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Police Science Notes

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POLICE SCIENCE NOTES

A "New" Method of Identification

—At the last convention of the International Association of Chiefs of Police held at Atlantic City a paper was presented by Dr. Carleton Simon and Dr. Isidore Goldstein entitled, "A New Scientific Method of Identification,"¹ in which the authors announce the invention of a scheme of identification "based upon the correlation of the optic nerve with the many variations of patterns made by the network of the blood vessels of the retina or background of the human eye," proposed as an adjunct to the fingerprint system in police science. Since the method described by Simon and Goldstein has attracted considerable attention, as indicated by the reprinting or reviewing of the paper by police journals both in this country and abroad, the writer feels that a brief discussion of the method would be of particular interest at this time.

Although the authors repeatedly refer to this method of identification as a *new* method, which they have "devised and completed" "during the past year," the basic idea was conceived at least 36 years ago by Levinsohn,² and was developed by Haber³ and Blaschek, the latter

evolving a system of classification based upon the variation of branching of the blood vessels of the retina in relation to the optic nerve, the description of which was published posthumously by Türkel.⁴

The fundamental principle of the method was noted by the eminent investigators Heindl⁵ and Locard⁶ but they apparently did not consider it of sufficient potential value to develop the idea further, Heindl maintaining that ". . . Even aside from the problem of cost I cannot have as much faith in the future of retinoscopy as Haber asserts for it."

While the fundamental principle of this means of identification should be credited to Levinsohn, it remained for Haber and Blaschek to develop and systematize the method.

For the purpose of classification Haber suggested the use of a fine screen placed in front of the photographic plate, the resulting image thus being divided into a number of small squares, the horizontal and vertical lines of which are designated by letters and numbers. In this way any point in the pattern may be located, and the course of the blood vessels are represented in a manner similar to the sketching of figures on a chess board. Haber merely outlined his ideas on the subject and did not develop it into a

pie. *Archiv für Krim.*, 74:139-145 (1922).

⁴Das Auge als Identifizierungsgrundlage, Graz, 1927.

⁵*Archiv für Krim.*, 74:145 (1922).

⁶L'identification des recidivistes, Paris, 1909.

¹See Proceedings, Forty-second Convention, International Association of Chiefs of Police (1935) at p. 84, also *The Police Journal* (New York) September, 1935; *The Detective* (Chicago) September, 1935.

²Beiträge zur Feststellung der Identität. *Archiv für Krim. Anthr. und Kriminalistik*, 2:211-221 (1899).

³Lichtbildtelegraphie und Kriminalistik, "Umschau" 1918/25; *Retinosko-*

complete classification system, the latter objective being attained by Blaschek.

According to Blaschek's system of "Fundophotoscopy" the eye-background is placed as to type in one of three groups (GI, GII, GIII) based upon such characteristics as the external appearances of the papilla and macula lutea, visibility of the choroid vessels, atrophy of the choroid, certain permanent abnormalities such as coloboma, etc. The eye-background (fundus oculi) is photographed and placed in one of the groups. The first sub-division is based upon the location of the first bifurcation of the central retinal artery as follows:

A. Stem of the undivided artery visible; artery divides on the papilla, plainly visible into two parts, ascending and descending.

B. Undivided artery not visible. Division occurs when the artery appears on the papilla.

C. Artery divides in the optic nerve: only the ascending and descending branches visible on the papilla.

These primary divisions are further sub-divided, Blaschek distinguishing three possibilities:

D. The division of the ascending branch occurs on the papilla itself (epipapillar bifurcation).

E. The ascending branch divides on the edge of the papilla (border bifurcation).

F. The ascending branch divides after leaving the papilla (extra papillar bifurcation).

Each of the divisions of the second order may be further divided into subordinate groups, e. g., D into G, H, I, E into K, L, M, and F into N, O, P, the classification being determined by the bifurcation of the descending branch of the

artery, according to the three previously named possibilities.

For the finer classifications Blaschek utilized an enlarged photograph of the eye-background through which he constructed parallel lines (according to a standardized procedure) and counted the number of blood vessels (both arteries and veins) intersected by these lines. The arteries and veins are crossed in various numbers and various sequences by these lines, so that Blaschek arbitrarily made the count from left to right and only up to 8, those crossings above 8 not being counted. The upper line was designated ZO and the lower line ZU, the representation of intersections appearing in the formula somewhat as follows (V—vein; A—artery):

$$\text{ZO} = 7 \text{ (VA AVVAA)}$$

$$\text{ZU} = 8 \text{ (AA VAAVVV)}$$

Adding the previously determined classification symbols the complete formula for one eye-pattern might be:

$$\text{ZO} = 7 \text{ (VA AVVAA)}$$

GI ADG

$$\text{ZU} = 8 \text{ (AA VAAVVV)}$$

In the Blaschek system a number of rules are proposed to govern the taking of formulas, so that the procedure is a standardized one and the formula always remains the same.

