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## Police Science Notes

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## POLICE SCIENCE NOTES

### TECHNICAL ABSTRACTS

By M. EDWIN O'NEILL†

Identification of Burglar's "Can Opener" by its Silhouette in Dust—  
An interesting case involving the identification of a burglar's tool is reported in the October, 1937, number of the *Archiv für Kriminologie* by Dr. Wladyslaus Sobolewski, of the Polish National Police.<sup>1</sup> Although the circumstances of the case are somewhat unusual, the investigation by the police and the technical laboratory is illustrative of the successful results that can be obtained by the careful observation and preservation of seemingly insignificant traces found at the scene of a crime.

In the deposit room of a courthouse burglars effected the opening of a metal safe by cutting out a section of the outer casing around the lock with a so-called "can opener." Although several tools were left behind by the burglars an examination of them disclosed no identifying traces. The "can opener" itself was not present. The floor, as well as the objects near the safe, was covered with a layer of finely pulverized dust which had obviously originated from the packing material between the outer and inner metal casings of the safe, and had gradually settled out of the air in the room. Footprints were found in the dust on the floor but they were too dim to be of value. However, on the top of a table in the room there was observed the outline of the cutting head of a "can opener" which was formed in silhouette by the fine dust settling upon the tool while it had laid there during the looting of the safe. This trace was photographed by the police in natural size and preserved for future reference. Several months later a number of well-known safe breakers were arrested while in the act of burglarizing a safe in the same city. Among the tools found in their possession was a "can opener" of the type used in the courthouse burglary. This was sent to the police laboratory for comparison with the reproduction of the dust imprint. In order to make such a comparison the opener was placed on a piece of black paper and fine plaster dust was blown upon it with the aid of a dust sprayer. After carefully removing the can opener the trace was photographed. Three rectangular areas were cut out of this photograph and the resulting "stencil" pasted upon the copy of the dust imprint. Perfect correspondence was established.

The author states in conclusion "that the successful results of scientific and technical police laboratories are possible only if the police investigating at the scene of the crime cooperate intelligently, and they can do this only if they are kept informed of developments of scientific criminal investigation by regular reading."

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<sup>1</sup>Sobolewski, W., "Überführung eines Geldschranksbrechers durch Identifizierung der Staubsilhouette seines Knabbers," *Archiv f. Krim.* 101:149-153 (1937).

**Reproduction of Latent Fingerprints for Poroscopy Studies**—Although a few cases have been reported in which poroscopy was utilized for purposes of identification, it is a well-known fact that fragments of latent fingerprints found on suspected objects rarely exhibit the characteristic pore details upon which an identification must be based. Even in cases where the pores are clearly represented the ordinary developing operations are entirely unsuited for their investigation and therefore special photographic methods have been employed by a number of dactyloscopists in order to preserve any peculiarities of the pores, such as size, form, number, and relative position, which may be present.

Dr. G. Bohne, of the University of Cologne, describes a photographic method which he has found to be particularly suitable for poroscopy studies, and one having certain features of superiority over those previously advocated. A discussion of the technique appears in the March-April, 1938, number of the *Archiv für Kriminologie*.<sup>2</sup>

The apparatus used by Dr. Bohne is the so-called "Panphot," manufactured by the E. Leitz Company. If the imprint is located on a piece of glass, a dark field photograph is taken so that the papillary lines are shown as white against the deep black background of the glass. The necessary enlargement is obtained with the Leitz Micro-Summar 35 mm. and 24 mm. lenses. If the desired print is found on an opaque polished surface, the Ultropak is used in combination with the Panphot, thus permitting an almost vertical lighting of the object, which is necessary for producing the desired contrast between imprint and background.

**Forensic Roentgenography**—The anatomical studies made upon the bodies of the two victims in the now famous Ruxton case, tried in Scotland in 1936, and particularly the identifications made as a result of the examination of the skulls, have stimulated interest in methods of personal identification which might be utilized in instances wherein dismemberment, disintegration, or some other cause has rendered the application of the fingerprint method impossible. A method of considerable potential value involving the use of roentgenograms of the nasal and accessory sinuses and mastoid processes was proposed several years ago by Dr. Frederick M. Law of New York following his successful identification of a badly disfigured body by this means.<sup>3</sup> Although the case reported by him seems to be the only one of its kind on record, it is considered of sufficient interest to be recounted here.

The person in question was operated upon for left-sided matoiditis in January, 1920, and in the year 1925 went to India. On June 8 of that year he suddenly disappeared from his camp on the Indus River in Kashmir. Seventeen days later the bodies of two white men, disfigured beyond recognition, were recovered from the river at a distance of 70

<sup>2</sup> Bohne, G., "Ein neues Verfahren zur Reproduktion von Fingerspuren auf ebenen Glasflächen, besonders bei starken Vergrößerungen," *Archiv f. Krim.* 102 (3-4):147-153 (1938).

