

The Skin of Murder Victims

Fingerprints and Other Evidence

Brian E. Dalrymple



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Foreword

The detection of latent friction ridge impressions on the skin of a murder victim presents the forensic investigator with perhaps the most difficult of challenges, yet the successful retrieval of such physical evidence could provide compelling leads for the fast resolution of the investigation. Unlike other porous surfaces, human skin is covered by chemicals secreted from the eccrine and sebaceous glands. Latent friction ridge impressions are typically also composed of sweat and sebum. From this brief, simplified description the detection of fingerprints on human skin would seem an impossible task since both the latent friction ridge impression and the surface on which it is located are of the same chemical composition. In addition it should be noted that during the commission of a violent crime, distortion and blurring of the impressions are likely which further decrease the chances of visualizing a fingerprint that is suitable for comparison. That several murder cases have been solved by the recovery of a suspect's friction ridge impression from the murder victim shows that the situation is not as hopeless as it first may appear.

The Skin of Murder Victims: Fingerprints and Other Evidence provides details of many of the criminal cases that were solved by the recovery of not just fingerprints, but footwear impressions, handwriting and trace evidence on the victim's skin. Tracking down many of these details, some of which have never been published, required an exhaustive search by the author but the effort has been well rewarded. The value of this book is that the limited casework and research studies have been consolidated and organized so that forensic investigators can learn from these past experiences.

Brian Dalrymple is well qualified to author this text. During his 28-year career with the Forensic Identification Services of the Ontario Provincial Police he conducted many body examinations, often using the argon ion laser. Early in his career Brian was part of the team that introduced the technique of evidence detection with argon lasers to the forensic identification community. Nowadays extensions of this technology are in use globally and have provided crucial evidence in hundreds of major investigations. As a result of his experience in examining murder victims for physical evidence, he initiated and co-wrote the Body Examination Protocol for the Province of Ontario, Canada.

The detection of friction ridge impressions and other evidence on human skin will always be a very difficult examination that has a low chance of success. That most of our casework successes date back to the late 1980s and early 1990s indicate that forensic investigators are no longer completing this type of examination. It is my hope that the information contained within *The Skin of Murder Victims: Fingerprints and Other Evidence* will inspire forensic investigators to once again take up the challenge of doing comprehensive body examinations.

Della Wilkinson, PhD, Research Scientist
Integrated Forensic Identification Services
Royal Canadian Mounted Police
Oct. 11, 2013

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About the Contributors

William J. Lucas, MD, CCFP, was appointed the Deputy Chief Coroner—Inquests in May 2013. In this role, he oversees the planning and scheduling of inquests throughout the province, as well as distribution of inquest jury verdicts and tracking of responses to recommendations. Important responsibilities include providing support and advice to the Chief Coroner; training and ongoing education of inquest coroners; oversight of several Regional Supervising Coroners (RSC) and investigations within their areas of jurisdiction.

From 1977–1996, in addition to his family medicine practice, he assumed several administrative roles at Peel Memorial Hospital, Brampton (now Brampton Civic Hospital), including the Chief of Staff position from 1984–1990.

Dr. Lucas was appointed as an investigating coroner in 1991, and became a full-time Regional Supervisor in 1996. His RSC positions have included Niagara Region, City of Toronto, Metro West (including Peel Region) and most recently Central Region (York, Durham and Muskoka), where he was responsible for approximately 1500 death investigations annually.

Dr. Lucas has at various times acted as Acting Deputy Chief Coroner-Inquests, and Associate Deputy Chief Coroner. He has presided over 51 inquests to date, covering a broad variety of death circumstances. Some have been quite complex, and have required rulings that have established important case-law informing the inquest process.

Among his duties at the Office of the Chief Coroner, Dr. Lucas also has been Chair of the Domestic Violence Death Review Committee of the Office of the Chief Coroner since 2006.

Myriam Nafte is a forensic anthropologist and visual artist who continues to volunteer her services for criminal casework in the United States and Canada. She received her Honors BA in Medical Anthropology from York University, a BEd degree specializing in Science from Brock University, and completed an MA in Physical Anthropology at McMaster University in 1992. Since then she has taught college and university-level courses, and police workshops in skeletal biology, forensic anthropology and archaeology. Nafte has most recently completed a PhD at McMaster University researching the trafficking of human remains. She is the author of the book *Flesh and Bone: An Introduction to Forensic An-*

thropology and the co-author of *Crime and Measurement: Methods in Forensic Investigation*.

Della Wilkinson has a PhD in chemistry from Cambridge University and has been providing scientific and technical support to the forensic identification community since the early 1990s. She has been the recipient of several research grants. She contributed a chapter to the recent edition of *Advances in Fingerprint Technology*. She has published many scientific papers in National and International peer-reviewed journals and has two patents. She is an adjunct professor with the University of Toronto's Forensic Science Program, a member of SWGFAST and in 2011 she received the Foster Award, the highest honour given in the Canadian Identification Society.

About the Author

In 1971 Brian Dalrymple began a career in identification with the Ontario Provincial Police, Forensic Identification Services. In 1977, in collaboration with scientists from Xerox Research Centre, he co-developed the technique of evidence detection with argon lasers through inherent fluorescence and became the first in the world to operate an argon laser for the detection of evidence in criminal investigations. The extensions of this technology are now in global use and have provided crucial evidence in hundreds of major investigations.

