

# THE HOLY SHROUD OF TURIN

**A GENUINE ARTIFACT OF THE  
RESURRECTION OF JESUS CHRIST**

Dr. R. Gary Chiang PhD

*The Holy Shroud of Turin: A Genuine Artifact of the Resurrection of Jesus Christ*

Chiang, R. Gary

Edited by Evelyn M. White

Copyright © 2016 Doorway Publications



All rights reserved. No part of this book may be reproduced in any form without written permission from the author and Doorway Publications, 346 Southcote Road, Ancaster, Ontario, Canada, L9G 2W2. Email: [doorway.publications@gmail.com](mailto:doorway.publications@gmail.com)

Doorway Publications is the publishing division of the Arthur Custance Centre for Science and Christianity, a non-profit organization which seeks to preserve, promote, and re-publish the written works of Arthur Custance and to stimulate study of the Bible in the light it receives from, and contributes to, the whole field of knowledge by means of publications, electronic media, and education.

Website: [www.custance.org](http://www.custance.org)

ISBN: 978-0919857-93-3

National Library of Canada

Printed in Canada

Second Printing: May 2017

Front picture: Digital photograph of the Holy Face from a life-sized replica taken by the author at an angle, converted to black and white, and photo-enhanced. I am indebted to Eva Kiszti of Costa Rica for encouraging me to explore different ways to photograph this image.

## ACKNOWLEDGEMENTS

Several individuals have influenced this book and have brought it to its fruition. The most significant of whom is my wife and colleague, Jennifer Chiang (nee King), whose support has made this work possible. Meeting as undergraduates at the University of Toronto in the 1970's, we have lived and worked together ever since, raising four children, co-authoring several scientific papers, and team teaching biology courses. Her encouragement and support are beyond measure.

Evelyn M. White, once the administrative assistant for Arthur Custance, has been a friend, colleague, and my editor since 2000. Together we have edited and reprinted 15 of Arthur Custance works making them available to the next generation of seekers. As always, her input into the present work during all of its stages, from inception to completion, is greatly acknowledged.

Rob Faw, Director, Investech Foundation, dropped by my office quite unexpectedly in November of 2015. He graciously offered to review a draft of this book and provided comments to improve its focus and worldwide potential. The timing of our chance encounter could not have been planned better. But such should be expected when the Lord is at work.

Finally, I would like to acknowledge my parents, now deceased, who overcame racial prejudice in the 1950's to raise a family dedicated to the Lord. They gave me a solid foundation in faith, as well as a very happy childhood. It is to them I humbly dedicate this work.

## Table of Contents

Preface.....	1
Chapter 1	
Me and the Holy Shroud.....	7
Chapter 2	
Extending the Borders of Science. ....	17
Chapter 3	
The Theory of Energy Burst. ....	25
Appendix to Chapter 3	
The Sperm and the Somatic Seed. ....	39
Chapter 4	
The Holy Shroud and Christian Belief. ....	45
Chapter 5	
The Folded Napkin Evidence.....	53
Chapter 6	
The Folded Napkin Significance. ....	67
Chapter 7	
The Science Begins.....	79
Chapter 8	
Secondo Pia and the First Photograph. ....	85
Chapter 9	
The Aftermath of the First Photograph. ....	95

TABLE OF CONTENTS

v

Chapter 10  
Another Science: Forensics. . . . . 105

Chapter 11  
The Science Reapplied. . . . . 115

Chapter 12  
The Quiescent Period: 1933-1978 . . . . . 127

Chapter 13  
The Shroud of Turin Research Project (STURP). . . . . 139

Chapter 14  
Carbon-14 and the Age of the Shroud. . . . . 153

Chapter 15  
Resolution of the C-14 Dating Anomaly. . . . . 165

Chapter 16  
The Shroud and Forgery. . . . . 173

Chapter 17  
The Shroud and Compromise. . . . . 193

Chapter 18  
From Adam to Christ. . . . . 213

Epilogue. . . . . 221

## FOREWORD

This profoundly insightful and empowering book on the Holy Shroud of Turin is the type of literature in form and substance that comes along just a few times in a generation. I'm so proud of Gary Chiang and the way in which he uses his scientific and theological gifts of understanding to remind us that God is the very essence of life.

