

BOOK REVIEW

Brad J. Hall,¹ Ph.D., D.A.B.F.T.

Review of: *Clarke's Analytical Forensic Toxicology*

REFERENCE: Jickells S, Negrusz A, editors. *Clarke's analytical forensic toxicology*. London, U.K.: Pharmaceutical Press, 2008, 648 pp.

Clarke's Analytical Forensic Toxicology is a thoughtful adaptation of the contributions published in Volume 1 of *Clarke's Analysis of Drugs and Poisons*, 3rd edition. As the editors state in the preface, this new text is aimed at master's and Ph.D. students studying forensic science, forensic toxicology, and analytical chemistry involving forensic toxicology. The text covers a wide array of topics associated with forensic toxicology and forensic chemistry that enlighten the reader in both the practical nature of the work and instrumental theory. A core understanding of the instrumental techniques and theory is very important for forensic scientists when it comes time to interpret and comprehend the validity of the results, and this is reflected in the wealth of information included in the text.

Clarke's Analytical Forensic Toxicology begins with an introduction to forensic toxicology followed by an excellent chapter on pharmacokinetics and metabolism. Drugs of abuse and other substances including volatiles, pesticides, metals, and natural toxins are covered next. Additional chapters discuss workplace drug testing, alternative specimen testing, postmortem toxicology, clinical toxicology, drug abuse in sport, drug-facilitated sexual assault, alcohol/drugs and driving, and solid dosage identification. Chromatographic techniques, immunoassay, spectroscopy, and mass spectrometry are all thoroughly covered in subsequent chapters. Finally, the text closes with emerging techniques and quality control and assessment. The contributors to each chapter are well known and authorities in their respective fields.

The subjects in Volume 1 of *Clarke's Analysis of Drugs and Poisons*, 3rd edition are essentially covered verbatim, however

reorganized and include updates and exclusions where appropriate. For example, new rules have been updated associated with workplace drug testing, drugs in sport, and horserace drug testing. The editors have added updates to select chapters, for example several new figures have been added to the gas chromatography chapter to enhance the presentation. The material excluded in this new text primarily relates to the detailed experimental procedures that are part of Volume 1 of *Clarke's Analysis of Drugs and Poisons*, 3rd edition. However, given the scope of the text this omission is understandable, and in this reviewer's opinion leaves open the possibility of a laboratory manual to accompany the text. The only section completely omitted is the chapter about nuclear magnetic resonance spectroscopy. New material covered in *Clarke's Analytical Forensic Toxicology* includes drug-facilitated sexual assault, in utero exposure to drugs, and drug detection in sweat. The new information presented is concise, informative, and appropriately covered given the purpose of the text. A future edition would benefit by expanding upon the information relating to liquid chromatography/mass spectrometry to include additional theory and practical examples of drug screening and quantification commonly performed in laboratories today.

As was intended by the editors, they have achieved their goal of placing much of the information in Volume 1 of *Clarke's Analysis of Drugs and Poisons*, 3rd edition within the financial reach of students. Having had the privilege of having access to both the second and third edition of *Clarke* during my career, I believe that *Clarke's Analytical Forensic Toxicology* is a great adaptation of the series. Both students and laboratories alike would benefit by having a copy on the bookshelf.

¹Travis County Office of the Medical Examiner, Austin, TX 78701.