

ENCYCLOPEDIA OF FORENSIC AND LEGAL MEDICINE

JASON PAYNE-JAMES, RODGER W. BYARD, TRACEY S. COREY,
& CAROL HENDERSON, Eds. (United Kingdom: Elsevier, 2005),
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INTRODUCTION

In today's legally oriented world the term "forensic" can legitimately be applied to nearly every scientific area. The dictionary defines the term as: "1) belonging to, used in, or suitable to courts of judicature or to public discussion and debate; 2) argumentative, rhetorical; and 3) relating to or dealing with the application of scientific knowledge to legal problems."¹ The explosion of forensic science around the turn of the millennium has been remarkable and has repeatedly been brought to public attention by spectacular televised courtroom dramas, such as the William Kennedy Smith, Scott Peterson, and O.J. Simpson trials. In recent years, one can hardly turn on the television during prime time without coming upon some type of forensic or legal drama. The genre is epitomized today by *CSI: Crime Scene Investigation*, which, in its sixth season, has evolved into three different versions, with a multitude of similar programs focusing on forensics and legal medicine issues.

CSI is not, of course, the first TV show to focus on forensic science. The genre can be traced back to *Quincy*, a long-running, Emmy Award-winning series that aired 148 episodes between 1976 and 1983. The show was inspired by the real-life adventures of Dr. Thomas Noguchi, the colorful medical examiner of Los Angeles County, who gained notoriety with his controversial opinions in such highly visible cases as the deaths of Marilyn Monroe, Natalie Wood, John Belushi, and Robert Kennedy.²

The entertainment value of *CSI* and similar shows is reflected in the millions of viewers they attract each week and the discussions they spawn in

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¹ MERRIAM-WEBSTER ONLINE DICTIONARY, <http://www.m-w.com/dictionary/forensic> (visited May 17, 2006).

² See <http://www.imdb.com/title/tt0074042/> (visited June 11, 2006).

workplace break rooms following each episode. Journalists, forensic practitioners, and the legal community have begun to use the phrase “CSI effect” to characterize how these shows are affecting the practice of forensics in general and, in particular, the presentation of evidence in the courtroom. One thing is certain, as I found myself reflecting while reading the text that is the subject of this review, namely, the public is now aware of and intrigued by the science behind forensic and legal medicine. The days are gone when the forensic pathologist or crime scene analyst could expound an opinion from the witness stand based on nothing more than the “because I said so” theory. Anecdotes are not science and the CSI effect has, if nothing else, served to make forensic professionals work harder at standardization, complete collection, preservation, documentation, and analysis of evidence than ever before.

Strong evidence of the growing interest in forensics can be seen on all fronts. It is exciting to observe the growth in forensic science programs at colleges and universities across the country. Even high schools have started forensic science classes. As the coordinator of a forensic pathology fellowship program, I am amazed at the number of qualified applicants seeking admission. Our program will not only be filled for the next several years but will likely add an additional training position. In the courtroom, it is incredible and rewarding to watch a jury lean forward as they listen intently to the testimony of crime scene analysts, technicians, and other scientists. Previously, one could sometimes get the impression that no one on the jury was listening.

Today’s juries expect and effectively demand more in the way of forensic evidence and analysis than most jurisdictions can provide with the limited resources at their disposal. Thus, although the growing interest in crime and medical science is gratifying to those of us in this field, a distressing by-product of these popular programs is the creation of unrealistic expectations within the jury pool. Television programs, including the 24-hour news stations, are the main source of forensic knowledge for many potential jurors. These shows have raised expectations of what testing the system is capable of, what the testing will or should contribute to the analysis, what the accuracy of the tests should be, and what collection techniques should or should not have been used. Jurors seem to believe there is limitless technology to be utilized. The courtroom is ultimately another program or show for them to watch, and they now expect a really big show—a level of performance that is not possible, realistic or, at a minimum, practical, except for megatrials like those mentioned above that so powerfully have contributed to these expectations.