As a Christian, scientist, researcher and teacher, Dr. Chiang has been trained to follow the evidence until the truth is revealed. By nature, he is not contrarian, but rather soft spoken, intensely curious and devoutly open-minded regarding the contradictions between the facts of Science and the truths of Scripture.

It is true that deeply held religious and scientific beliefs can be divisive and intolerant when exploring a deeper understanding of the existence of God in our everyday lives. Humankind, with all our preconceived beliefs about science and theology, can be blinded when considering compelling truths that are hiding in plain sight.

By simply and powerfully revealing the Holy Shroud of Turin as a genuine artifact of the risen Jesus Christ, Dr. Chiang has established a new truth regarding an old belief. Most scholars accept the year 1350 AD as the beginning of the documented history of the Shroud of Turin. During the seven centuries since then, more than 1,200 books have been written by hundreds of authors from dozens of countries in every corner of the world. Yet, the vast majority of this research and writing has been considered from either a scientific or a theological point of view. Historically, scholars and scientists have often attacked any possibility that the Shroud is in fact authentic, and most of these attacks have been based on preconceived beliefs that are both unscientific and theologically doubtful.

In this book, Gary has brilliantly extended the borders of science and sets the record straight for the maligned,

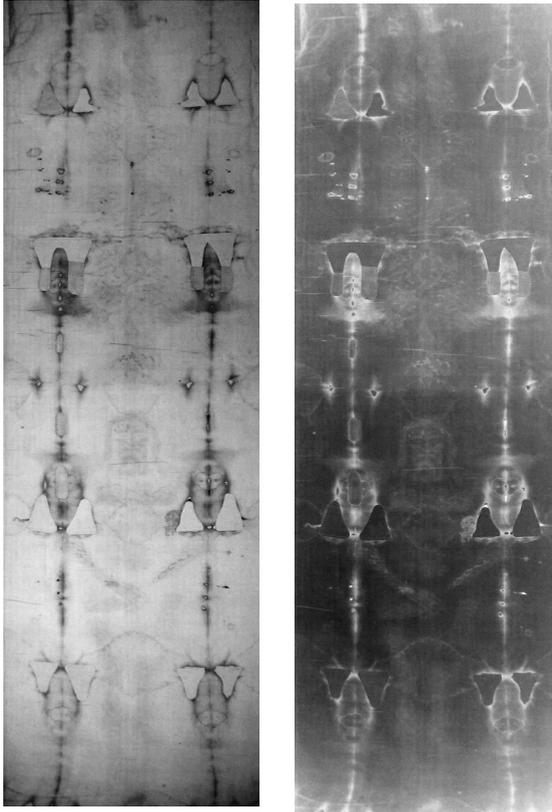
misunderstood and misconstrued truth of what can now be called compelling evidence of the existence of God supported by both Science and Theology.

Gary has been graced with the gift of science-based, theologically evident story telling. He brings to life that the existence of God is the only perspective in which the Holy Shroud of Turin makes absolute sense. His research concludes that Jesus Christ belongs in every facet of the physical world and that is where the risen Lord wants to be.

The Holy Shroud of Turin as a genuine artifact of the risen Christ is not only a big idea, but a scientifically grounded and theologically supported truth. As a global historical researcher, student of the science of complexity and a Christian, I can say without hesitation that I believe Gary's research and writing may usher in a new age of understanding. Let's call it the Age of Re-Enlightenment—a seminal time in history that could forever change the way in which we consider how humankind understands and believes the truth of the risen Jesus Christ and the importance of God's existence in every aspect of our lives.

