Journal of Criminal Law and Criminology

Volume 27
Issue 4 *November-December*

Article 14

Winter 1936

Police Science Notes

POLICE SCIENCE NOTES*

Reproduction of Footprints—Two new procedures for reproducing footprints are reported in recent numbers of *The Police Journal* (England).

One article entitled "A Method of Reproducing Footmarks, etc., from Certain Objects,"[1] describes a procedure for obtaining reproductions of footprints and similar traces from linoleum, cloth, etc., which are difficult to photograph *in situ,* because of the underlying pattern or immovability of the object. An unexposed photographic film which has been fixed, washed and dried in the ordinary way is moistened slightly with water (not made wet) by swabbing with cotton, wool or a soft cloth. The film is held flat until the surface moisture is absorbed or evaporated, leaving the surface "tacky." The film is then placed on the marks, smoothed over to make even contact and then peeled off. It is pinned to a board or weighted down while drying, to prevent curling. The "lift" is then photographed before a black background with oblique lighting, or, if the impression has sufficient density, a print is made directly from the film.

In the other article Dr. F. W. Martin, of the Medicolegal Department of Glasgow University, recommends the Poller positive materials, either Hominit or Celerit, for making casts of footprints in sand or dry earth.[2] A wall of plasticine is placed around the impression, and the Hominit—which has been slowly melted—is spread uniformly over the print. After approximately five minutes, to allow for cooling, the cast is lifted out and adhering soil particles washed off in water. The author has recommended elsewhere the use of the same material, mixed with graphite, for taking casts of gun barrels.

[1] (The Police Journal, *9* (3): 366-368. 1936).

Fixation of Latent Fingerprints—A new process for the fixation of latent fingerprints developed with iodine vapor has been devised by Dr. M. Wagenaar of Rotterdam, Holland.[3]. The method involves the use of a specially prepared paper with a sensitized coating, which is placed over the developed print like a lifting tape, and to which the papillary picture is transferred. It is prepared by painting ordinary paper with a material of the following composition: rice starch, 1 g., water, 20 cc., potassium iodide, 2 g., and thymol 0.3 g. Before the paper is entirely dry it is gently pressed against the developed print and lifted off. The iodine causes the starch to become colored a

[2] Martin, F. W., *A Simple Method of Taking Footprints.* (The Police Journal, *9* (4): 450-452. 1936).

[3] Wagenaar, M., Vorschlag eines Verfahrens Zur Fixierung der mit Jod sichtbar gemachten latenten Fingerabdrücke. (Archiv. f. Krim. *97*: 45-48. 1935).

*Edited by Fred E. Inbau and M. Edwin O'Neill of the Scientific Crime Detection Laboratory, Northwestern University School of Law.

dark brown, and with the proper technique the imprint reproduces the iodine picture in all details. According to the author, transfers made in this way can be preserved for several years without fading, but he suggests that they can be made even more permanent by varnishing with a 3% solution of gum dammar in benzol.

If a lifted print is not desired, it is possible to fix the developed fingerprint on the object itself by applying the pasty substance directly to it.

Some difficulty is encountered in determining the proper moment for placing the sensitized paper on the print, since it must not be too sticky nor entirely dry, and some experimentation is necessary in acquiring the exact technique.

A New Light Polarizer—Scientific investigators frequently have occasion to use polarized light as an aid in the examination and identification of various materials. Until recently, this involved the use of prisms having a very small field, and somewhat inconvenient in manipulation. A new polarizing material in plate form is now available, in unlimited sizes, which is as easy to use as an ordinary color filter. The plate consists of a cellulose film containing sub-microscopic dichroic crystals oriented in such a way that the entire film acts as a single crystal. The film is mounted between plates of glass and is obtainable in disc or square form with molded rims. For the study of glass, fibers, paper, metals, minerals and many other types of objects, and for the elimination of reflections in photography, the new polarizing plates should prove extremely useful to the police scientist. Plates for photographic use are supplied by the Eastman Kodak Company. Those for general use are manufactured by the Polaroid Corporation, 168 Dartmouth Street, Boston, Mass.