Reading the *Encyclopedia of Forensic and Legal Medicine* drew me to this discussion as I pondered why CSI-type programs seem to always “get it wrong” as to key forensic processes, notwithstanding that the shows’ creators,

writers, consultants, and producers apparently try so hard to get it right.³ At first, the answer seemed beyond me. Then I noticed as I read further that, on occasion, the contributors expounded opinions that I questioned, or I came across areas where I felt compelled to utilize the “further reading” citations to get a better understanding of topics with which I was not as familiar. In fact, the editors point out in their preface that

some aspects of some chapters may be controversial—we hope and intend that this is so. Forensic and legal medicine is not a science of absolutes, and its purpose is best served when opinions and approaches to the often complex and sensitive topics of debate can be discussed freely, openly and reasonably, without fear of intimidation, retribution or victimization. [xii. Editor’s note: numbers in brackets refer to pages in the reviewed work.]

This text, eclipsing others I have encountered in its sheer scope, allowed me to discern a key reason why these shows do not get it right. Aside from the temptation a highly successful “cash cow” television series affords to take ever-increasing dramatic license, the fact is that the scientific community itself cannot agree on what is right. Moreover, as even brief exposure to the forensic arena reveals, some nationally known experts in particular fields, even those with prominent international reputations, often take advantage of the many shades of gray when they give opinions in legal proceedings. But it is not just the expert witnesses who disagree; the medical literature is often split, offering up peer reviewed articles that support a particular hypothesis while other articles, possibly using a different patient population or different statistical analysis, refute that hypothesis. On several occasions, I have been asked to review cases with seemingly clear pathology and discovered that I was the third or fourth reviewer. Why? It was because the submitting attorney hoped that if enough specialists reviewed the case at least one would offer up the supportive opinion that was desired. After all, experts can differ in their opinions, and in this field they most certainly do.

It is here that the real value of this text is realized. While I had a few areas of disagreement with the contributors and areas where I would have liked more illustrations, I found the *Encyclopedia* a meaningful addition to my reference library because it helps one sort out where there is legitimate room for disagreement among competing professional viewpoints. It summarizes prevailing thought on various topics and provides a solid stepping-off point for further scientific study. As its editors assert, the text should help overworked forensic professionals offer “their findings and conclusions . . . robustly, with emphasis given where facts or scientific research support an opinion, and clear

³ One aspect in which the shows understandably take license is time; TV audiences would surely find it unacceptable to wait weeks for laboratory results to come back, as investigators in real life typically have to do.

guidance when such facts or research are either equivocal, or not available.” [xiii] This is an important contribution. It is understandable and acceptable for crime scene dramas to “get it wrong” because, despite their proffered verisimilitude of actual practice, they are, after all intended primarily as entertainment. But it clearly is not acceptable for forensic professionals to foster or perpetuate forensic myths in the context of their practice by knowingly or deliberately operating within the scientific shades of gray. Comprehensive, cohesively edited, and scholarly texts like the one reviewed here can only serve to strengthen the forensic scientists’ or legal professionals’ practice, steering them, as the pages are printed, away from the gray areas to the black and white.

STRUCTURE AND CONTENTS

The *Encyclopedia of Forensic and Legal Medicine* is a compilation of vast areas falling under the heading of “forensic and legal medicine.” Although some readers may regard these terms as interchangeable, others will likely have a more nuanced view and believe that certain topics and disciplines should be addressed under either one or the other term. Sensitive to the terminologic nuances and debates, the editors purposefully selected a title that encompasses all the potential topics where medicine and the law meet. The title is also meant to embrace all of the areas where medicine and science interact with the various courts, investigative authorities, and other governmental and professional groups that deal with scientific and medical evidence in a legal context. The preface clearly recognizes the enormity of the editors’ task and objective, which was to provide “the major reference source of subjects related to forensic and legal medicine.” I am struck, after reviewing the final product, that their biggest challenge may have been controlling the potentially exponential growth to maintain a manageable reference work size.

The four-volume set is intended for a global audience and has four editors supported by a 25-member editorial board that reflects the work’s international reach. Two of the main editors are from the United States, while the editor-in-chief, Jason Payne-James, is from the United Kingdom, and the fourth editor is from Australia. The editorial board hails from these three countries plus India, France, China, Sweden, Israel, Norway, and Japan. Most of the nearly 300 contributors have strong academic associations and many are easily recognized as leaders in their respective fields. The work, arranged in alphabetical order like any encyclopedia, is not intended as a cover-to-cover read but, rather, as a “go to” source to which one will return time and again as the need arises. However, even in a work intended to be read piecemeal, cohesiveness and artistic integrity is important. As Professor Bernard Knight notes in his foreword to the *Encyclopedia*, the editors were able to achieve cohesion in organization, depth, and, for the most part, style.

