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## Police Science Technical Abstracts and Notes

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## POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

M. Edwin O'Neill

### Examination of Paper Fibers

In the examination of questioned documents, microscopic investigation of the paper itself is sometimes undertaken for the purpose of determining its source or manufacturer. Occasionally, isolated paper fibers or small paper fragments may be involved in an investigation. An interesting case of this kind is mentioned in the Annual Report for 1938 of the Institute of Medical Research of the Federated Malay States.<sup>1</sup> The report contains the following statement: "One of the document cases

investigated involved the question whether a revenue stamp had been removed from one document and placed upon another. Microscopical examination of the back of the stamp showed the presence of fibers of a certain type of paper, which were not found in the questioned document, but agreed with those of paper similar to that from which the stamp was thought to have been removed." No details of the examination are given, but the principle of transfer of fibers is one to be remembered in investigations of this nature.

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### A New Mounting Medium

A new material which can be used in place of Canada balsam for mounting microscopic preparations is now available. The new compound, isobutyl methacrylate, is free from color, and, unlike balsam, will not turn yellow with age. It also has the advantage of being quick-drying. The material is soluble in xylol or benzol and has a refractive index of 1.477. One use which

has been suggested for it is as a substitute for the cover glass. The slide containing the preparation is dipped in a thin solution and drained. Ordinary clear paraffin oil is then used as an immersion liquid. The new material may be obtained in either the dry form or in clear xylol solution from the Central Scientific Company, Chicago, Illinois.

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### Identification of Urine Stains on Cloth

A method for the identification of urine stains is described in the January, 1940 issue of the *Analyst*.<sup>2</sup> The author, G. N. Gee, describes the difficulties involved in making the usual chemical tests for urea, especially if the stain is on woolen material. The procedure he recommends, in brief, is as follows: A small portion of cloth is removed, placed in a test-tube, and extracted three times with methyl alcohol (about 5 ml. for each extraction), the extracts filtered into a boiling tube and evaporated to dryness. The residue is then re-extracted three times with moisture-free ace-

tone and the combined extracts concentrated down to 4 or 5 ml. This extract is evaporated drop by drop on a microscope slide heated over a water bath. If the stain is urine "there will be a pale yellow transparent ring" from which urea separates in needle-shaped crystals which can be identified by microscopic examination. As a confirmatory test the residue is treated with a drop of concentrated nitric acid and the resulting urea nitrate identified by the "small separate diamond shaped plates or a series of elongated hexagons" which crystallize out.

<sup>1</sup> *Analyst*, 65: 460 (1940).

<sup>2</sup> Gee, G. N., "Detection of Urea in Urine Stains on Carpets," *Analyst*, 65: 25-26 (1940).