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Police Science Notes

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POLICE SCIENCE NOTES

TECHNICAL ABSTRACTS

By M. EDWIN O'NEILL†

Identification by Means of a Coat—An interesting case involving the identification of a suspect by means of a coat is reported in the April-June, 1938, number of *The Police Journal* (London) by Detective Inspector R. Tankard of the Birkenhead Borough Police.¹

A police officer, in attempting to arrest a man accused of indecent exposure was suddenly attacked; a struggle followed, and the suspect made his escape, leaving behind his coat, hat and raincoat. A few hours later a hat, coat and overcoat were stolen from a house not far from the scene of the attack upon the officer. This occurrence was connected at once with the assault and a description was broadcast of the assailant and the stolen clothing. By this means the offender was traced to Liverpool. An inspection of photographs in the rogues' gallery of the Liverpool police disclosed several of persons fitting the general description of the assailant and one of these was of a person wearing a jacket of the same cut and pattern as the one recovered at the scene of the assault. This photograph was identified later by the injured officer and several other witnesses and the suspect was subsequently arrested. In order to present the strongest possible case it was desirable to show the similarity of the coat worn by the suspect at the time of his previous arrest in Liverpool, and the coat abandoned at the scene of the attack. This presented a problem, inasmuch as the previous arrest, according to the rules of evidence, could not be disclosed at the trial. The difficulty was overcome by having an officer from the photographic department of the Liverpool police, without reference to his connection with the police, testify as to the taking of the photograph of the accused, and the transfer of the photograph to the identification officer. The latter then testified as to the similarity of enlarged photographs of the coat (Figures 1 and 2). The points of similarity were as follows: "Points 1 and 2—The left lapel of the jacket. Between these two points there are 13 white lines in the pattern of the cloth. Point 3—This white line in the pattern disappears at a position identical in each photograph. Points 4 and 5—Four white lines in the pattern are present over the button hole, between these points. Points 6 and 7—Between these two points 13 white threads are present to make up the white line in the pattern. Points 8 and 9—Right lapel of jacket. Between these two points there are 15 white lines in the pattern of the cloth (Please note there are only 13 in the left lapel). Points 10, 11 and 12—

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¹ Tankard, R., "Conviction by a Jacket," *The Police Journal* 11 (2):206-213 (1938).