The editors remark, in line with the subject of this review essay, that the forensic practitioner must be able to form “independent, impartial and objective opinions which allow justice to be pursued appropriately and fairly.” [xiii] They further note how this text “provides sources of information to assist in all these functions, as well as giving examples of how court and legal systems compare in different jurisdictions worldwide.” [xiii] Given the expansive breadth of its coverage, an attempt to list fully the contents of this work would outweigh this review essay; so I will simply mention here some of the timely subject areas that I believe are most reflective of the work’s scope: accreditation; age estimation in the living; animal attacks and injuries; anthropology; body cavity searches; practical issues and consent; chemical crowd control agents; cold case review (U.K. experience); computer crime and digital evidence; court systems; crime scene investigation and examination; DNA; expert witnesses; forensic botany; mass disasters; recovered memory; terrorism; toxicology; war crimes, war injuries, and the Yakuza (a Japanese organized crime group).

The alphabetical contents list appears at the beginning of each volume and can be used as a starting point to access the material, as it provides a guide to the volume and page number where the topic is discussed. To assist the reader in finding information by the use of key words and search terms, the *Encyclopedia* has used “dummy” entries in the table of contents that then refer the reader on to the appropriate related heading where the material is presented. The “dummy” entry is also provided within the text, in the appropriate alphabetical order, so the reader can reach the cross-referenced sections easily, even if simply thumbing through the text. The sub-articles are generally followed by cross-references flagged by “see also,” which highlight other, related articles in the work where the material is discussed in greater detail, draw the reader’s attention to parallel discussions in other articles, and indicate material that broadens the discussion. The articles also have a “further reading” section that gives the relevant primary review or research articles and provides additional source material should readers wish to delve deeper into a particular area. Finally, a subject index is provided at the end of the fourth volume. Here the entries “differentiate between material that is a whole article, is part of an article or is data presented in figure or table.” [xvii]

CONCLUSION

The *Encyclopedia of Forensic and Legal Medicine* commendably achieves its goal of “providing the major reference source of subjects related to forensic and legal medicine,” if for no other reason than by its scope, depth, and artful compilation of a vast array of seemingly diverse subjects into a manageable, cohesive four-volume reference text. The subject headings are well-developed to encompass most of the areas one might need to

start researching or studying a particular forensic or legal medicine topic. The contributors are clearly knowledgeable and well-respected scientists or scholars, and the topics are generally presented effectively and fairly, in a way that either a seasoned expert or a newcomer to the field can understand and appreciate.

The text highlights areas of solid forensic knowledge, providing useful and easily usable guidance from experts in the field of study. While some proposed opinions or evidence interpretations are more controversial, for the most part the contributors have acknowledged areas where research was lacking, controversial, and/or contradictory. As noted above, it is in this respect that I believe the text is particularly valuable. This encompassing work will help prevent well-intentioned forensic specialists from reaching conclusions that simply cannot be supported by anything other than the “because I said so” theory. The work will also help forensic scientists by shedding light on the legal process, a process that can be foreign and challenging to many trained and skilled in their particular scientific field but not educated in or familiar with the intricacies of the legal world.

Legal professionals will also benefit because this text covers many forensic subject matter areas, providing, at a minimum, a better understanding of the language being used by the consultants. Perhaps more important to legal professionals is the fact that this encyclopedia has embraced forensic and legal medicine foundations. Unrealistic expectations of jurors created by *CSI*-type programs must be combated in the courtroom by education and, ultimately, knowledge. The legal professional is charged with providing this education and knowledge to the jury, either supplying it directly or eliciting it from scientific experts through live testimony or other media. This encyclopedia, along with the appropriate consultants, will make the task easier.

The *Encyclopedia* would be valuable to those new to this field who are interested in obtaining by a single purchase a complete, well-organized reference text that provides a ready foundation to develop a knowledge base and offers resources and tools for further study. It is also recommended for the experienced forensic scientist looking to round out a professional library. Even for those already possessing substantial knowledge of the field, it has much to offer, both for its own content and as an interesting and convenient way to expand into areas of study with which one may be less familiar. At over \$1,000, this reference set is not a casual purchase; but viewed as a long-term investment in a professional’s toolkit, it seems reasonably priced for what it delivers. Those with an active forensic practice, or seeking to build one, will likely get their money’s worth out of this carefully and skillfully assembled contribution.