

Summer 1963

Police Science Book Reviews

Follow this and additional works at: <https://scholarlycommons.law.northwestern.edu/jclc>

 Part of the [Criminal Law Commons](#), [Criminology Commons](#), and the [Criminology and Criminal Justice Commons](#)

Recommended Citation

Police Science Book Reviews, 54 J. Crim. L. Criminology & Police Sci. 246 (1963)

This Criminology is brought to you for free and open access by Northwestern University School of Law Scholarly Commons. It has been accepted for inclusion in Journal of Criminal Law and Criminology by an authorized editor of Northwestern University School of Law Scholarly Commons.

POLICE SCIENCE BOOK REVIEWS

Edited by

Richard L. Holcomb*

FIREARMS IDENTIFICATION. By *J. H. Mathews*,
The University of Wisconsin Press, 1962. Pp.
892, 2 Vols. \$40.

From the southeast corner laboratory in the yellow brick chemistry building at the University of Wisconsin has come the most remarkable book in many years in the field of firearms identification. Mathews has not published extensively in recent years, simply because he has been busy working on this unprecedented two-volume reference book for more than ten years. Before commenting on his accomplishment, it seems appropriate to tell something of his background.

Born in 1881, educated at Wisconsin and Harvard, Mathews achieved scholarly recognition in his field of physical chemistry and served as chairman of the chemistry department at the University of Wisconsin for 32 years. Mathews pays tribute to Goddard and Waite for their contributions toward the development of forensic ballistics, but his part in pioneering this field is equally important. It probably is not generally known that he (Mathews) was invited to join the staff of the Crime Detection Laboratory at Northwestern University which was established shortly after the St. Valentine's Day massacre in 1929. He declined, feeling that his appointment as chairman of the chemistry department was more important at the time. Mathews' interest in problems of forensic science continued to grow, and he participated in a number of important cases in Wisconsin involving metallographic analysis, comparative microscopy, and general chemistry, the first one being the celebrated Magnuson case. He also participated in the early use of the polygraph and so-called truth serum interrogations in Wisconsin. As stated in Vol I, Mathews served law enforcement agencies all over the state of Wisconsin, and in his tireless way, campaigned vigorously for the establishment of a state-supported forensic laboratory—which finally became a reality in 1947. Extending the talent for instrumentation developed during his work in physical chemistry, Dr. Mathews fabricated a number of instruments for use in firearms identification. These pieces of apparatus are

* Chief, Bureau of Police Science, Institute of Public Affairs, State University of Iowa, Iowa City.

unique to his laboratory. Several of them have been described in this journal.

The two-volume edition of *Firearms Identification* contains 892 pages, replete with text material, excellent photographs, and appropriate tables. Vol. I is divided into three parts. Part I is general text material covering the principles of firearms identification, the identification of bullets and cartridge cases, instrumentation, restoration of obliterated serial numbers, and a section entitled "Pitfalls for the Unwary". The chapter on instrumentation is of particular interest, for herein is described most of the apparatus which Mathews has built. This section is recommended especially to those who are not familiar with his comparison camera and rifling meter in addition to other special pieces of apparatus. He also has a few well-chosen words to say about the use of photographs in court when testifying about firearms identification. The author feels that it is quite desirable for the expert witness to supplement his testimony with good-quality photographs and meet the challenge of the defense attorney with well-documented evidence that can be clearly understood by a jury. The importance of these good photographs (in his opinion) outweighs the objections which some expert witnesses have to cross examination of the demonstrative evidence.

(The reviewer would like to interject a personal comment at this time. It was my privilege to be associated with Dr. Mathews during my undergraduate years, and I well remember accompanying him to court amply armed with 8 x 10 enlargements, stereo-photomicrographs with several viewers for the jury, and lantern slides of all of the photographs. It was my duty also to carry the projector and screen, and a portable comparison microscope. The jury would be treated to a scholarly but understandable discourse on firearms identification, well supported by models, photographs, etc. The end result was a dignified presentation of evidence which would withstand diligent cross examination. Once the examination and exhibits were complete, the evidence was there for all to examine. It stood by itself, it spoke for itself, one of the true criteria of physical evidence. Unfortunately, some of this spirit of expert testi-

mony which should be fostered in the training of the forensic scientist is fading from our courtroom scene.)

The section on instrumentation does not include the eccentrograph, which was developed during 1937-39. This, from limited observation, was the forerunner of one of the principles of the striagraph reported by John Davis in 1958 in his book *Tool Marks, Firearms and the Striagraph*. "Restoration of Serial Numbers" discusses techniques developed around 1935 and amplified by other workers at a later date. Unfortunately, from a historical standpoint, there is no reference to Mathews' work with the dermal nitrate test. He modified the original Gonzales test, introducing the use of diphenylbenzidine, and has had considerable experience with the test. Some current articles have attributed the use of diphenylbenzidine to other workers.

Part II consists of tables which list rifling data of various handguns. Mathews examined over 2500 handguns and made all of the measurements with the instruments previously mentioned. The tables include the following data: Caliber and Manufacture, Model, Serial No., Dir'n of Twist, Inches for 1 turn, No. of lands, Land Width, Bore Dia., Groove Dia., Remarks. In order to examine personally this extensive number of guns, the author enjoyed the cooperation of many private gun collectors, ordnance officers, law enforcement officials, forensic ballisticians, and others who were interested in this project. The collection of the data was begun in 1939 and continued as time permitted until his retirement in 1952 at which time it became possible for him to devote all of his time and energy to this and other problems relating to firearms identification.