Rob Faw

Entrepreneur, Author of *World's Best Value*, and Research Fellow in Science and Christianity



The Shroud of Turin is a long rectangular piece of linen with a series of marks arranged symmetrically along each side. The left photograph is a black and white picture of the entire cloth. In the right photograph, the image has been inverted using photo-editing software rendering the figure of a man on the cloth more visible. These pictures, taken by author, are of a life-size replica purchased from the Shroud of Turin Education and Research Association, Inc.

## Preface

“Only this much is certain: The Shroud of Turin is either the most awesome and instructive relic of Jesus Christ in existence – showing us in its dark simplicity how He appeared to men – or it is one of the most ingenious, most unbelievably clever, products of the human mind and hand on record. It is one or the other; there is no middle ground.”<sup>1</sup>

Taking bus #17 from Canterbury to Folkestone in the beautiful county of Kent in England you come across the amazingly picturesque village of Elham. Here, my wife Jennifer and I stopped to take in a walk leading from the village into the country, up a hedge-lined lane to the North Downs where the scenery is both breathtaking and serene. But before venturing away from the village, we were delighted to discover that the village church is left open for visitors, and we took the opportunity to explore its history.

Dating from 1180 AD, this church is an impressive stone-built structure that borders the east side of the village square. After over 800 years in existence, some of the pathways around the south side of the church have become edged by grassy knolls that are difficult to see over. This visual isolation encourages the hiker

---

1. John Walsh, *The Shroud: Is this the holiest of relics or the greatest of forgeries?* A Star Book, Published in 1979 by the Paperback Division of W.H. Allen & Co. Ltd, Great Britain, First published in 1964, p. ix of the Preface.

to direct their thoughts back into history when people would arrive, not by bus as we did, nor by cars parked in the adjacent village square, but by foot, on horses, or in horse-drawn carriages. This edifice seems far more spectacular than would be expected for a quaint, present-day Elham, and with the general decline in the importance of the church in today's society, this building appears resigned simply to remain as a tribute to the memory of years gone by. Little did I anticipate that our short visit into this shrine of yesteryear was to play a major role in helping me formulate my thoughts on Christianity's most famous relic, the Holy Shroud of Turin.

Like many of the splendid structures built by religious institutions in years gone by, the church of St. Mary the Virgin continues to serve in the community. Upon entering the structure, you are struck by the astonishing contrast between the solemn looking woodwork of the pews, pulpit, and the rafters, and the alternatively bright and lively display created by the children in the Church School corner. Situated near the entrance is an impressive wooden chest carved out of the solid trunk of a yew tree. It is about 36 inches long, eighteen inches high, and eighteen inches wide, with a lid held shut by three iron straps secured in place by a single lock. A small slot in which to place offerings has been cut into the lid. The chest dates to around 1200 AD, and was first used to collect money for the crusades. One wonders if any of those Crusaders who took up the challenge to reclaim the Holy Land from the Heathen, ever saw the Cloth of Edessa, now known to be the Shroud of Turin. Or were they participants in probably one of Christianity's most inglorious moments, the 1204 sack of Constantinople by the Crusaders of the Fourth Crusade. And if yes, did they participate in looting the city of its precious relics or were they part of the small group of Crusaders who secretly saved the Shroud from the treasure hunters?

As academics and admitted book worms, Jennifer and I delayed our hike to browse through the used book corner, the

proceeds of which are put towards church upkeep. There Jennifer discovered a small blue paperback printed in 1979, but first published in 1963, simply entitled, "The Shroud." She knew it would interest me. And so it did.

Although I had been making presentations on the Shroud of Turin for a few years, own a life-sized replica I purchased from the Shroud of Turin Education and Research Association, Inc., and had read numerous books on the Shroud written by British and American authors, this earlier book by John Walsh had escaped my attention. Yet here it was, 2012, in a remote area of southeast England in the most unlikely of places—a used book corner in an ancient church—when the book came into my possession. And unlike the more recent literature I have consulted, Walsh wrote before the historical facts were uncovered by the historian, Ian Wilson, and before the scientific facts were collected by the American contingent of scientists in 1978. Walsh provided for me a picture of the Shroud as it was prior to the English world taking notice of this relic. Grounding much of his work on interviews in Europe with people directly associated with the Shroud, he described the incredible work done on the Shroud by people such as Yves DeLage (1854-1920), Paul Vignon (1865-1943), and Pierre Barbet (1884-1961), before the investigation by the Americans was to mask these pioneering studies.

