thiosulphate solution, the author reports that a specimen of urine contained 0.5269473 mg. of lead. In his voluminous work, the author might well have included a paragraph or two on the uselessness of insignificant figures.

In the detection of cyanides in tissues, a biological test is recommended (p. 1160). This consists of feeding some of the test material to a guinea pig. If no symptoms develop after a 15 cc. dose, cyanides are absent.

The chapter on "Detection of Crime by Laboratory Methods" (42 pages) does not attempt to cover the entire field, but purports to "cover only the tests which stand out as standard methods which might be used by the clinical pathologist and chemist . . ." (p. 1190). The inference is that clinical pathologists and chemists, by following the procedures outlined in the book, can provide local police with the type of expert assistance required in their criminal investigations and prosecutions. Such an inference is grossly misleading, for the outlines given are extremely cursory. For example, the examination of hairs requires two-thirds of a page for its elucidation, while the detection of changes in writing on paper receives a half page. Spectrographic analysis is discussed in its forensic aspects and it is suggested that by such investigation *and by no other means,* one readily is able to identify glass from a certain broken automobile headlight or prove that paint on the body or clothing of a victim of a "hit-and-run" driver has come from a certain automobile (p. 1195). Unfortunately, comparatively few clinical or chemical laboratories have the spectrographic equipment or technically trained staff to employ such remarkably incriminating techniques. The use of the moulage process, as outlined, discusses only the patented materials of the late Dr. Poller. No other methods are mentioned. The directions given are essentially those which are furnished by the American sales agent when one purchases the requisite patented materials.

If firearms identification were as simple as suggested in the five pages (over half of which is taken up by illustrations) devoted to the

subject, the use of guns by the criminal element would soon become unpopular. Needless to say, the discussion is exceedingly superficial.

It is interesting to note that three pages are devoted to the "paraffin powder nitrate process." It is this reviewer's impression that among scientific investigators it is fairly well agreed that this test is not highly probative and is chiefly of value in corroborating other findings. A description of this procedure is not found in the ordinary handbooks on criminal investigation, forensic chemistry, or forensic medicine, and it is surprising to find it listed among the "standard methods." The author discusses the use of Lunge's reagent, which gives a blue color reaction with nitrates, and "Brucina's" reagent, which gives a red reaction. The composition of Lunge's reagent is given completely, but unfortunately no reference is made to the formula employed by "Brucina" in preparing his test solution (p. 1204). The reader is left in a quandary as to the real utility of this test when the author cites on the one hand the glowing and enthusiastic report of the Mexican authorities, and, on the following page, the pessimistic and discouraging report of the G-Men. The author does not reveal his own estimate of the value of the paraffin cast method of detecting nitrate residues on an assailant's hand following the firing of a revolver.

Fingerprinting and photography are briefly mentioned.

In matters involving the identification and grouping of blood by serologic methods, as well as in the examination of seminal stains, the author is on more familiar ground. These sections, though brief, are creditably handled.

The clinical pathologist or chemist who ventures to give expert testimony in criminal cases on the basis of the material contained in this chapter would certainly find himself in a most embarrassing position.

With respect to these two chapters one might fairly conclude that physicians who admittedly confine their practice to clinical pathology could very well apply the same limitation to their writings.

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