

HANDWRITING & FINGER PRINTS ANALYSIS IN CRIMINAL TRIAL & INVESTIGATION (2009) by B.L. Bansal & Rajiv Raheja. Capital Publishing House, Shop No. 13-14, Civil Wing, Tis Hazari Courts, Delhi-110054. Pp. xxiv+696. Price Rs. 650/-.

THE SCIENCE of identifying thumb impressions is an exact science and does not admit of any mistake or doubt.¹ Fingerprint evidence is seen as one of the best types of physical evidence linking a suspect to an object or location or for establishing identity. "Fingerprints offer one positive means of identification that never changes from the cradle to the grave. Plastic surgery may change the contours of face, ill-health and old age may shorten the stature of a person, but the arches and whorls that graced the fingers and thumbs at birth will still be there when one reaches the end of life's journey."² Forensic investigators have been using fingerprint evidence as a source of identification of suspects. They have a range of techniques for finding prints, cleaning them up, enhancing print images and rapidly finding a match from a database using computer technology. This has replaced anthropometric³ measurements as a more reliable method for identifying persons having a prior record, often under a false name in a criminal record repository. No two fingerprints have ever been found identical in many billions of humans and automated computer comparisons. Fingerprint examination is the fundamental tool for the identification of people with a criminal history in every police agency and it remains the most commonly gathered forensic evidence worldwide, claimed to outperform DNA and all other human identification systems used in forensic examinations.

The evidence of handwriting expert unlike that of a fingerprint expert is generally of a frail character and the court should be wary of giving too much weight to it.⁴ Evidence of handwriting expert should be taken

1. *Thangapandia Thevar v. State*, 1985 M.L.J. (Cr.) 384 at 389.

2. *Pathumma v. Veersha*, 1988 (2) Civil L.J 614 at 616 (Ker.).

3. Anthropometry refers to the measurement of human individual for the purpose of understanding human physical variation.

4. *Gopal Reddy v. State of AP*, AIR 1996 SC 2184; *Bhagwan Ram v. M.K. Sharma*, AIR 1973 SC 1346.

with great caution⁵ because identification of handwriting is an imperfect science.⁶ An expert can certify only probability and not one hundred per cent certainty. Evidence of an expert as to handwriting is only in the nature of an opinion and it can rarely, if ever, take the place of substantive evidence. It should be corroborated either by clear direct evidence or by circumstantial evidence. Such evidence cannot be conclusive by itself.

The current review refers to the methods employed in the analysis of fingerprints and handwriting and their utility in criminal trials and investigation. The entire manuscript of the book under review⁷ has been divided into twelve chapters and a general index has been appended at the end to facilitate easy access to relevant topics. Chapter 1 introduces the reader to the science of fingerprints; how it has developed and what sets it apart. The authors have given a very interesting description of arches, whorls, loops and composites along with pictures depicting different patterns and have provided a detailed account of their utility in Hindu and Chinese palm reading techniques. The chapter explains how fingerprints are used by psychologists to predict the general temperament and disposition of the bearer and provides an insight into the study of palmar patterns to know the physical, mental and emotional traits of an individual.

Chapter 2 begins with a set of questions and answers drafted in an easily comprehensible language, especially formulated to satisfy the reader's curiosity regarding the study and development of the scientific aspect of fingerprints. The authors have given a physiological account of the construction of human skin detailing its components, layers, sub-layers, growth process and the development of ridges along with an analysis of the factors that influence ridge configuration. The acceptance of fingerprints for identification purposes and the history of their usage by different people and institutions has been traced in a chronological manner. This chapter also provides an introduction of the three types of fingerprints, latent, patent and plastic prints.

In chapter 3, the authors further proceed to explain that classification of fingerprints is a three-fold process involving a study of the shapes and

5. *Piara Singh v. Jagtar Singh*, AIR 1987 P & H 93.

6. *M.K. Usman Koya v. C.S. Santha*, AIR 2003 Ker. 191.

7. B.L. Bansal & Rajiv Raheja, *Handwriting and Finger Prints Analysis in Criminal Trial & Investigation* (2009).

contours of individual patterns, noting the finger positions of the pattern types and by relative size, determined by counting the ridges in loops and by tracing the ridges in whorls. Great efforts must have been put in for giving a detailed description of technical terms used in fingerprint work along with sketches reflecting various types of patterns and their interpretation. This chapter will be particularly useful to those engaged in forensic research work as it explains the technicalities involved in ridge counting and how this difficult task can be accomplished with reasonable accuracy. It also offers a study of the techniques involved in taking fingerprint impressions from dead or decomposed bodies and it provides a step by step guide to the technique along with a list of precautions to be taken while recording legible fingerprints from scene of occurrence or when fingerprinting an individual with abnormalities of fingers, thumbs or hands such as amputations, scars, deformities, extra fingers or webbed fingers. Attention has been paid to the minutest of details which would be of a great help in the field of criminal investigations.

The technicalities involved in the lifting and development of latent impressions of fingerprints have been dwelt upon in chapter 4. The processes employed, materials required, and the precautions to be exercised while undertaking latent fingerprinting and special tips for lifting such prints from crime scenes where blood is present have all been put together by the authors, but poor editing has spoilt the work as the contents appear to be blatantly copied without acknowledging the source. For example, on page 200, under the heading Safety and Procedural suggestions, while expressing concerns regarding use of superglue fuming by police and army, instead of providing the link, the term used is 'click here'. Such blunders should have been avoided.

