Introduction: FORENSIC SCIENCE (Part 2)

Special Issue on Forensic Science (Part 2)

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We are pleased to introduce Part 2 of *the Canadian Journal of Police and Security Services'* (*CJPSS*) special issue on Forensic Science. Before briefly describing each of the articles, we would like to extend our appreciation to the editor, Dr. Jeff Pfeifer, for permitting us to guest edit this special issue. As we have noted prior, we believe that *CJPSS* will provide an important outlet for research on forensic science, particularly given the journal's ability to bridge the gap between research and practice, and for its attempts at maintaining rigorous academic standards throughout the process. We would also like to extend our appreciation to an exceptional panel of reviewers who devoted their valuable time to preserving these academic standards and to ensuring that the manuscripts could be appreciated and relied upon by professionals in the field.

The current special issue includes four articles reviewing, and in several cases presenting empirical data, on key issues in forensic science. First, David Ashbaugh and Max Houck provide an important review of friction ridge identification – likely one of the oldest methods of forensic identification still in use today. Ashbaugh and Houck describe the history of this method, as well as confront the challenges this discipline has faced in recent years. In closing, the authors describe the latest methods and procedures that fingerprint analysts use to provide error-free identification of suspects.

Second, Matthew Repp and John Allison describe a program of research focused on the identification of dyes and pigments used in the labeling of iron pipes. Pipe bombings have become more common in recent years, and the authors' present a line of research that aims to provide a basis for identifying the manufacturer of pipes used in such bombings, thereby leading to the eventual identification of those responsible for the crime. Repp and Allison's approach in the current study involved examining the chemical information that remains on the pipe via laser desorption time-of-flight mass spectrometry. Their results yielded several important successes in the

identification of pigments that can be linked to certain pipe manufacturers, and provide promise to this method of identification.

Third, Cathy Carter-Snell and Kathleen Soltys provide a review of the use of ultraviolet light in the identification of semen on the skin of sexual assault victims. The authors note that there is little data on the optimal wavelengths of light for detecting such stains. As a result, Carter-Snell and Soltys present empirical data evaluating several commercially-available ultraviolet lights for their sensitivity and specificity in distinguishing semen stains on human skin. The authors' results suggest that lights of 450nm wavelength appear most optimal for the identification semen stains, and that clinicians might benefit from the use of such lights when examining sexual assault victims.

Our fourth article is contributed by Kenneth Furton and Douglas Heller who discuss the value that detector dogs play in locating items of forensic interest, as well as efforts to promote scientifically-based guidelines for their use. The authors review recent legal decisions where reliability of canines has come into question and make the case for a critical need for objective standards of performance. They also compare the merits of dogs vs. instruments and conclude that for the foreseeable future dogs still represent the state of the art in real time detection of items of forensic interest. Lastly, they describe a recently formed scientific working group, SWGDOG, whose mission is to promote consensus best practices in order to raise the bar with regard to reliability and courtroom defensibility of detector dog teams. On a related front, Fred Helfers also provides a review of a recent US Supreme Court case, *Illinois v. Caballes*, in which the use of drug detection dogs during a lawful traffic stop was questioned. In a 6-2 decision, the Court held that the use of drug detection dogs was legally permissible, thereby opening the door for the use of such dogs absent any reasonable suspicion or consent of the individual. Helfers provides an excellent review of the important issues surrounding the Court's decision, and relates this ruling to relevant criminal and case law in Canada.

Taken together, we hope you will enjoy reading this two-part special issue on *Forensic Science*. As guest editors for the journal, we have certainly appreciated the high quality of the manuscripts we have received for review, and we hope that this special issue will further promote those interested in the topic – from academia to professional practice – to submit their work to *CJPSS* in the near future.

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