<sup>3</sup> Law, F. M., "Roentgenograms as a Means of Identification," *Amer. J. Surg. N. S.*, 26:195-198 (1934).

miles below the camp. Upon examination of the bodies it was found that both bore the scar of a left-sided mastoid operation, one a radical and the other a simple operation. The scar of the simple operation indicated that the remains were probably those of the person who had been operated upon in New York and whose roentgenograms were in the possession of the author, and this body was finally shipped to the New York City Morgue for examination. With reference to the identification made by Dr. Law, he writes as follows:

"Fingerprints on record would have been of no aid, for one arm was gone and there was scarcely any flesh on the bones of the other hand. The facial bones were almost bare of flesh. However, an examination of the sinuses and mastoids with a portable machine at the morgue, and comparisons of the resulting films with the plates on file, established beyond any possibility of doubt that both sets of roentgenograms were of one and the same individual. The operation on the left mastoid following the first examination had destroyed its value for identification, but as both sides had been examined, the right mastoid was available for comparison. Thirteen points of identity in the sinuses and seven in the right mastoid were noted; the number could have been extended indefinitely.<sup>4</sup>

In discussing the application of this procedure as a possible additional means of identification, Dr. Law points out that the use of roentgenography depends only upon economic considerations, since the "feasibility of the method and validity of the identification have been fully established."

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## LEGAL DECISIONS

BY FRED E. INBAU

**Comparative Micrography—Comparison of Wood, Nails, and Glue in a Bombing Case**—Expert testimony played a very important part in the trial of the case of *Commonwealth v. Fugmann*, 198 Atl. 99 (Pa., 1938), in which the defendant was prosecuted and convicted of murder committed by means of sending through the mail a package containing an explosive, which was arranged in such a way as to explode upon its being opened by the intended victim. Mr. Arthur Koehler of the Forest Products Laboratory of the Department of Agriculture testified as to the similarity between wood used in the construction of the bomb mechanism and wood found in the defendant's possession—the similarity resulting primarily from impressions left on the wood at the time of its planing in the lumber mill. Another member of the Forest Products Laboratory, Dr. Elwin E. Harris, testified that the glue used in fastening certain pieces of wood in the bomb container was the same in chemical content and source of manufacture as a supply found in possession of

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<sup>4</sup>For a detailed report of the findings see also: Culbert, W. L., and Law, F. M., "Identification by Comparison of Roentgenograms of Nasal Accessory Sinuses and Mastoid Processes," *Jour. Amer. Med. Assoc.* 88:1634-1636 (May, 1927).

the accused. Mr. Stanley R. Keith, a metallurgical engineer from Montclair, New Jersey, testified that the nails in the box containing the bomb had been made by the same machine and die as certain nails found in the defendant's possession.

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**Wire Tapping Evidence**—The United States Circuit Court of Appeals (Second Circuit) recently held, in *United States v. Bonanzi*, 94 Fed. (2d) 570 (1938), that under Section 605 of the Communications Act of 1934, and in view of the recent Supreme Court decisions in *Nardone v. United States* (see notes in this Journal, vol. 28, p. 758), "the party who seeks the benefit of evidence gained by wire tapping . . . is the one who should know what kind of a communication was intercepted and be bound to disclose the fact"—in other words, the burden of proving that the communication is of an intrastate nature is upon the prosecution.

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**Soleprint Comparison Admitted as Evidence** — In *Commonwealth v. Bartolini*, 13 N. E. (2d) 382 (Mass., 1938), the Supreme Court of Massachusetts upheld the admissibility of evidence as to the identity between the soleprint impressions on the linoleum floor of a bathroom in which a murder had been committed and the defendant's prints. The court found that there was ample evidence to indicate that soleprints, like fingerprints, remain constant throughout life and furnish adequate and reliable means of identification.

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**Moulage Cast Admitted as Evidence**—In *People v. Dwyer*, 75 Pac. (2d) 653 (Cal. App., 1938), a plaster cast of a footprint found at the scene of a burglary was admitted in evidence for the purpose of a jury comparison between it and the shoes belonging to the defendant. However, the witness who made the cast was not permitted to testify that there were indications in the cast that the shoes which made the print had been recently half-soled, as were the defendant's. This was held to be a jury function and not that of an expert.

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**Comparative Micrography—Testimony as to Similarity in Specimens of Twine**—In *Commonwealth v. Bartolini*, *supra*, evidence was admitted that certain green window shades and pieces of twine found in the defendant's home were similar to the green window shades and twine with which portions of the body of the deceased had been wrapped. Upon appeal the Massachusetts Supreme Court held that "This evidence was properly admitted as tending to prove that the defendant had access to these materials, and, in connection with the other evidence, to identify him as the person who committed the crime."