A study of the fundamental principles applied in the search and development of different types of patterns in fingerprinting has been undertaken in chapter 5. This appears a little incoherent with the flow as the readers would expect some more information regarding plastic and patent prints after studying about latent prints in chapter 4.

The authors further proceed to give an insight into various model processes employed in fingerprint identification in chapter 6. The correct scientific methodology to spot and identify similarities as well as

8. Palaeography is the study of ancient handwriting and the practice of deciphering and reading historical manuscripts.

dissimilarities has been explained with the help of diagrams of impressions.

In situations, when the verifier does not reach the same conclusion as the identifier, the comparison is put in the questionable identification procedure and the case is to be then presented to at least three other experts who have not dealt with the same mark before. Chapter 7 provides an insight into this questionable identification procedure but, while going through the contents of this chapter, the reader feels cheated at places as the chapter delivers less than promised. The reader has to struggle hard to find a link between the steps of the 'five step' identification approach and the fifth step, *i.e.* testing the conclusion is nowhere to be found. The first paragraph of this chapter talks about the undesirability of a discussion between the proposer and verifier as discussed in chapter 9.9 of the first report. Which report is being talked about here is left to the reader's imagination and is nowhere to be found in the book. In the discussion part, on page 263, two references, though numbered, are conspicuous by their absence. The authors have not bothered to put them either in the footnotes or endnotes which leaves the reader with incomplete information and in serious doubts about the originality of this work. Again, on page 273, while explaining the direct gray-scale approach, the authors have not provided the figure 4.3(a) anywhere in the book and, again, there is a reference numbered [9] which has nowhere been given in the footnotes or the endnotes.

Chapter 8 throws light on various complications and complexities in matching of fingerprints and the two basic approaches of point based and graph based verifications in correlation based matching procedure. This chapter also covers extensively the subject of fingerprinting the dead. This is of immense significance in ascertaining the identity of victims in terror attacks or other manmade as well as natural disasters where bodies are mutilated, charred or decomposed beyond recognition. Here, the authors have also referred to use of X-Ray photography or DNA fingerprint identification to establish personal identification in criminal matters. However, on page 292, the authors have advised the readers to see subtopic of this chapter pertaining to general photography, but this subtopic is not given either in the chapter or anywhere else in the entire book.

The study and analysis of handwriting especially in relation to human psychology is termed 'graphology'. Chapter 9 is an extensive and in depth study of the science of graphology and explains how it can be done accurately with the help ten modules. This chapter is a vast reservoir

of information on various types of graphology, significance of ink used, letter formations, slant, size, shading, alignment, pen pressure, style, spacing, tremor, speed, margins, proportions, lifts, strokes, embellishments, loops, formatting and a gamut of various other factors, all of which play a significant role in assessing the overall personality as well as answering questions regarding the involvement of the subject in the crime.

Chapter 10 is of great interest for law students as it deals extensively with the topic of expert evidence and its relevance and admissibility in criminal trials. The authors have collected a lot of information and cases relating to section 45 of the Evidence Act, 1872 and the importance of expert testimony regarding fingerprints, handwriting, typewriting and also the growing importance of DNA fingerprinting and narco analysis or brain mapping. But the chapter is not structured properly. The information comes in bits and pieces and not in a flow. Moreover, there is repetition at many places which indicates that material might have been borrowed from other sources.

For those interested in graphology, chapter 11 provides a good information bank on all related topics such as palaeography,⁸ calligraphy and study of western, east Asian, Indian, Chinese, Nepalese, Iranian, Tibetan, Persian, Islamic as well as Mayan calligraphy providing a valuable insight into their cultures and civilisations. This chapter also discusses the principles to be borne in mind for detection of forged handwriting which is leading to a vast number of litigation, especially in the banking and legal sector. Causes of left handedness and its possible effects on the thought process of such individuals also make for a very interesting aspect of the study of graphology.

Chapter 12 gives an introduction to the science of poroscopy which is the study and comparison of sweat pores contained in ridges which is important for the study of fingerprints. The reviewer feels that this information on poroscopy should have been placed along with the other chapters on fingerprinting and it appears out of sync here. Moreover, the other information on expert evidence in this chapter deals exclusively with disputed signatures which should ideally have been incorporated in the chapter on forged handwriting and is misplaced in this chapter which is titled 'Poroscopy'.

Overall, the reviewer feels that the book, though rich in content and extremely useful for students of forensics, needs to be thoroughly revised as poor editing has reduced the credibility of the book as an original and authentic source of information. Significant portions appear to have been

lifted from the net or other sources without acknowledging the same. For example, on page 304, there are two full paragraphs which are a warning to anyone who copies the work. All limits of plagiarism have been crossed as the authors have blindly copied the text along with the warning contained in it without even caring to delete the warning part. Many portions of the book present an incoherent and disjointed work which need a proper re-structuring.

*Vageshwari**

* Sr. Asst. Professor, Faculty of Law, University of Delhi, Delhi.
Email: dvageshwari@yahoo.co.