Walsh's book also convinced me that the world could benefit from one more book on the Shroud. Not an all-encompassing fact-laden book, such as the 330 page *The Blood and the Shroud*, by Ian Wilson,<sup>2</sup> which provides more than enough data to convince any non-bias skeptic. Nor the equally massive, *The Sign*, by Thomas de Wesselow,<sup>3</sup> who believes the Shroud is authentic but has

2. Ian Wilson, "The Blood and the Shroud: the passionate controversy still enflaming the world's most famous carbon-dating test," 1998, Weidenfeld & Nicolson, London, UK.

3. Thomas de Wesselow, "The Sign: the Shroud of Turin and the Secret of the Resurrection," 2012, Dutton, the Penguin Group (U.S.A.) Inc., New York.

imagined a scenario that denies the resurrection and the divinity of Christ. What was needed is a book that views our present knowledge of the Shroud in light of the truth revealed to us from Scripture. The Holy Shroud needs to be described by a Christian who also has a more-than-average grasp of the nature and limits of both science and theology.

Many Shroud presenters tend to offer the scientific data and let the audience make up their own minds. This approach is commendable for it is based only on presenting the facts. There is no attempt to make an audience uncomfortable by insisting the Shroud is authentic. But unfortunately, this approach only provides one side of the story for it leaves out any impact our knowledge of the Shroud could have on Christian thought. In this book, I hope to rectify this shortfall by providing a fuller story of the Holy Shroud. With this goal in mind, I relate the reality of the Shroud to the Christian narrative of Creation, Fall, Redemption and Restoration; I describe its scientific history starting with the first photograph obtained in 1898; and I examine the various ways in which different individuals have dealt with this mysterious object. When viewed from both a scientific and biblical perspective, the Holy Shroud offers intriguing new insights into Christianity and the natural world, as well as our relationship to the divine. The Holy Shroud is far more than a cloth with a photographic imprint.

John Walsh rightfully stated that, "there is no middle ground." Once you start down the road to investigate this strange and mysterious artifact of the resurrection, you will quickly come upon a fork in the road. Is it authentic, or is it a fake? Christians may fully accept the divinity of Jesus Christ and His resurrection, but how do they deal with the Holy Shroud, a religious relic that might be a forgery created in the Middle Ages. Is it physical evidence for the existence of the supernatural, evidence that Christians do not need in order to believe, or should it be tossed aside as folklore, a curiosity not worthy of serious consideration?

By writing this book, I am setting the record straight on a relic that has been maligned, misunderstood and misconstrued on several levels. This work not only alleviates concerns that a Christian may have about the Shroud, it also makes known the amazing connections between this cloth, touched by our Lord and Saviour, and the truth revealed in Scripture. When I first approached the Shroud in this fashion, I was unexpectedly surprised at the wealth of information it provided. Once you pass the fork in the road and consider that the Holy Shroud is authentic, its impact upon Christian theology is akin to finding a whole new Gospel. It becomes far more than a simple object for veneration. It opens up a new vista to view the human story in relation to our place in eternity. And as an added bonus, it even impacts our understanding of the physical nature of the resurrection.

Be prepared! As this book leads you into territory that no other Shroud enthusiast has taken before, it has the potential to stupify the unbeliever, and to astonish the believer. There is no middle ground.





Photographs of a workshop style presentation on the Shroud of Turin given by the author (on the right in the lower photo) to the local community. With the incredible amount of misinformation being promoted from a wide variety of resources, these workshops help participants to discern the facts from the fiction.

