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## Police Science Technical Abstracts and Notes

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## POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

Joseph D. Nicol\*

Suppression of Cyanogen Bands in the Direct Current Graphite Arc by Lithium Chloride—Robert G. Keenan and Charles E. White, *Analytical Chemistry*, 25 (6): 887-892 (June, 1953). A method of suppressing cyanogen bands in the 3500 to 4800 Å. region of the spectrum is proposed, which will permit the use of this region for qualitative and quantitative determinations. The authors use lithium chloride matrix in the cupped carbon to suppress the objectionable cyanogen bands without decreasing the sensitivity of the residual lines of other elements in those wave length regions. Details of the experimental work are given, and comparisons made between salts of lithium and other elements as potassium and sodium. Outcome of exposure conditions are also discussed. (Submitted by John F. Williams, Missouri State Highway Patrol Laboratory.)

Determination of DDT and Related Substances in Human Fat—Arnold M. Mattson, Janet T. Spillane, Curtis Baker, and George W. Pearce, *Analytical Chemistry*, 25 (7): 1065-1070 (July, 1953). The authors describe a separation method for DDT from biological materials, particularly human fat, with the use of a chromatographic column and determination of the extracted material by absorption spectra. In some fifty specimens upon which this paper is based 96 per cent of the samples showed detectable amounts of DDT and DDE. In no cases did they find DDT alone, and DDE was present to the extent of 39 to 86 per cent. This suggests that DDE is a degradation product of DDT. Total DDT plus DDE ranged from "0" to 86 p.p.m. Of interest in this respect are several specimens which were collected before the advent of DDT, which did not show positive tests in this respect. These specimens were not taken on poison cases. (Submitted by John F. Williams.)

Preparation of Biological Material for the Determination of Trace Metals. Method for the Destruction of Organic Matter in Biological Material—G. Middleton and R. E. Stuckey, *Analytical Chemistry*, 25 (12): 1936 (December, 1953). A method of destruction of organic matter in biological materials was discussed by G. Middleton and R. E. Stuckey of the British Drug Houses, Limited, at the October-November meeting of the Society of Public Analysts. Their method consisted of heating biological material with dilute nitric acid to the point where it left a black char. Upon retreatment with small amounts of nitric acid brown fumes were evolved, and the mixture swelled into a froth and ultimately left a hard black residue. Successive repetitions of this treatment with further small quantities of nitric acid and heating on a hot plate at 300° to 350° C. resulted in the production of a white residue which did not char on heating. Variations of the procedure necessary for different materials was discussed. (Submitted by John F. Williams.)

The Paraffin Test—Dr. J. H. Mathews, *The American Rifleman*, 102 (2): 20 (February, 1954). Dr. Mathews describes the controversial paraffin or dermal nitrate test in a very simple and down to earth manner. He points out the possibilities and limitations of the test and sums up the article with the following conclusions: "It is the author's opinion that the 'dermal nitrate test'

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has considerable value when properly used and when properly interpreted. It must be done by one who is skilled and experienced and preferable by one who has had some training in chemistry. A negative test, for reasons stated earlier, has no value as it proves nothing. A positive test may have considerable value. The test is not an infallible one, but it often is useful." (Submitted by John F. Williams.)

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**A Novel Photographic Technique for Preparing Halftone Masters for Diazo Type Reproduction**—H. Carl Haw, *Photographic Science and Technique* (PSA Technical Quarterly): 13-16 (February, 1954). A method developed by this writer for reproducing continuous tone illustrations came about because of the need of a small quantity of reproductions (25 to 250 copies) in connection with various classes of reports. Police Departments having diazo type equipment may find the method applicable. The author describes the preparation of a negative and a screened master which is used for the final diazo printing. After this master has been completed, it is reported that 250 prints can be made in a period of 30 minutes at a cost of \$3.40 for labor and materials. (OH)

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**The London River Police**—W. C. Batson, *International Criminal Police Review*, Number 74: 3-11 (January, 1954). An history of the 154 years of service of the Thames Police is given. Of particular interest are the descriptions of equipment for dragging, locating, and recovering objects under water. These include permanent magnets, steel nets, three pronged grapnels, trip-drags, and chain drags. Rescue equipment and resuscitators are carried as standard equipment. The personnel are selected for special aptitudes and receive special training for this duty.

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**The Examination of Typewriting**—J. Gayet, *International Criminal Police Review*, Number 74: 25 (January, 1954). Glass alignment plates for 25 mm., 0.1" and 2.6 mm. spacing are discussed. They consist of small rectangles and are similar to plates designed by Osborn and Stein.

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**Struck by Lightning**—J. H. Rogers, *International Criminal Police Review*, Number 74: 12, 13 (January, 1954). The burns found on a body struck by lightning are described. Money in the watch pocket and a jimmy inside the coat sleeve produced areas of burns adjacent to them.

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**Photography in Confined Spaces**—S. V. Grundy, *The Police Journal*, 27: 42-8 (January, 1954). A fixed focus camera is supported on a bracket attached to a large C clamp. The exposures are made with open flash, the shutter being tripped by a long string supported by slant-drive picture hangers. With this device a camera can be supported by light fixtures, door jambs, and the like.

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**The Use of Aniline Dyes and Anthracene in the Detection of Petty Theft**—T. J. Clogger, *The Police Journal*, 27: 51-6 (January, 1954). The use of aniline dyes, phenolphthalein, anthracene, quinine sulphate, and silver nitrate as theft detection powders is discussed.

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**Conference on Delinquent Youth**—New York University Graduate School of Public Administration and Social Services held a one day conference on Delinquent Youth April 9, 1954. The conference considered the nature of

juvenile delinquency, methods of handling and investigating the problem, personal and social factors involved, and various other aspects.

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**Science in Law Enforcement**—Western Reserve University in cooperation with the Cuyahoga County Coroner's Office is to conduct a one week program on Science and Law Enforcement June 21-26, 1954. Details of the program and available facilities can be obtained from Oliver Schroeder, Jr., Director at the Law—Medicine Center, 2145 Adelbert Road, Cleveland 6, Ohio.