Identification of Human Hair—The October, 1935 number of the *Archiv. für Kriminologie* contains an article by Dr. Gottfried Jungmichel, of the Institute of Forensic Medicine at Munich, in which is discussed the possibility of making somewhat more definite identifications from studies of human hair than is ordinarily attainable.[4] The author describes a study made of the hair of a deceased 22 year old girl which possessed an abnormality of pigmentation, especially in the medulla, which was so unusual and so remarkably uniform throughout the hair-shaft that samples of the hair could be easily distinguished from a large collection of laboratory specimens. The author concludes that in the comparative examination of hairs bearing such distinctive characteristics, it is possible to render a valid opinion that the hairs in question originated from a certain person with a certainty bordering on probability.

Firearms Identification: Two Recent Decisions—The Court of Errors and Appeals of New Jersey, in the recent case of *State* v. *Metalski*, 116 N. J. L. 543, 185 Atl. 351 (1936), affirmed a conviction of murder at the trial of which a firearms identification expert was permitted to testify that, in his

[4] Jungmichel, G., Zur Individualdiagnose menschlicher Haare. (Archiv. f. Krim. 97: 110-115. 1935).

opinion, a bullet taken from the radiator of the deceased's automobile "bore the same marks" as those on a test bullet fired from a revolver found in the defendant's possession.

In *Conley* v. *Commonwealth,* 95 S. W. (2d) 1094 (Ky. 1936), involving a murder prosecution, the trial court permitted "a witness" to testify "from a casual examination" of a bullet found at the scene of the crime that it had been fired from a certain rifle belonging to one of the defendant's associates. Upon appeal the Supreme Court of Kentucky stated: "This court has been most careful in admitting ballistic evidence. In *Jack* v. *Comm.,* 222 Ky. 546, 1 S. W. (2d) 961, we reversed a judgment where evidence had been admitted of a far more careful examination than this one, and we do not recall having ever approved the admission of such evidence where the examination was made with less care than that outlined in *Evans* v. *Comm.,* 230 Ky. 411, 19 S. W. (2d) 1091, 66 A. L. R. 360."

Firearms Identification: A Decision Concerning the Examination of, and Experiments with, Powder Patterns as Indicators of Firing Distance—In *Wynes* v. *State,* 185 S. E. 711 (Ga. 1936), the Supreme Court of Georgia held that the admissibility of experiments regarding powder patterns as indicators of firing distance was within the discretion of the trial court, and that there existed no abuse of discretion in permitting witnesses to testify as to the similarity between the powder pattern on a dead body and that on a piece of cardboard which had been fired upon at a certain distance.

Fingerprints: Proof Necessary to Introduction in Evidence of Fingerprint Card—During the trial of *People* v. *Zirbes,* 57 Pac. (2d) 1319 (Calif. 1936), the defendant, as part of his defense, attempted to show that the deceased had been convicted of a felony, for the purpose of impeaching the deceased's dying declaration in which he stated that the defendant had shot him. As one of the links in this chain of evidence, the defendant sought to introduce a certain fingerprint card for the purpose of establishing the identity of the deceased as the same person convicted of a felony in a United States District Court. The prosecution objected to the admission of this card on the ground that there was no proper evidence before the court that the fingerprint card bore the fingerprints of the deceased, since it was produced from a bureau of criminal identification by an identification expert who had no personal knowledge as to the person whose fingerprints the card bore. The trial court sustained the prosecution's objection to the introduction of the card for the reason that the evidence of the expert was hearsay in so far as it purported to establish the fact that the card bore the fingerprints of the deceased. This ruling of the trial court was upheld by the Supreme Court of California, citing *People* v. *Van Cleave,* 208 Cal. 295, 280 Pac. 983 (1929) and *People* v. *Darling,* 120 Cal. App. 453, 7 Pac. (2d) 1094 (1932).