## Chapter 1

# Me and the Holy Shroud

My first encounter with the Holy Shroud of Turin came about in the early 1990's, when I was already well into my adult years. So the mysterious origins of this cloth, and the image of its haunting face had no impact on me during my formative years. Yet the milieu in which I was raised has played a very important role in the way I view this object today, an object that has been described as the world's most important religious relic – something that is both mysterious and very controversial.

By birth, I am the son of a very unlikely couple. My mother (nee: Finlayson) was the youngest daughter of an itinerant Baptist minister with Scottish roots. She was born in the small town of Orillia north of Toronto, and while still a young teen, she moved to live with her oldest sister in Toronto after her father died. My father belonged to the first generation of Canadians born to Chinese parents who immigrated to the west coast of Canada from Canton, China. My father was the third oldest of nine children. All were born in Vancouver, and the family moved to Toronto during WWII.

My parents never talked about their courtship or wedding, but they did fall deeply in love while working in the same produce store in Toronto. Dad was 26 years old with dreams of running his own market garden, and Mum was just 16. Despite

the abhorrence, at that time, to interracial marriages, their love overcame all obstacles and they chose to wed. Mum joined him on the market garden he started on rented land, and along with my uncle, their farm became known as The Chiang Brothers.

My mother was raised Baptist, and although my Chinese grandparents were from a culture that paid homage to their ancestors, their children were not encouraged to continue in that tradition. As my dad said, "Why stay in a religion where you are afraid of evil spirits, ghosts and bad luck, when Christianity frees you from all that?" So as a family, we were Christian.

Interesting how the roles of parenthood get divided up as families mature. For the most part, my dad was responsible for taking us to church and Sunday School, giving my mother some much needed time alone from the kids, but my mother read to us the Bible. I recall her bedtime Bible readings and prayers with us kids, and being fascinated about her account of meeting Jesus when she 'died' on the operating table while having her tonsils removed when she was about eight years of age. I also recall her describing to us her experience with an Ouija board which made her forbid any form of psychic paraphernalia in our house. I may not have had a solid theological understanding of Christianity, but I never doubted the reality of Adam and Eve, original sin, or the existence of the spiritual world.

My parents did not have the opportunity to continue in school, and neither received a highschool education. They were also considered pioneers because the land they eventually purchased for a new market garden had to be cleared of bush and drained. Yet it was by no accident that I was to continue in school to become a university professor and author. My father was not overbearing nor authoritative. He was really a very good friend, and gently encouraged me to go as far in school as possible because he knew the value of a good education. Through his efforts and generosity, his youngest siblings were able to complete their education. Uncle Peter became an aeronautics

engineer, Uncle Donald a dentist and Uncle Bucky a medical doctor. So the course of my life was set out before me by my uncles who obtained their success through education. Despite neither of my parents reaching highschool, I was to be educated to hopefully become a dentist or doctor—even a lawyer would suffice.

Upon entering university, a professional school was my focus. However, my talents were better suited to carry out basic scientific research, and I obtained a doctorate in invertebrate neurobiology. After several years of biological research in which I explored the nervous systems of crustaceans and insects, I accepted a professorship at Redeemer University College. I was well prepared for such a position in which I was asked to teach biology from a Christian perspective. I had a deep Christian faith instilled in me since childhood, and I had worked in science at its highest level, publishing papers in world class scientific journals such as *Science* and *Brain Research*. These experiences were also instrumental in creating an attitude of openness towards the Shroud.

My initial exposure to the Shroud was during an international faith and science conference hosted by the Pascal Centre at Redeemer University College in 1992. One of the many participants, Thaddeus Trenn (1937-2013), presented a paper in which he proposed that science cannot cope with something like the Shroud.<sup>4</sup> As Trenn argued, science attempts to develop naturalistic explanations for reality whereas the image on the Holy Shroud could have been created by a 'singleton event' associated with the resurrection. This explanation steps outside the natural world into the supernatural, and as one scientist wrote about the Shroud, "If a supernatural explanation is to be

---

4. Thaddeus UJ. Trenn, Why science cannot cope with the Shroud of Turin. Text of lecture presented to The Pascal Centre, 6 April 1992. For private distribution only.

proposed, it seems pointless to make any scientific measurements on the shroud at all.”<sup>5</sup>

Of the papers presented at this conference, the Shroud intrigued me the most. Other presenters described noteworthy papers on the relationship between faith and science in philosophical terms, whereas Trenn’s paper described a real, tangible object that could be touched and studied using scientific techniques. It peaked my interest for it appealed to my scientific psyche.

