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## Police Science Notes

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## POLICE SCIENCE NOTES\*

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**The Identification of Fragments of Detonators**—In an article entitled "Optical and Physical Effects of High Explosives" which appeared in the Proceedings of the Royal Society of London (Vol. 157, pp. 249-261, November, 1936), Dr. R. W. Wood, Professor of Experimental Physics at Johns Hopkins University, discusses the results of a recent homicide investigation in which the author was consulted for the purpose of determining the nature and source of a small particle of copper which struck the victim with sufficient velocity to penetrate the breast bone and slit a large artery, causing death within several minutes. This unfortunate accident occurred when the victim opened the door of a coal furnace. It was concluded by the author that the fragment of copper (approximately the size of a pin head) was the base portion of a detonator used in exploding dynamite in the mining of coal. It is surmised that this particular detonator failed to explode in a mine and was delivered intact with the coal.

An account is included of the results of extensive experimental work undertaken by the author for the purpose of duplicating the fragment of copper found in the victim's body and ascertaining approximate velocity, energy and penetration levels for fragments of detonator cases which are known to be driven with considerable velocity upon detonation. Included also were spectrograms and flame propagation tests conducted using

mercury fulminate and lead azide specimens. It was concluded by the author that the base portions of detonators attain an almost instantaneous velocity of 6000 feet per second and penetrated a block of steel to a depth of .125". The base portion was accompanied by 60 to 70 smaller particles traveling in the same general direction as the larger base portion. Some 800 minute particles were observed to be driven in lateral directions.—*Charles M. Wilson.*

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**Fingerprints of "Siamese" Twins**—A number of analytical studies of the fingerprints of "Siamese" twins have been published in recent years, the results of which have probably escaped the attention of most dactyloscopists because the accounts appeared in journals ordinarily not consulted by the police technician. For those concerned with comparative studies of the fingerprints of twins the following references may be of interest: (1) Koch, *Journ. Comp. Psychol.*, vol. 7, 1927 (Hilton twins); (2) Cummins and Mairs, *Journ. Heredity*, vol. 25, 1934 (Gibb twins); (3) Cummins, *Eugenical News*, vol. 21, 1936 (Blazek twins); (4) Locard, *Rev. Int. de Criminologie*, vol. 8, 1937 (Goddino twins).

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**Firearms Identification — Powder Pattern Experiments**—The Oklahoma Court of Criminal Appeals,

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in *Cooper v. State*, 67 Pac. (2d) 981 (1937), recently held admissible the results of powder pattern experiments to approximate the distance at which a fatal weapon had been fired, even though white muslin cloth was used as a background for the powder patterns instead of animal skin or some other substance more nearly resembling the victim's body. The appellate court held that the circumstances and conditions under which the tests had been made were reasonably similar to those of the original shooting.

Compare this decision with that of *State v. Bass*, 186 La. 139, 171 So. 829 (1937) reported in the "Police Science Notes" of the last issue of this Journal.

**Expert Testimony in Arson Case—**  
In *State v. Browder*, 191 S. E. 302 (S. C., 1937), an assistant chief of a fire department was permitted to give his opinion as to the length of time various small incendiary fires had been burning in the defendant's house prior to their observation by the witness. The witness qualified as an expert on the basis of his membership in the fire department for thirty-three years. He described in detail the progress made by each of the small fires,

described the area burned, and gave fully the reasons upon which he based his opinion. Upon appeal the testimony was held competent.

**Evidence as to Seminal Stains in a Rape Case—**In *Wright v. Commonwealth*, 267 Ky. 441, 102 S. W. (2d) 376 (1937), the parents of a victim of rape were permitted to testify that "the substance found upon their little child's bloomers when examined by them was seminal fluid." This testimony the appellate court held competent, stating: "In the case of *Logsdon v. Commonwealth*, 215 Ky. 707, 286 S. W. 1067, it was held, adversely to a like contention there made, that the testimony of three experienced women, that the substance discovered by them upon the person of the little child was seminal fluid, was competent, the court saying: "The three witnesses were married women, and stated that from experience they were familiar with the appearance and odor of seminal fluid, and, after so qualifying themselves, testified that the substance found upon the person of the little child, judging by the appearance and odor, was seminal fluid. Under those facts they were qualified to testify on the subject, and the testimony was competent'."