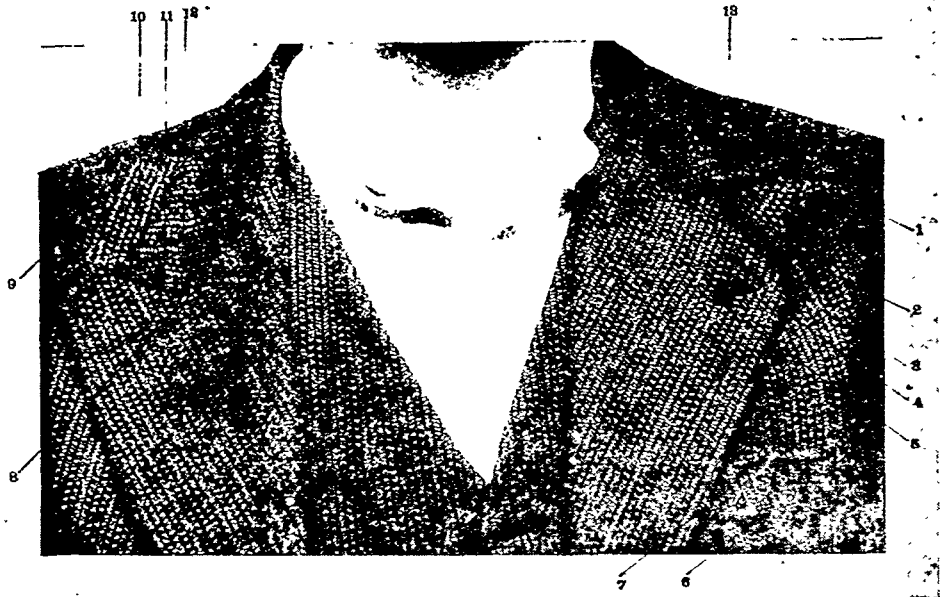


FIGURE 1
Photograph of Coat Found at Scene of Assault

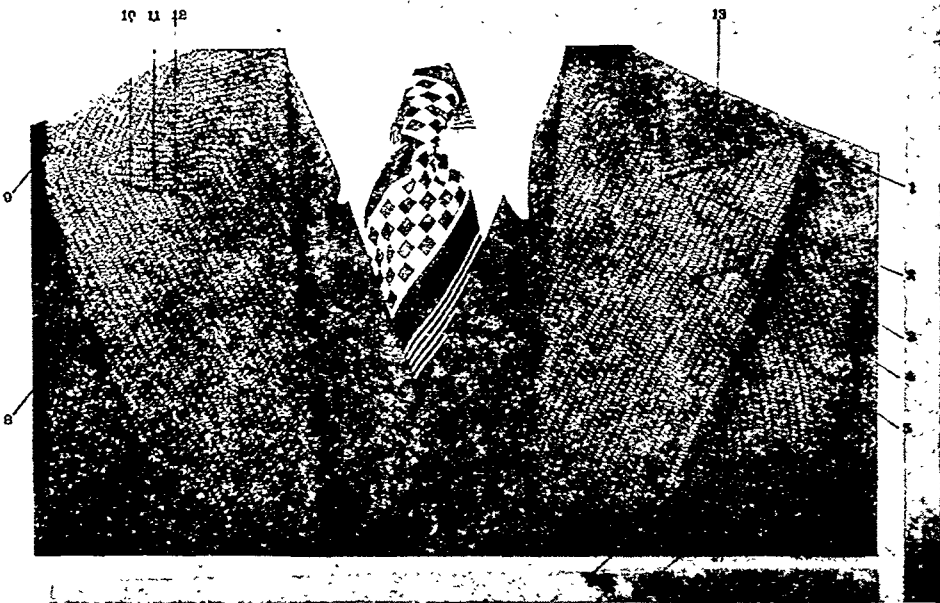


FIGURE 2
Photograph of Suspect's Coat

[The above illustrations are reproduced from the Police Journal (Eng.) with the kind permission of its editor, Mr. P. B. M. Allan.]

Indicate where three white lines in the pattern of the cloth disappear under the collar. Point 13—Indicates where one white line in the pattern of the cloth disappears under the collar." Based upon these points of similarity the witness gave as his opinion that the coat worn by the suspect when photographed was the coat found at the scene of the assault. This testimony was effective in supporting the evidence of witnesses and a conviction resulted.

A Color Reaction for the Examination of Hair Roots—The examination of hair roots for the purpose of determining whether hairs have been pulled out or have fallen out is usually based upon the form of the hair bulb and the presence or absence of the root sheath. This procedure is usually carried out on unstained preparations. In an article recently published by Dr. W. Laves of the Institute of Forensic Medicine of the University of Graz, a simple color reaction is described by means of which it is possible to stain the uncornified sheath and thus distinguish the sheath elements from the cornified parts of the hair.² The papillary hair bulbs and the adjacent unhorned part of the root are colored a bright cherry red. In the case of mature and fallen-out hair the reaction does not occur. There are numerous transition stages between these two effects; for example, combed-out hair bulbs show only colored striations corresponding to the cells of the inner root sheath or a slight reaction in the uncornified cells at the base of the hair bulb.

The technique of the method is as follows: The hair is placed in a mixture of equal parts of absolute alcohol and ether to remove the oil, treated for 5-10 seconds in a 5% zinc acetate solution, washed in distilled water, then placed in a 5-10% sodium nitroprusside solution for 10-30 seconds. Finally, the hair is dehydrated in absolute alcohol and mounted in Canada balsam. The reaction is based upon the fact that the uncornified elements contain sulphhydryl compounds which are colored red by the sodium nitroprusside. The zinc acetate is employed for the purpose of stabilizing the reaction.

