Journal of Criminal Law and Criminology

Volume 50
Issue 3 *September-October*

Article 20

Fall 1959

Police Science Technical Abstracts and Notes

POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

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Paper Electrophoretic Identification of Microquantities of Some Toxicologically Significant Alkaloids and Comparison With Chromatography—Charles Buff, Joseph Orantes, and Paul L. Kirk, *Microchemical Journal*, *3*(1): 13–18 (1959). Common alkaloids were separated by paper chromatography and paper electrophoresis. Either procedure was satisfactory for identification purposes, although electrophoresis proved to be more reproducible. (JDN)

Studies in the Semicontinuous Liquid Microextraction of Alkaloids and Barbiturates—Wellon Collom, and Paul L. Kirk, *Mikrochemica Acta*, 1959(1): 87–94 (1959). Using the method of Kirk and Brown (*Mikrochemica Acta*, 1957: 714) recovery studies were made on nine barbiturates and thirty-seven basic compounds. Barbiturate recovery exceeded 50% while only a few alkaloids failed to come up to this level. All compounds investigated could be recovered in detectable quantities. A scheme for extraction of biological material is given. (JDN)

Driving Under the Influence—F. S. Hansman, *The Australian Police Journal*, *13*(2): 116–37 (1959). *The Australian Law Journal*, 27:. A review of chemical tests for intoxication. (JDN)

Pursuit Driving—E. E. Dougherty, *Alumni News*, Southern Police Institute, *3*(2): 3, 4, 7–11 (1959). A discussion of high-speed driving by law enforcement officials, treating driver attitude, car maintenance, safety, and various driving maneuvers. (JDN)

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Role Playing—R. L. Soule, *Alumni News* Southern Police Institute, *3*(2): 5, 6, 11 (1959) The technique of role playing is suggested as a means of training police recruits. This procedure will teach students by re-enacting actual problems that have occurred on-the-street. The suggestions contained in this article will be of particular interest to training officers. (JDN)

A Vacuum Sublimation Apparatus for Separating and Purifying Small Quantities—George Schmidt, *Mikrochemica Acta*, 1959(3): 406–18. A modification of the vacuum sublimation apparatus of Gettler, Umberger, and Goldbaum so that the process is conducted horizontally instead of vertically. Quantities as low as a few micrograms can be examined. (JDN)

Science in Examination of Questioned Documents—C. D. Brooks, *Postgraduate Medicine*, *25*(6): (June 1959). The author looks at the field of questioned document examination in an effort to answer the question, "Is the identification of handwriting considered an exact science?" He defines science in such a way as to reach the conclusion that this field of work can be considered scientific and that there have been scientific workers in the field since the early days of this century. (OH)

Are Your Photographs Legal?—Richard E. Hinman, *The National Photographer*, *10*(6): 285–286, (June 1959). The author, a commercial photographer in Miami, Florida, presents a brief discussion of photographs in court work aimed primarily at the commercial photographer. He points out the wide scope of possible photographs and discusses the advantage of stamping each photograph with the following information: Address, Location, Direction of View, Time, Date,

Camera, and the photographer's name, together with a statement, "This print made from original unretouched negative." This information has enabled attorneys in the area to introduce photographs with a minimum of objection and need of testimony by the photographer. (OH)

Photography Is An Engineering Tool—James B. Cooper, Jr., *The National Photographer*, *10*(5): 226–229, (May 1959). The author discusses various types of photography in engineering plants including high speed motion pictures, design photographs, plant construction photographs, and photographs during production steps. Techniques are not discussed in detail, but the illustrations in part show camera set ups which could be helpful to forensic photographers, especially those required to photograph indoor crime scenes. (OH)

Field Macrophotograph—Charles D. Phalan, *The National Photographer*, *10*(6): 281–283, (June 1959). This is a second of a series "Photography Is A Tool In Industry". The author discusses equipment which he uses and modifications of the equipment such as extension tubes for 35 mm. cameras and mounted mirrors to enable him to prepare macrophotographs under various field conditions. Lighting is also adequately discussed, and illustrations are helpful. (OH)

The Identification of Urine—*Scientific Criminal Investigation Bulletin*, *2*(1): (March 1959), University of Rhode Island, Kingston, Rhode Island. Should identification of urine stains become necessary, new identification procedures are suggested. Urine contains appreciable quantities of the chemical compounds creatinine and indican not found in other physiological fluids.

Creatinine Test: The dried stain, or a concentrate of the stain on a strip of chromatographic paper, is treated with one drop of 2 normal sodium hydroxide, and one drop of 5% picric acid is then added. The presence of a red-orange color indicates the presence of creatinine.

Indican Test: The stain, or a portion of the stain, is extracted with a small quantity of distilled water or saline solution. One ml of resorcinol reagent (1 g. resorcinol per 20 ml of ethyl alcohol) is added to the urine extract to block the oxidation of indican to indigo blue. One ml of cupric bromide is added to the above solution to oxidize the indoxyl to indican, and the resulting solution is extracted with amyl acetate. A red color in the amyl acetate layer is a positive indican test. (WEK)

Determination of the Time of Death, A Consideration of Post-Mortem Physical Changes—Herbert P. Lyle, Klaus L. Stemmer, and Frank P. Cleveland, *Journal of Forensic Sciences*, *4*(2): 167–75 (April 1959). "Can the police officer, medical investigator, or other lay observer recognize and record facts pertaining to the dead body that will be of value in determining the time of death, employing only a visual or manual inspection of the body?" The authors conclude that "the exact time of death cannot be determined by visual or manual examination of the dead body". "The duration of the time interval after death may be estimated within broad limits by the consideration of the influencing factors in conjunction with the changes in the body." "The fewer the variable factors and the greater the number of body changes evaluated, the greater will be the accuracy of the estimate of the time of death." (WEK)

Firearms Discharge Residues—Harold C. Harrison and Robert Gilroy, *Journal of Forensic Sciences*, *4*(2): 184–99 (April 1959). A procedure for the detection of firearm discharge residue employing three chemical reagents only. The tests are colorimetric, and the technique is sufficiently simple to eliminate the necessity of technical training as a prerequisite for performing the tests. The results of the tests are shown as definite colors on a piece of cloth, and the colors are stable over a considerable period of time.

Positive results were obtained in all cases in which revolver-type weapons were used. In a few instances, positive tests were obtained when semi-automatic pistols were used. However, it is necessary that a weapon leak gases and residue in order to deposit discharge residues on the hands.

No false tests were obtained nor failure of tests to detect antimony, barium, and lead were encountered because of occupational contamination of the hands. There was excellent correlation between the chemical tests for firearms discharge residues and spectrochemical tests of the same swabs.

Detection of Firearm Discharge Residues: Proposed Procedure.

1. Removal of Residues: Swab surface with 2″