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Physical Sciences Educational Reviews

The journal of the Physical Sciences Centre Number 12

Reviewed in this issue:
46 books
9 software packages
Forensic Science: an introduction to scientific and investigative techniques

This is a very comprehensive book on forensic science. The editors have commissioned 34 chapters, all written by practising forensic scientists, investigators and legal experts. For example, their backgrounds include experience in the Federal Bureau of Investigation (FBI), the US Department of Justice, the International Association of Forensic Nurses, various Medical Examiner’s Offices, Police Crime Laboratories, and as forensic consultancies. The first-hand experience of the authors and the use of real case studies, including photographs, captivate the reader. Even non-forensic-science students and the general public would find this book interesting reading.

As expected in a book called Forensic Science, there are chapters on toxicology, biological fluids and strains, DNA analysis, fingerprints, and related topics. More detailed books, like this one, might be expected to have some chapters on odontology (the study of teeth), taphonomy (what happens to a body after death), anthropology, forensic entomology (the role of insects associated with a dead body), evaluation of the crime scene, forensic psychology and psychiatry, and forensic science in the laboratory. This book, just doesn't have some of these chapters, it has all of them. The real bonus was the presence of chapters, which I did not expect: forensic nursing, forensic engineering, forensic computing, and legal and ethical issues. All these make for a very complete and comprehensive and balanced collection.

Given the current popularity of forensic-investigation television series and crime novels, it is easy to forget that there is more to forensic science than criminal investigations. For example, if a building collapses, is it due to negligence or fraud on the part of the designers and builders, negligence on the part of the owner for failing to maintain the structure, inherent problems with past building practices, or other factors? Here, there are discussions of differences between mortar and cement, as well as formulae for the stress on load-bearing walls. As I write this review, the relevance of the chapters on forensic engineering is exemplified by the collapse of a small part of an external double-brick wall at a major hospital in Melbourne, Australia's second largest city. Unlike some hospitals in Great Britain or Europe, this building is only about 60 years old.

The various chapters are easy to read, although the technical aspects do require at least matriculation-level or first-year-university knowledge of the science and technology for full appreciation of the subject matter. For example, there are equations describing the physics of friction, accelerating forces and general kinematics applied to analysis of skid marks. If the references and exercises were removed, this book would have a good chance of making the best-seller lists! However, with colour photographs of bodies (some of which are skeletonised), and blood spatter patterns from real crime scenes, it may not be everyone’s bedtime reading.

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There is extensive (almost exclusive) use of non-SI units, but this is far out-weighed by the good features. Every chapter has a set of revision questions and a list of references and suggested readings. The appendices include listings of websites, imperial-to-metric conversions, detailed glossary and index.

Who would benefit from this book? Certainly students and teachers of forensic science should do so.

Teachers who do not teach forensic science would also benefit from this book. The authors have linked discussion of case studies with the relevant scientific content: biology, chemistry, physics, psychology, etc. Teachers of non-forensic disciplines will be able to enrich their teaching with ‘real world’ applications of their science.
...James and Nordby have enlisted the hemisphere's leading experts in his or her individual field of expertise to explain and educate the reader to the topic at hand. I found the book to be concise, very informative, and easy to understand. For the college/university student, this book has the potential to be ranked as the 'must have' textbook.

Stuart H. James, Jon J. Nordby, Suzanne Bell. Covering a range of fundamental topics essential to modern forensic investigation, the fourth edition of the landmark text *Forensic Science: An Introduction to Scientific and Investigative Techniques* presents contributions from experts in the field who discuss case studies from their own personal files. This edition has been thoroughly updated to reflect the cutting edge of forensic science across many different areas. Designed for a single-term course at the lower undergraduate level, the book begins by discussing the intersection of law and forensics. Stuart H. James of James & Associates Forensic Consultants, Inc., is a graduate of Hobart College, where he earned a bachelor of arts degree in biology and chemistry in 1962. He received his MT(ASCP) in medical technology from St. Mary's Hospital in Tucson, Arizona, in 1963. Graduate courses completed at Elmira College include homicide investigation, bloodstain pattern analysis, and forensic microscopy.

Jon J. Nordby, PhD, D-ABMDI, earned his advanced degrees from the University of Massachusetts Amherst. He works as a forensic science consultant for Final Analysis Forensics, an independent consulting practice in medical-legal death investigation, forensic science, and forensic medicine.