The Identification of an Individual From His Footwear—In the October-December, 1938, number of the Police Journal (London), Dr. Sydney Smith, of the Department of Forensic Medicine of the University of Edinburgh, reports a case involving a rather novel procedure for obtaining information concerning the physical characters of the feet from the footwear.³

The facts of the case are described by the author as follows: "On November 28th, 1937, a person was arrested in Falkirk on premises into which he had broken. He was in his stocking soles, and a pair of boots which he claimed as his own were found on the flat roof by means of which he had entered the building. In the same district two other

² Laves, W., "Eine einfache Farbreaktion zur Untersuchung von Haarwurzeln," *Deutsche Zeitschrift für die Gesamte Gerichtliche Medizin*, 29:399-400 (1938).

³ Smith, S., "Studies in Identification No. 1: The Identification of an Individual From His Footwear," *The Police Journal* 11 (4):422-427 (1938).

cases of burglary had occurred, one on September 14th and the other on November 1st, 1937. In each case the general *modus operandi* was the same with regard to the time of breaking in, the method of approach, the method of entry and general conduct of the individual on the premises. In one of these cases a pair of boots had been left adjacent to the scene of the crime, and in the other a pair of shoes. The accused denied any knowledge of the two previous cases."

Gelatine glycerine casts were made of the foot impressions on the inside of all three pairs of shoes. These were practically identical and, moreover, brought out certain characteristics of the feet of the individual who had worn the shoes. From a study of the casts it was observed that the left foot was deformed and slightly smaller than the right, and that the most marked impression was made by the great toe, showing that it carried most of the weight and indicating that the left leg was probably shorter than the right. The examination of the shoes themselves disclosed that the right sole was much more worn than the left, indicating that most of the weight of the body was borne by the right leg. Scratches on the worn tip of the left sole and a series of curved concentric lines in the center of the sole suggested that the subject dragged or scraped the toe of the left foot as it was brought forward in walking and that the foot was rotated while bearing weight.

From a study of the external and internal features of the shoes, the following conclusions were drawn: "(1) that all three pairs of footwear had been worn by the same individual; (2) that such individual had suffered from a deformity of the left leg and foot, namely, a short leg and a withered foot, the result of paralysis of the leg which had occurred during infancy; (3) that there was loss of one toe or a deformity of one toe of the left foot which prevented it from touching the ground; (4) that he walked with a limp, characterised by a twist of the left foot so as to bring the heel in and the toe out. There was a drooping of the left foot due to weakness of the left leg which caused the tip of the great toe to be dragged or scraped on the ground when he moved forwards. Most of the weight of the body was borne by the right foot; (5) that he had a curvature of the spine due to the pelvis being dipped to the affected side; (6) that he was probably short in stature."

When the prisoner was examined later, these inferences were found to be correct. The prisoner was convicted and afterwards confessed. The author points out that a good description of the wanted man could have been given from an examination of any one pair of shoes found at the scene of the crime, and recommends the making of casts of the interior of footwear as a useful method in identification cases.

LEGAL DECISIONS

BY FRED E. INBAU

Firearms Identification—Tracing of Exhibits—In establishing the guilt of Adam Richetti for his participation in the Kansas City Union Station

