

## BOOK REVIEW

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### Review of: *Digital Analysis of Bite Mark Evidence Using Adobe® Photoshop®*

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**REFERENCE:** Johansen RJ, Bowers M. Digital analysis of bite mark evidence using Adobe® Photoshop®. Forensic Imaging Services, Santa Barbara, CA 2000, 112 pp., \$79.00

The use of digitization and computer analysis in many areas of forensic science is "cutting edge." The same is true of bite mark analysis. The authors have taken what to many of us is a confusing and technically complex procedure and reduced it to a straightforward and simple technique. Adobe® Photoshop® can be a daunting program to learn, and incorporating the necessary safeguards and logging of steps used to get to the end work product would take many hours of study by the average odontologist. This spiral bound text, which includes a 3.5" diskette with a sample case, makes the learning curve quite reasonable. The spiral binding also allows it to be easily used as a workbook. I might add that these techniques could very well find wide use in the criminalistics/pathology/anthropology communities, particularly, in tool mark/patterned injury analysis, much as the ABFO #2 photo scale has found wide use throughout the forensic sciences worldwide for documenting evidence.

The introductory chapters include hardware and software requirements for both Windows and Mac operating systems, and continue with a quick summary of Photoshop® and how to set up the program for use in pattern analysis. The chapter on scanning walks you through the proper hardware/software settings, and more importantly, where to find them within your computer. This helps those of us with limited navigational, or intuitive software skills immensely.

The book continues with comprehensive, well-illustrated step-by-step chapters containing straightforward instructions on correcting photographic distortion, resizing of the photo to life-size,

printing, making enhancements (such as color balance and contrast), and adding text to the photo. Most important is the instruction on the use of the History Palette that is part of Photoshop. It allows you to document each and every change that was made to the original case photo, sometimes, a critical element in courtroom testimony. "Doctor, what exactly *did* you do to 'manipulate' the evidence?"

Final chapters review scanning the suspect's dental casts and creating the overlay. Here, techniques to mask unnecessary background and make very presentable courtroom materials are outlined. The non-metric digital analysis of the bite mark and subject dentition is reviewed, and finally, metric and angular analysis of the bite mark and dentition is described in detail.

This text, well written and easy to understand, is an important addition to literature on bite marks. Any odontologist (or toolmark examiner, pathologist or anthropologist) who is contemplating digital analysis of evidence and comparison to a weapon/tool would find this book to be most useful. Because it quantifies the evidence in a reproducible format, subjectivity that is often the focus of the attack by the opposition attorney is minimized. In the same way, this type of technique can readily demonstrate for the trier of fact, errors, or subjectivity on the part of the state's witness, if they are using older and more subjective techniques.

I have personally used the book as a handy guide for digital bite mark analysis, and it has proved an important tool in my armamentarium. Use of these methods also keeps the chain of evidence to a minimum in that outside photo labs are no longer necessary to process the photos to lifesize for analysis. Thus the workup can be done on the time schedule and convenience of the odontologist using a personal computer/scanner/printer setup that does not require a huge investment.

Dr. Bowers and Johansen are to be commended for their efforts to keep all of us up to speed on new technology pertaining to bite mark analysis.

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