Returning to the method as presented by Simon and Goldstein, and viewing it in the light of the earlier work of Haber and Blaschek, the writer is unable to see wherein it contains any important contribution to this type of identification. Moreover, he is unable to see that it contains anything basically new, combining as it does the fundamental principles of classification set forth by Haber and Blaschek, that is, the use of a meshed photograph, and the location of branching of the central retinal artery.

The history of "retinoscopy" as a means of identification is interesting in that it seems to be characterized by periods of dormancy followed by periods of bursting into flower. It is hoped that during its latest period of activity its merits and possible utility will be thoroughly investigated before it resumes its sleep once again.

—M. E. O'Neill.

Two Recent Decisions Concerning Photography—The Supreme Courts of Illinois and Missouri recently rendered two decisions which should be of particular interest to persons interested in the admissibility of photographic exhibits as evidence. The Illinois case, *People v. Herbert*, 361 Ill. 64, 196 N. E. 821 (1935), involved a murder prosecution, wherein the wife of the victim testified that the murderer she saw was "pale or white." To rebut this testimony the accused offered both oral testimony and photographs to show that during the period of time in which the murder was committed he was "sunburned and tanned." The photographs thus offered were excluded by the trial court, but upon appeal this ruling of the trial court was held erroneous for the reasons contained in the following quotation from the court's opinion: "These photographs were offered for the purpose of showing that he [the defendant] was neither pale nor white in July, 1930, as testified by Mrs. Bonner [prosecution witness, and deceased's wife], but rather that he was tanned. Mrs. Regon [defense witness] testified that she was present when each picture was taken and that the pictures were true representations of the objects they purported to represent. On cross-examination she stated she

saw the person who snapped the camera but did not remember just which one of the party actually did take the picture, and that she did not develop the film, but knew who did. The trial court first ruled that the photographs be admitted as evidence, but later changed his ruling and refused to permit the exhibits to go in evidence. In this ruling the trial court was in error. A photograph shown to be a correct representation of a person during a period of time under investigation is competent where the accuracy of the photograph is proved by the testimony of a person acquainted with the appearance of the individual at the time the photograph was taken. It is not necessary that the correctness of the photograph be proved by the testimony of either an expert witness or by the person who took the picture and developed the film. The weight of the evidence was entirely for the jury."

In the Missouri case, *State v. McGee*, 83 S. W. (2d) 98 (1935), which involved a prosecution for kidnapping, several assignments of error were made relative to the introduction of certain photographs as exhibits—e.g., photographs of the basement in which the victim had been confined. The chief objection to all the exhibits was that they were not made in the presence of the witness identifying the exhibit. Upon this point the court said: "The fact that the photograph represents the witness' observation, rather than that the witness made the photograph or was present when it was taken, is the essential factor determining its admissibility." And further, the court added, after citing previous cases to the same effect, that such photographs "are admissible in evidence when shown to be reasonably accurate representa-

tions of the place or thing in question, to help the jury in understanding the testimony of the witnesses. They belong in the law of evidence to the same class as models, maps, and plans."

Another objection common to several of the exhibits offered in this case concerned alleged "changes in the conditions" from the time of the commission of the offense. As to this the court said that if any such inaccuracies existed on the photograph such facts constituted more properly a matter for impeachment, "going by the weight rather than the competency of the evidence."

A Recent Firearms Identification Decision—Although that part of the decision in *State v. Pinkston*, 79 S. W. (2d) 1046 (Mo., 1935), concerning firearms identification represents mere *dicta* and not the actual holding of the case, the factual set-up therein described should be of considerable interest. A police officer, qualified as an expert in the identification of firearms, was permitted to testify that since both fatal bullet and test bullet were "shorter than those which should have been used in the gun" there were no rifle marks thereon to permit him to determine whether the fatal bullet had been fired from the defendant's revolver. To the admissibility of this testimony the defendant objected but was overruled. The appellate court approved of the trial court's ruling on the ground that the defendant had not been harmed by the testimony.

A Decision Involving Code Messages—While confined in jail awaiting murder trial the defendants in

Commonwealth v. Millen et al., 194 N. E. 463 (Mass., 1935), exchanged certain magazines, which were found by the police to contain some figures made with burnt matches. The figures when decoded read "Abl thinking way to make break. Can U get saw somehow? Need cash for L." Testimony was admitted to this effect and also relating to the magazine transactions between the defendants, plus the additional evidence of the presence of eight matches in the defendant Millen's cell. All this was held competent for the consideration of the jury as tending to show a consciousness of guilt.

