FORENSIC EVIDENCE IN CANADA edited by G.M. Chayko, E.D. Gulliver and D.V. Macdougall (Toronto: Canada Law Book, 1991)

Most lawyers are not trained scientists and yet find themselves occasionally required to examine and cross-examine witnesses who are. The ability to handle scientific evidence skilfully is one normally developed through hard experience and, often, mistakes. Novice lawyers can find themselves intimidated by expert witnesses or bewildered by the evidence itself. A failure to intelligently question, interpret or challenge the evidence offered by the expert may damage or ultimately lose an otherwise solid case. Much of the difficulty here may reside in a failure on the part of counsel to understand and appreciate the practical applications and limitations of expert evidence.

The appearance of *Forensic Evidence in Canada* will be welcomed by any lawyer who finds himself or herself faced with a case in which the bulk of the evidence is scientific in nature. There is a regrettable dearth of material available for the Canadian practitioner, and this book fills that gap. It may be surprising that such an important and intriguing area of the law has been given such short shrift previously, but most works for the legal practitioner tend to concentrate on the specifically legal problems involved in the admission of evidence. The editors of *Forensic Evidence in Canada* do not attempt a detailed examination of the reception of expert evidence in Canada generally. There are a few introductory chapters on the topic, but the major aim of the book is to acquaint practitioners with problems and processes in specific areas. The book also highlights some of the difficulties and limitations faced by forensic investigators which may lead to incomplete or faulty results.

A difficulty exists in the attempt to apply the methods of one form of inquiry to another. The process of scientific inquiry is one which often rests uneasily alongside the requirements of the legal process. The law of evidence, both civil and criminal, must concern itself with matters beyond the explanation and description of phenomena. Policy dictates the exclusion of some evidence that no rational scientist would discard. On the other hand, the law often demands from the scientist an absolute opinion that he or she may not be able to give. Scientists are accustomed to expressing themselves in terms of probabilities and not in the perhaps simplistic manner counsel may prefer.

Lawyers are no less prone than other laypersons to being overawed by some scientific areas and techniques. Furthermore, they are no less prone to becoming overly cynical when problems or difficulties of proof arise with respect to these areas. As the author of the chapter on DNA identification puts it, "for every new scientific testing procedure, there are initial stages of exaggerated power and infallibility followed closely by periods of skepticism."[1]

DNA identification is a case in point. Persons in Canada have been both convicted and acquitted partly on the basis of DNA identification, and yet the ability of the legal

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1. Dr. J.S. Waye, "DNA Identification" in G.M Chayko et al., eds. *Forensic Evidence in Canada* (Toronto: Canada Law Book, 1991) at 319.

profession to understand the scientific basis of and limits to the use of this evidence is probably not great. Although it was once hailed as a test of identity as conclusive as a fingerprint, DNA identification as the technique currently exists is now being seriously challenged. Most lawyers are not sufficiently familiar with the theoretical base upon which such evidence rests, therefore, they are not in a position to attempt to seriously test it in court.

The most notorious recent case in Canada on this subject is undoubtedly that of Allan Legere, the so-called "Madman of Miramichi," convicted in 1991 of a brutal series of sexual assaults and murders. The key evidence against Legere was DNA identification. Samples of DNA taken from semen at the scene of one of the crimes were held to be a match with DNA samples subsequently taken from Legere. Legere's counsel argued that this identification was in error on the basis of the population data bases used. It was argued that the Miramichi population generally (of which Legere was one) was a much more homogenous population than the one in the data base used for comparison, and thus the results were invalid. In a highly interbred population, the frequency of certain genotypes will be higher. A non-representative population base will not reflect this. In Chapter 12, "DNA Identification," author Dr. John S. Waye discusses this problem and the methods which may be used to avoid it. This provides valuable guidance for counsel attempting to challenge DNA identification on the same basis as Legere's counsel (admittedly unsuccessfully) attempted to do.

The twenty-four chapters in the book range from general chapters on the use of forensic evidence in the trial process, to chapters on qualification and cross-examination of experts, to more specific chapters on matters such as DNA identification, bloodstains, fingerprints and ballistics evidence. There are welcomed chapters on more recent specialties such as forensic accounting and engineering. Each one of these topics is worthy of a book in and of itself, but the material is skilfully handled so as to give the non-expert lawyer a good overview of the subject area. Most of the chapters conclude with a section entitled "Selected Sources for Further Inquiry" which provides excellent references to other works many which are primary sources in the field. These are very valuable guides for locating experts within various fields and assessing their qualifications. The authors of the chapters are themselves all highly qualified and most have experience in providing expert testimony in the courtroom.

The writing style throughout is generally excellent, easy to understand and not laden down with superfluous technicalities. These are technical areas, and the use of technical terminology is necessary to provide adequate and accurate descriptions. There are, however, excellent footnotes and definitions sections throughout to guide the less scientifically astute. Perhaps the only quibble would be with some of the illustrations which range from highly informative to somewhat puzzling. It may not be only this reviewer who failed altogether to understand what some of the illustrations were purporting to illustrate.

A note for the squeamish or those with delicate sensibilities, the illustrations in the chapter on bloodstain pattern interpretation can be somewhat upsetting. The material is presented with a total lack of sensationalism but, nonetheless, contains a few explicit

photos which some may want to avoid. The rest of us may wish to turn to that chapter first!

Overall, *Forensic Evidence in Canada* is an excellent book that provides fascinating reading even when read with no specific problem in mind. Many, both in and out of the legal profession, will enjoy this straightforward and highly informative presentation of the use of scientific evidence in the trial process.

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