In 1992, the Shroud world was still recovering from the 1988 news that the C-14 dating showed the Shroud to be a medieval forgery. Just being introduced to the Shroud I, of course, knew nothing of this incident when it occurred. But when I read the literature about this anomaly – the only scientific fact which went against the authenticity of the Shroud – the reports were oddly unscientific, and their conclusions did not sit well with me. In these C-14 dating reports, the results were described as “conclusive evidence” and that there was a “95% confidence for the linen” to have been created between 1260-1390 AD.<sup>6</sup> Coupled with Prof. Edward Hall’s glib explanation for the image – “someone just got a bit of linen, faked it up, and flogged it”<sup>7</sup> – I was not impressed either with the lack of professional candour nor the lack of respect shown to the scientists who had gathered mountains of scientific evidence that favoured the Shroud’s authenticity.

My own scientific experience cautioned me against accepting any result considered to be “conclusive” since I had witnessed, on more than one occasion, that conclusive facts supporting one explanation could be used to support an entirely different point of view. This is simply the way science works. And being raised

5. R.E.M. Hedges, Reply to “Shroud irradiated with neutrons?” *Nature*, 337, 16 February 1989, p. 594.

6. Damon *et al.*, *Nature* 337: 611-615, 1989

7. As reported by Michael Sheridan and Phil Reeves in, “Turin Shroud shown to be a fake.” *The Independent*, London, 14 October 1988

as a Christian fully appreciative of the supernatural, I had no difficulty entertaining the possibility that this image was, in fact, formed at the moment the body of Christ was resurrected from the dead. The Holy Shroud of Turin with its possible supernatural origin was not to be ignored. It provided the one piece of physical evidence in this modern world that God exists, and it should be given due respect as a *bone fide* scientific area of study. For me, excluding this object from science because the results may support a conclusion you do not wish to believe seemed somewhat shortsighted and narrow minded.

I believe Trenn was quite right in that some scientists cannot cope with the Shroud if it is considered to have been created by a physical force generated by a supernatural event. The possibility that the best explanation for its existence is a supernatural origin goes against our understanding of what science can do, and what reality is. At the end of his paper, Trenn argued that it is only by faith that we accept Christ, but with the Shroud, there is a 'deeper reality' hidden from our eyes.<sup>8</sup>

Trenn was attempting to provide an explanation why scientists would not consider the Shroud worthy of investigation. Unfortunately, the C-14 dating results of 1988 essentially put an abrupt end to all scientific studies on the Shroud. But from my experience I realized that it was not Science that could not cope with the Shroud, but the scientists who approached the topic with a particular set of assumptions. One foundational assumption concerns the nature of science, and what science can do. If science is confined only to the natural world, which tends to be the prevailing ideology, then it could be rightfully surmised that science cannot cope with the Shroud. But science has always extended itself beyond what is known of the natural world in order to explore the unknown. Science is a way to go beyond what we *do* know to make known what we *don't* know.

---

8. Trenn, *ibid* p. 27.

We may lack the technology to explain the appearance of the image on the Holy Shroud of Turin, and at this point, a split second burst of energy is the most plausible natural explanation. Needless-to-say, this explanation is directly linked to the resurrection which can only be described as a miracle. But rather than ignoring the Shroud, could this miracle be a natural outcome of a physical process we have yet to uncover? Just because all the scientific facts support the Shroud as the burial cloth of Christ does not prevent scientists from exploring how a resurrection event may have created the image. What is limiting science, is not science, but the preconceived beliefs of the scientists.