The third part of Vol I contains 158 pages devoted to miscellaneous notes on automatic pistols. This information has been gathered from many different sources and represents an attempt to bring this type of information, useful to the forensic ballisticians, into a single publication. Mathews recognizes that there may be some errors, but he has attempted to evaluate available information in the best possible manner. It may be he was motivated to do a work of this type in order to fill in the many gaps and correct errors in the earlier work of Mezger, Mees, and Hasslacher.

The appendix to Vol I is also valuable, for it includes "Class Characteristics of Shell Markings", "Rifling Specifications", as supplied by various manufacturers, a directory of the manufacturers

of automatic pistols, revolvers and nonautomatic pistols, an excellent collection of diagrams and photographs of rim-fire firing pin impressions, German codes for manufacturers of automatic pistols, and several additional bits of miscellaneous information.

Vol II is devoted entirely to photographs and illustrations of handguns. Both sides of each gun are shown with an accompanying scale illustrating the size of the weapon. These photographs were made by the author and originally printed on glossy paper. Having seen many of these excellent photographs, one is aware of the excellence of the reproductions. Reproductions of this tremendous number of photos on slick paper would have increased the cost prohibitively. In addition to original photographs of weapons, there is an extensive collection of cuts supplied by manufacturers and other contributors. The volume concludes with 276 reproductions of trade marks and other identification marks of miscellaneous weapons. Besides being an important reference work for the forensic ballisticians, both volumes will be of unquestioned use to firearms collectors. The compilation of this storehouse of information has not been equalled in recent years.

The value of this book in any forensic library is obvious. The more important fact is that there is now preserved in the literature the works of a scholarly pioneer in forensic ballistics. Contemporary experts, in addition to familiarizing themselves with this book, would do well to visit Dr. Mathews' laboratory while the opportunity still exists. Mathews is a capable scientist whose contributions have not always received the widespread publicity they deserve. As a student and friend who has followed the development of this work for more than two decades, it is a privilege and honor to compliment one's former professor on a task well done.

RALPH F. TURNER

Michigan State University

BOMBS, EXPLOSIVE, AND INCENDIARY DEVICES.

By *Richard R. Durfee*, Police Science Press, Cocoa Beach, Fla. 1961. Pp. 43. Illus. 10. \$1.50.

EXPLOSIVES AND HOMEMADE BOMBS. By *Joseph F. Stoffel*, Charles C Thomas, Publisher, 1962. Pp. 92. Illus. 50. \$5.50.

Both of these publications are being reviewed together for they were both received at about the same time and their subject matter is similar.

Both books deal with the type of bomb or explosive that a law enforcement agency will be confronted with. Military explosives are only treated incidentally and from the standpoint of dangerous souvenirs or the occasional use of some of the components in making a bomb. Both books treat the more common types of explosive materials found in home made bombs and the various triggering devices. Durfee goes into a little detail on the combination of everyday chemicals or materials that can become highly dangerous.

Neither book claims to make an expert out of the reader. As a matter of fact, the general impression gained is that these devices can be so cleverly made and so unpredictable, that the less you have to do with them the better. Both books emphasize safety and caution repeatedly.

The book by Durfee is off-set printed from typed material. The illustrations are clear, but limited in number. This is a very short publication and could have well been an article in a journal. Major Stoffel's book is well printed, well illustrated, bound in hard covers, and considerably longer. It is very well done. In addition, a set of 42 color slides that duplicate the illustrations and a two-hour lesson plan is available.

Up to date little has been written outside of armed forces material on homemade bombs. These books are a good start.

R.L.H.

THE DETECTION OF SECRET HOMICIDE; A STUDY OF THE MEDICO-LEGAL SYSTEM OF INVESTIGATION OF SUDDEN AND UNEXPLAINED DEATHS. By J. D. J. Havard. Macmillan & Co. Ltd., London, (St. Martin's Press, New York) 1960. Pp. 253. \$8.00

Doctor Havard, the Assistant Secretary of the British Medical Association and educated in the fields of both law and medicine, has presented a broad and quite thorough survey of the governmental system of official death investigation in the United Kingdom, and briefly compared it with practice in the United States and on the European continent. The book is interestingly written with profuse documentation, and it is easy and enjoy-

able to read. Approximately one-quarter of the book deals with the background and history of legal medicine and the emergence of the coroner system in England, a little less than half is devoted to a searching examination of the present coroner system and associated functions such as death registration in the United Kingdom; and the remainder includes brief surveys of the American and Continental medicolegal systems, an account of some suggested reforms, a few tables, and a well-selected bibliography.

The book deals with a much wider subject range than the title indicates and is, in fact, a valuable—and readable—reference on official death investigation in general. The hard core of the book is substantial scientific information of permanent value, objectively presented with helpful tables. These include such information as the number and percentage (of all deaths) of coroners' cases, autopsy rates, and inquest rates of English counties; and much other information valuable for budget preparation and in the organization of new medicolegal offices, and not readily available elsewhere.

Sound recommendations for English reforms are made, which are largely applicable to the United States as well. In recognition of the fact that "80 or 90 per cent of the coroner's work (in England) consists of the purely scientific problem of establishing the cause of death . . ." consolidation and reasonable centralization of the present 270 English coroner's offices is advocated, as are employment of qualified full-time investigative officers and professional staff, close association of coroner's offices with regional forensic laboratories and, wherever possible, with university medical schools, and abolishment of present non-medical coroner's functions.

This valuable and worthwhile book can be wholeheartedly recommended to all those concerned with improving medicolegal death investigation, and to all others interested in the development of the philosophy and practice of this important governmental function.

KURT M. DUBOWSKI

University of Oklahoma School of Medicine