massacre the state (in *State v. Richetti*, 119 S. W. (2d) 330 (Mo., 1938)) produced expert testimony to the effect that a cartridge found at the scene of the crime had been fired from a pistol recovered from "Pretty Boy" Floyd, whom eye witnesses identified as a participant in the shooting while in company with the defendant. One of the objections to the admissibility of the evidence was that the identity of the test shell used for comparison purposes had not been properly established. According to the testimony of one witness, a firearms identification expert in the Federal Bureau of Investigation in Washington, the shell had been fired by him from Floyd's gun, after which a characteristic identifying mark was placed on the shell, and then it was mailed to the agent in charge of the St. Louis office of the F. B. I. The expert in Missouri who made the identification of fatal and test shells testified he received the test shell from an officer in the Missouri State Highway Patrol. There was no evidence tracing the shell from the F. B. I. agent to the state patrol officer—and to this "missing link" in the chain of proof the defendant objected and alleged as error the admission of the test shell in evidence. The appellate court held, however, that there was no merit to the defendant's contention, since the F. B. I. expert in Washington who fired the test shell had testified that the shell in evidence at the trial was the same one upon which he had placed his mark after having fired it from Floyd's gun.

Fingerprints—Photography—In the Richetti case, *supra*, as proof of Richetti's presence in Kansas City at the time of the Union Station Massacre, the state introduced evidence to the effect that one of Richetti's fingerprints was on a beer bottle in an apartment occupied by Verne Miller (another of the participants) at the time of the massacre. Enlarged photographs were used by the fingerprint expert to illustrate his testimony as to the identity of the print. To the admission of the photographs in evidence the defendant objected, on the ground the person who made the photographs did not appear as a witness. The court held that the photographer's appearance was unnecessary since the photographs were made in the presence of the expert and under his direction.

Microanalysis—Examination of Hair—In *State v. Rowe*, 280 N. W. 646 (Minn., 1938), a microscopist was permitted to testify that on a shovel belonging to the defendant he found a few human hairs "which were of the same conical type, diameter, color construction and pigmentation" as those from the head of the deceased. He also testified that "one hair discovered on the shovel was complete and unbroken from root and bulb to the tip, indicating that the hair had been removed from its owner's head, by force, and had not fallen out." The witness stated that "science could not definitely identify the hair of the deceased or any other particular individual, but that all he could say was that the hair had the same general characteristics as the hair taken from

the deceased's body." The hairs were not discovered on the shovel until several months had elapsed from the time it came into possession of the authorities. In the meantime it had been handled by members of the sheriff's and county attorney's offices, and "perhaps other persons." Because of these circumstances the defendant claimed that the shovel was "worthless and too remote," and that its admission was "improper." To this contention the appellate court replied that the objection went "to the weight and not the admissibility of this evidence."

Comparative Micrography—At the scene of the murder, in *State v. Rowe, supra*, investigators had located two small broken pieces of metal, which were later found to fit perfectly in two places on the defendant's automobile running board where parts of the metal molding were missing. At the trial enlarged photographs were used to illustrate the matching of these two objects to the metal molding. Although no explanation was, or could be, offered as to how the pieces were broken off, or what connection they had with the commission of the crime, the court said: "The undisputed fact remains, however, that they were found there. They establish the defendant's presence at the place where the murder was committed and naturally have a strong tendency to implicate him."

Expert Witness—Constitutionality of Statute Permitting Court to Appoint Experts—According to an Indiana statute (Burns' Ind. Stats. 9-1702 (1933)), whenever an insanity defense is pleaded the trial court shall appoint two or three "competent disinterested physicians to examine the defendant and to testify at the trial." Under this provision the trial court in *Noelke v. State*, 15 N. E. (2d) 950 (Ind., 1938), appointed three physicians to examine the defendant and to testify at the trial. The defendant objected to their testimony on the theory that the evidence of the physicians so appointed was obtained in violation of his constitutional privilege against self-incrimination—in other words, the observation and examination made of the defendant was equivalent to compelling him to testify or give evidence against himself. Upon appeal, in which the admission of the physicians' testimony was alleged as error, the appellate court cited several appellate court decisions as authority for the position that the procedure outlined in the statute did not violate the defendant's constitutional privilege against self-incrimination. The conclusion in favor of the constitutionality of the statute is undoubtedly sound, but the reasons given by the court in support of its decision are rather evasive of the real issue involved. (For a discussion of this problem see volume 28 of this Journal at pp 282-287.)