In addition to being well-versed in Science and Christianity as I approached the Shroud, I was also able to more fully explore the relationship between faith and science as, at the same time, I became aware of the works of Dr. Arthur C. Custance (1910-1985). Custance was an accomplished scientist with the Defence Board of Canada, and was an expert in a number of different academic disciplines including that of ancient languages. He bequeathed his personal library of over 4000 books to Redeemer University College, and these books arrived the year I started my tenure at this college. I was to discover that this British born Canadian citizen encouraged Christians to take equally seriously the facts of science, and the truths of Scripture. Custance lamented that the average scientist knows as little about theology as the average theologian knows about science. And this situation can be witnessed in the controversies surrounding the Shroud today.

Custance never did write anything on the Shroud, but his observation about the ignorance of scientists and theologians is as true now as it was decades ago. With knowledge increasing exponentially in all academic disciplines, this situation has even gotten worse. Students and researchers are so busy striving to keep up with new discoveries within their own area of study that this leaves little time nor opportunity to become familiar with other material. Scientists qualified to measure the Shroud's

carbon-14 content, or to identify pollen grains from the fabric, or to determine the nature of the blood on the cloth, are experts in their area of speciality, but few are fully aware of what God had to do to redeem his creation unto Himself. In fact, many scientists who have studied the Shroud confessed to having little or no religious affiliation or training.

Theologians who are unable to keep up with the latest scientific discoveries must rely on the opinions of scientists to come to some understanding of the physical world. Many are unaware that the assumptions of a scientist have as much to do with explaining the facts as do the facts themselves. Assuming, for instance, that evolution is a well-established scientific fact, many theologians have reinterpreted various passages of Scripture as metaphors or allegories containing truth, but not actually being historically true.

Whereas some scientists knowing the subjective nature of evolution have simply decided to leave thoughts of evolution at the church door, the non-scientist is tempted to reinterpret Scripture to fit the theory of evolution, and to even preach this from the pulpit. Some attempts to do so have not been well received by many of the people in the pews who still wish to adhere to a historical understanding of the Bible where Adam and Eve are considered real people, who lived in a real time, who ate a real fruit from a real tree of knowledge.<sup>9</sup> Non-scientists tend to

---

9. To accept the theory of evolution as a verifiable scientific fact the historicity of the Genesis creation story must be reinterpreted such that Adam and Eve are not considered to be real persons. For examples of this viewpoint, see the articles by Daniel C. Harlow, "After Adam: Reading Genesis in an age of evolutionary science," *Perspectives on Science and Christian Faith* 62: 179-95, 2010, and John R. Schneider, "Recent genetic science and Christian theology on human origins: an 'Aesthetic Supralapsarianism.'" *Perspectives on Science and Christian Faith* 62: 196-212, 2010. Although many Christian academics accept the symbolism of Adam and Eve, the wider Christian community is not as willing, and these articles generated considerable unrest. For example, see the report by David Murray, "Calvin College giving 'misinformation' about professor's exit over Adam and Eve views, colleague says," *Grand Rapid News*, August 19, 2011.

take scientific theories derived from scientific facts as being absolute truths and reinterpret Scripture to fit these theories<sup>10</sup>; an experienced and wise scientist tends to remain less certain.

Custance being both a theologian and a scientist has helped Christians to break through the apparent barrier separating faith and science by recognizing that an established fact in science is as sacred as a revealed truth from Scripture. The only stipulation is that the revealed truth of Scripture needs to be considered in light of what the original language is telling us, not simply what we want the passage to mean, and the established fact of science needs to be just that – an established fact, not an interpretation of a fact. When this approach is taken, the links between Science and Scripture are truly fascinating.<sup>11</sup>

I consider myself privileged because my experience includes both science and faith. My faith is founded on a Christianity which is far more than a religion; it is a reality that recognizes the supernatural and acknowledges the existence of God who came to live in his creation in the form of Jesus the Christ. In science, I am an experienced biological researcher whose work has been disseminated worldwide. Coupled with being encouraged by the works of Custance to accept biblical truths as reality, I am able to link Christianity and Science without the apologetics that tend to reduce the truth in Scripture to metaphors or psychosomatic experiences, or make scientific explanations theologically meaningless. So when the Shroud was made known to me it did not challenge me, but excited me. It provides an interesting physical phenomenon into which I can sink both my religious and scientific teeth.