Cardiff City Police Laboratory—Dr. W. R. Harrison, Scientific Consultant to the Cardiff City Police, is the author of an article published in two recent numbers of *The Police Review* (Eng.) (September 13 and September 20, 1935), which describes the organization of the Cardiff Laboratory and records some of the cases handled during the first six months of its existence.

A number of interesting cases are reported by the author which indicate the scope of work carried on by the laboratory staff. One case of a somewhat unusual nature is described as follows:

"In January of this year a man was arrested for acting in a suspicious manner. He was recognized as a notorious housebreaker, and when he was searched some candle grease and a few dark stains were found in a pocket of his raincoat. The officer in the case remembered a recent burglary in which the thief had used a candle after cutting himself whilst effecting entry into the house. The bloodstain and candle grease found at the scene of the crime had

been collected and preserved at the Laboratory in the hope of something turning up. The Laboratory staff soon proved the dark stains to be blood, and the Police Surgeon testified to the presence of a recently inflicted cut on the prisoner's hand. The candle grease found at the scene of the crime was tested and proved to be identical with that found in the pocket. A search of the man's lodgings brought to light a candle which was similar in composition with both other specimens of grease.

It was not thought to be sufficient merely to prove that all the greases were the same in composition, so anyone entering the Laboratory about that time would have seen specimens of every type of candle to be bought in Cardiff undergoing analysis. It was found that there is an astonishing amount of individuality about even the commonest candle, and whilst it would be practically impossible to distinguish between candles made from the same melt yet different batches of candles by the same maker were appreciably different."

The author, in commenting on the case, writes:

"This case involved a great deal of what, at first, appeared to be hopeless work. No other organization but a properly equipped Police Laboratory would have bothered to, or could have, carried it out. The evidence furnished by the Laboratory staff and the Police Surgeon resulted in the committal of the man to the Assizes, where he pleaded guilty and was sentenced to 18 months' imprisonment."

—M. E. O.

The Hauptmann Case and Scientific Evidence—It is interesting to

note in the recent decision of *State v. Hauptmann*, 180 Atl. 809 (N. J., 1935) the extent to which the Court of Errors and Appeals of New Jersey relied upon scientific evidence in arriving at its conclusion that the verdict was not against the weight of evidence, as alleged by counsel for the defense in the argument and brief upon appeal. "Our conclusion" stated the appellate court, "is that the verdict is not only not contrary to the weight of the evidence, but one to which the evidence inescapably led. . . . From three different and, in the main, unrelated sources, the proofs point unerringly to guilt, viz.: (a) possession and use of the ransom money; (b) handwriting of the ransom notes; and (c) the wood used in the construction of the ladder."

The handwriting identification in this case was particularly valuable since it led to the "inescapable inference" that the writer of the ransom note on the window sill entered the nursery and perpetrated the crime. To the end of minimizing the testimony of the prosecution experts regarding the similarity between the kidnapper's handwriting and that of Hauptmann, the defense counsel requested and was refused an instruction by the trial judge to the effect that the opinion of handwriting experts is "proof of low degree." The trial court's ruling in this respect was alleged as error as well as the language used by the judge in his charge to the jury on the subject of expert evidence respecting the handwriting of the letters claimed to have been written by the defendant. The appellate court sustained the trial judge in refusing to instruct the jury that the handwriting test was "proof of low degree" and it also

found no error in the remarks made by the trial judge in commenting upon the handwriting evidence, which comments, the defense counsel alleged, placed undue emphasis upon the significance of such testimony.

Although many favorable statements were made by the appellate court in its opinion regarding handwriting evidence, there is one which may be misunderstood when considered alone. It is as follows: "Numerous experts in handwriting had testified that the defendant wrote every one of the ransom notes, and only one for the defendant denied this." Instead of making this numerical analysis it would have been much more desirable for the court to distinguish between the very high qualifications possessed

by experts for the prosecution and those possessed by the witness for the defense.

The appellate court apparently experienced little difficulty in attaching proper significance to the prosecution's expert who testified regarding the identity between the wood of the ladder and that found in the defendant's possession. The court pointed out, also, the significant fact that "long before Hauptmann's arrest, the wood or part of it, was traced to a Bronx lumber yard near his home."

This decision, upholding the admissibility of the above mentioned evidence represents a signal victory for scientific methods of crime detection. Without such convincing evidence the state, in all probability, would not have proved its case.