In 1991, as Associate Section Head, he introduced the first Computer Evidence Enhancement System to Canada, and later became the first Canadian to tender expert evidence in this discipline. He initiated the technique of Digital Image Subtraction. In 1992 he was promoted to Manager, Forensic Identification Services, a position he held until his retirement in 1999. He initiated and co-wrote the Body Examination Protocol for the Province of Ontario, Canada.

Since then, Brian has published extensively in the disciplines of luminescence detection, photography of evidence and digital enhancement of evidence. He served as a contributing author in the *Encyclopedia of Forensic Sciences* (Academic Press, 2000) and is the co-author of *Crime and Measurement: Methods in Forensic Investigation* (2011).

In recognition of the significance of his contributions to the field, Brian has been the recipient of the John Dondero Award (1980, IAI), the Award of Merit (1980, Institute of Applied Science), the Foster Award (1982, the Canadian Identification Society) and the Lewis Minshall Award (1984, Fingerprint Society, UK).

He has also been awarded numerous performance citations, including three Commissioner's Commendations, all for homicide investigations.

Brian Dalrymple has taught throughout North America, the Middle East and the Pacific Rim. He is currently an instructor at the Ontario Police College, and provides forensic consulting for police agencies, attorneys, and the private sector. He also teaches throughout the United States.

Introduction

There can be no more important police investigation than murder. Resources are more readily expended in the search for evidence that will bring a killer to justice than for property crimes. There are several reasons for this, the first of which is self-evident. The worth a society attributes to human life will be reflected in its response to the taking of it.

There are also proactive benefits to the timely resolution of a murder case in which the offender is identified and charged. Lives may be saved. A murderer who is identified, successfully prosecuted and incarcerated will not be free to kill again.

Deterrence should also be considered. If the police structure acts (and is seen to act) quickly and effectively in response to a murder, the risks of being caught may force some potential offenders to rethink their actions.

Cutting-edge forensic technology expertly applied is cost-effective. Good examinations save money, while those done inexpertly, incompletely or not at all may result in attenuated court sessions that consume valuable time and resources, if indeed they end up in court. When these tools are used by those with the training, the equipment and the will to use them, offenders are more likely to be identified and apprehended. Similarly, the prosecution is more likely to be shortened when evidence is professionally, objectively and clearly tendered. It has been said that true economy is doing the job right the first time.

Lastly, those that work in the forensic discipline enjoy a sense of accomplishment, pride and purpose when their evidence in court is afforded the weight it deserves, regardless of outcome. Positive results are more likely to beget positive efforts in future.

Active interest surrounding the question of fingerprints on the skin of murder victims is recorded as beginning independently in the 1960s and 1970s, in two separate parts of North America. Comprehensive research and exciting discoveries occurred in both jurisdictions.

The author has attempted to locate and cite as many documented investigations as possible in which a killer has been identified by his finger/palm print on the skin of his victim, as well as other significant forms of physical evidence recovered from the body—on the bare skin, hair or clothing.

Tracking down successful cases from two and three decades ago has been challenging, time consuming and rewarding. Specifics of the homicides

and images have been obtained and anecdotal reports of fingerprints detected on bodies have come to the attention of the author, originating from many states and countries. Some of these accounts are more than twenty years old. The investigations that lack sufficient details to establish provenance have not been included. Many of the principal investigators and forensic professionals who contributed to these cases are either retired or deceased.

By far the greater part of all successful, documented cases involving fingerprints on skin, located and verified by the author and appearing herein, occurred between 1976 and 1993, twenty to thirty years ago. The pertinent case information (names withheld) has been included, to the degree it was available. While it is almost certain that the research conducted for this book has not revealed all body examinations, successful or otherwise, since the mid-1990s, a reduction in the number of attempts seems all too evident. However, it is reasonable to assume that those individuals committing murder have continued to leave fingerprints, shoeprints, writing and trace evidence on bodies and at crime scenes with the same frequency as before. The author hopes that the information contained in this book will be useful to and used by police agencies in adding or strengthening comprehensive body examination, as part of their program delivery.

Chapter 1 examines the roots of body examination beginning with an overview of some of the research from the 1930s to the 1970s. Chapter 2 explores some of the comprehensive research initiatives undertaken with the goal of optimizing fingerprint evidence on skin. Chapter 3 documents the evolution of luminescence as a non-invasive detection strategy, beginning with the argon ion laser of 1977 which has resulted in the range of forensic light sources used extensively today. Chapter 4 outlines crucial evidence other than latent fingerprints which have been discovered routinely during body examinations.

Chapter 5 details the health hazards which may be encountered during body examination, including those associated with deceased persons, crime scenes, identification equipment and chemistry. Chapter 6 documents the origins, evolution and rise of DNA technology in a quarter century to arguably the most vital of all individualization and elimination sciences. Once reliant on significant quantities of body fluids like blood, saliva and semen, the process is now so sensitive that the genetic profile of an individual may be generated after a simple touch of the fingers. The priority afforded to the correct acquisition and protection of DNA samples is discussed.

Chapter 7 stresses the need for conferencing and cooperation with partners in the body examination process, before and during examinations, in order to ensure that fingerprints and other trace or impression evidence are recovered without negative impact on any part of the autopsy process. Chapter 8 gives a general overview of how to approach, triage

and examine a crime scene, and offers step-by step sequential procedures for the fingerprint examination of skin by the methods that have been used successfully.