

## BOOK REVIEW

Robert E. Gaensslen,<sup>1</sup> Ph.D. and David A. Stoney,<sup>2</sup> Ph.D.

### Review of: *Encyclopedia of Forensic Sciences*

**REFERENCE:** Siegel JA (editor-in-chief), Saukko PJ, and Knupfer GC (editors). *Encyclopedia of forensic science*. Academic Press, San Diego CA. 2000, three vols., 1440 text pp., 125 pp. index, glossary material, \$925.

Encyclopedia: a comprehensive reference work containing articles on a wide range of subjects or on numerous aspects of a particular field, usually arranged alphabetically (The American Heritage Dictionary of the English Language, 3rd ed., 1996). This newly released three volume set meets the foregoing definition of an "encyclopedia" with respect to the forensic sciences taken in the broadest possible sense. There are over 200 articles on a very broad range of topics. If one defined the forensic sciences, as the editors have chosen to do for purposes of preparing the encyclopedia, as encompassing almost every area covered by the ten sections of the American Academy of Forensic Sciences, from the analytical chemistry- and biochemistry-based to the social science-, general- and even lab management-oriented, there is likely to be some coverage in these volumes. There are complimentary forewords by two internationally high-profile forensic scientists, Henry Lee and Janet Thompson. An international "editorial advisory board," consisting of a geographically widespread group of well known forensic scientists, is listed in the front matter. Some, but not all of these people were also contributors to individual chapters. The contributor roster is also internationally representative. Many of the contributors are well-recognized authorities in the discipline areas in which they contributed, but others are considerably less so.

In any work of this magnitude, decisions made at the planning stages naturally affect the final product. In this case, the decisions that had the greatest effect were: first, to follow the "encyclopedia" format; second, to try and be comprehensive in the coverage of "forensic sciences;" and third, to recruit editorial advisors and authors internationally.

Following an encyclopedia format means that topics are arranged alphabetically rather than in more logical groups and that instead of citations within the articles, lists of suggested additional reading are provided. The alphabetical arrangement will not create problems for users who have some knowledge of forensic science, but it could make the work more difficult to use for students and novices. Partially addressing this concern, articles have in many cases been grouped into broader topic areas. Fiber-related topics, for example, are a group of five articles: Identification and Com-

parison; Recovery; Significance; Transfer and Persistence; and Types. There is also an expanded table of contents that lists the topic of each article in the order of appearance. This table of contents also contains cross-indexing. Reading this table of contents, or using the index, would effectively guide readers to the topics that are covered.

Nearly all of the articles lack citations within the text, having instead a listing of Further Reading following each article. It is readily apparent that this has worked for some articles (and some authors) and has been unsuccessful for others. When a few, generalized suggestions for further reading are given, the format makes sense. When the article itself is detailed, amounting essentially to a review article, the "suggested reading" format becomes awkward. Faced with 20 or more suggested readings, without annotation and without citation within the article, the Encyclopedia fails to serve the reader's needs. It is frustrating to read an excellent article, to see the cited literature that would document the text, and not be guided to it. Forensic scientists must be able to reach into the primary literature if they are to rely on a source. A good example is the comprehensive, well-written article on Sexual Assault and Semen Persistence. There is a wealth of data regarding the persistence of specific seminal constituents. It is also clear that among the 19 articles suggested for further reading that the specifics will be documented therein.

Unfortunately, we have no option but to obtain the references themselves in order to provide the foundation to use the encyclopedia article. Another example is the 24 suggested readings for the Detection of Deception article. Along with seven to eight general books, there are specific readings that range from general legal citations of the *Daubert* and *Fryc* cases, to short journal articles that support the article's specific text. The point is not in the choice of literature, but its use. Article after article contains this flaw and it will soon become an irritant to the critical reader.

This is a high price to pay for nominally preserving the encyclopedia format, and it would seem that allowing the authors the flexibility to cite their primary literature would greatly improve the work. Some authors have managed to write around the constraint, or have limited the suggested readings to select review articles, but most have not.

