

BOOK REVIEW

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Review of: *Forensic Botany: Principles and Applications to Criminal Casework*

REFERENCE: Coyle HM, editor. *Forensic botany: principles and applications to criminal casework*. Boca Raton: CRC Press; 2005.

The purpose of the book is to introduce forensic scientists, criminalists, crime scene investigators, and officers of the courts to current applications of botanical evidence in legal matters. Coyle and her 19 co-authors deserve congratulations from the forensic community for this useful and ground-breaking work. Especially praiseworthy is the inclusion of contributions from workers in other nations in addition to the U.S. Coyne herself has contributed the most articles to this compilation; and unlike many edited volumes, this one does not read as if written by a committee. This reflects on Coyne's editorial talents in addition to her writing skills.

The book can be divided into three subject areas: an overview of plant biology, an introduction to DNA especially as applied to botanical materials, and many examples of case studies based upon botanical evidence. My original impression of the chapters that introduced botanical science was that they were overly simple; but upon consideration, I realized that this is necessary in a work of this sort. Most forensic scientists who work with medical and biological evidence have been under-educated in plant science, tending to take little more than a cursory course in botany with emphasis on zoology and human biology course work in their educations.

Aside from general botany, the book deals most seriously with DNA evidence obtained from plants, fungi and certain single-celled organisms. DNA work in general is experiencing great emphasis in contemporary forensic science, as can be seen in the subject matter of current journals in the field. Some disadvantages in using DNA for plant analysis should be stressed. DNA analyses tend to be expensive, and the results often are slow in coming. The latter is due in part to an insufficiency of appropriate analytical

laboratories; and in part to the analytical processes themselves. However, entrepreneurial, worthy commercial labs are a fast growing industry. The chapter on identification of plant species using DNA is weakened because there are much simpler ways of identifying the species of one of the 300,000 flowering plants or the several thousand other species of nonflowering plants discussed in the text. While each of the world's cultures has a diet made up of only 100 or so species, these diets and species differ greatly among cultures. For plant and plant cell identifications, consultation with a local botanical expert, wherever you are in the world, generally saves time and money. Such evidence is readily accepted from such persons because the methods used have been tested since the origin of the light microscope. The only other caution I can make is the need for an alphabetical summary of the references at the end of the book. Both the index and glossary are excellent.

Taking advantage of DNA and other biochemical techniques for exact identification of drug plants is invaluable and is clearly explained in the book. Also, linking the DNA of an individual plant to crimes has produced dramatic and successful results.

The chapters dealing with basic botany, DNA structure and function, palynology, and advice for court testimony are invaluable. Also, the ample case studies that illustrate applications of botanical evidence makes the book significant not only to forensic scientists, but for crime scene evidence collectors. This book complements and does not significantly overlap the earlier book of the same name by David Hall. This useful book should be made available widely to forensic scientists, law enforcement, legal experts, and biology departments that have use for contemporary botany resources. Libraries and practitioners take note!

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