The effort to be "comprehensive" means that space is devoted to topics that some may not consider particularly relevant. Indeed, there are topics included that some would not consider belonging to forensic science. Many American forensic scientists will not be very familiar with cheiloscopy and many would feel that polygraph and profiling methods would best fit in a work focused on police investigations. Still, more might appreciate a narrower scope, or

<sup>1</sup> Professor, Director of Graduate Studies and Head of Program in Forensic Science, University of Illinois at Chicago, College of Pharmacy, Chicago IL.

<sup>2</sup> Director, McCrone Research Institute, and Clinical Professor of Forensic Science, University of Illinois at Chicago, College of Pharmacy, Chicago IL.

separate volumes that recognized some major divisions in the forensic sciences, such as Pathology, Anthropology, Toxicology, Biochemistry, Criminalistics and Police Investigations.

The depth of coverage is strikingly uneven. Trace evidence is a good example. There are some extremely comprehensive articles that would serve as excellent review articles if properly referenced. The group of articles on fibers comprises an outstanding review, as do those articles on hair and on explosives. Paint and dust have excellent, single articles (probably the type that would be a major article in a conventional encyclopedia). Meanwhile, there are no articles on soil or on glass as trace evidence. It is hard to reconcile such omissions with the 11 pages devoted to ear prints. Some topic areas fail to provide a balanced view of current practices. Bayesian statistics for DNA interpretation are given full billing, for example. This is probably most appropriate from a scientific standpoint, but it does not reflect the polarization that is present in the field.

The effort to be international means that many specialists from many countries are contributors. In a way, this tactic might make the work more interesting for everyone, and emphasizes the commonalities across international boundaries. But because forensic science practices are in many important respects intertwined with countries' legal systems, there are also important differences in the way things are done in the different countries. And legal system specific practices in one country are probably of little or no interest to forensic scientists in other countries. It is unlikely, for example, that forensic scientists outside the United States care about the implications of *Daubert*.

In other instances, the topic headings will differ from the conventional. "Serology," for example, is construed to include blood identification and species determination, but also blood pattern analysis. Sexual assault evidence examination, which most criminalists would group under a heading like "biological evidence analysis" is placed under "clinical forensic medicine." These points need not seriously detract from the book's usefulness because there are many cross references placed at the end of the articles and in the table of contents. There is also a comprehensive index.

There is, however, a difficulty in the coherency of this work. In some instances, topics have been divided among separate authors for reasons that are not particularly clear. There are, for example,

two articles by separate authors on postmortem changes, two covering the polygraph and many that incorporate discussion of chemical instrumentation. Even though there are many "see also" type cross-references, these are restricted to the ends of the articles and there are serious omissions. Neither of the two articles on the polygraph (*Lie Detection/Polygraph* and *Detection of Deception*), for example, gives reference to the other. Nor is one guided from the article on *Fingerprints (Dactyloscopy)-Standards of Proof* to the one on *Identification/Individualization: Overview and Meaning*, even though these two excellent entries are complementary and were written by the same author. Similarly, the article *Microchemistry* refers one to *Spectroscopy* and *Serology*, but fails to provide a link to *Analytical Techniques/Presumptive Chemical Tests*. Such omissions are disturbingly frequent and suggest that there was no systematic effort made to ensure integration of the topic areas.

The set of three volumes is expensive by most standards. After an "introductory" price of \$799 that was good until the end of Nov. 2000, it is now \$925. The price includes a year of web access. That access is then an additional \$75 in the 2nd and subsequent years. A potential selling point for sites with multiple potential users is that the "web access" feature is actually a site license of sorts, allowing a university library, for example, to register a number of campus computers for access to the work. At this writing, web access was not available, so it could not be directly evaluated. Attempting access got us into some rather arcane screens, but these problems can be worked out when the web site is ready. The publisher indicated that there are no current plans to update the electronic version of the work separately from the print version.

Indications in the publicity are that the book was designed to be useful to a variety of different audiences, such as forensic scientists, students, attorneys, and law enforcement personnel. Perhaps it will be so. But in our experience, it is difficult to write effectively for so many and such disparate audiences.

The book is, in the end, very comprehensive—probably the most comprehensive book ever attempted on the "forensic sciences" understood in the broadest sense. The content, though uneven in scope and somewhat disjointed, is of extremely high quality. The articles are excellent and despite the quibbles, it will be a useful reference for those who can afford the book or might otherwise have access to the printed or web versions.