---

10. Theistic evolution is an origin theory which fully accepts the evolution worldview, but contends that God used evolution to create. This theory has been well received by Christian academics but not Reformed or Evangelical Christians in general. To make it more acceptable, some academics refer to God-directed evolution as evolutionary creationism.

11. The works of A.C. Custance can be read on line at the Arthur C. Custance Centre for Science and Christianity found at [www.custance.org](http://www.custance.org).

In my studies of the Holy Shroud, all my scientific and theological experiences over the last twenty years have come together to form an all encompassing view of reality. This view does not depend on the Shroud being authentic, but studying this cloth has helped to add to the spokes in the wheel reinforcing my belief in Christianity. But people, such as myself, who favour the authenticity of the Holy Shroud need to be mindful of the fact that many intelligent and sincere people reject it as a forgery, even after full knowledge of the scientific evidence. Our attitude towards the Holy Shroud has as much to do with our preconceived beliefs as it does with our ability to think logically or scientifically about the established, reproducible facts. We carry these beliefs into every aspect of our lives, including religious and scientific endeavours.<sup>12</sup>

As this book will demonstrate, not everyone is able to view the Shroud as I have. I believe the Holy Shroud of Turin is authentic, not necessarily because science has yet to prove beyond a reasonable doubt that it is a fake, nor because I believe Jesus rose from the dead. It resonates with my own preconceived beliefs instilled in me from childhood, and I “feel” quite comfortable accepting it as a genuine artifact of the resurrection. Others do not, and their perceptions have been formed by their experiences which may have no bearing on the facts associated with the Shroud. They see science differently to the way I see it; they interpret Scripture differently to the way I interpret it; they consider the Shroud in a very different light to what I do.

In this opening chapter, I have provided some information from my past to help the reader appreciate why I view the Holy Shroud as I do. Although the religious and scientific backgrounds for many of the personalities described in this book are not fully known, their opinions need to be considered with the knowledge

---

12. See R. Gary Chiang, “Rescuing science from preconceived beliefs: religious beliefs at the interface of Science and Faith”. Second Edition, Doorway Publications, Ancaster, ON, Canada, 2011.

that personal beliefs play a large role in what we reckon to be the truth.

No person, including the scientist, is immune to having strongly held beliefs which will affect the way they view all of reality. For many people, science is an enterprise that should be confined to the natural world, but this limitation is arbitrary. It is possible to expand the importance of science well into the supernatural when we allow it to do so. The Apostle Paul suddenly realized that his own instilled beliefs in Judaism prevented him from seeing Jesus as the Christ (Acts 9). When we recognize how our own preconceived beliefs can camouflage the truth we, too, are apt to have a life-changing experience.



## Chapter 2

### Extending the Borders of Science

Long before turning my attention to the mysterious Holy Shroud of Turin, I was often called upon to present to church and Christian school audiences the scientific evidence for and against the theory of evolution. My approach to the topic of origins has always been to educate my listeners, who are mainly creationists, about evolution, and not to promote any one particular view of creationism. I have heard other speakers on creationism attack the theory of evolution head-on, and using this approach, they discourage any serious consideration of evolution. But the theory of evolution, whether scientifically verifiable or not, holds the monopoly in our educational systems. Simply labelling evolution an evil which does not agree with the Creation story in Genesis will not prepare students to engage in a meaningful scientific discussion on origins. It not only fails to show how the scientific facts can be interpreted to fit into an evolutionary worldview, it misses out on describing the wealth of scientific facts that actually support biblical creationism. And by doing so, this approach also fosters the notion that Science is limited to the natural world and has little to contribute to religious thought.

After evaluating the scientific facts associated with the Holy Shroud of Turin, it is possible to get the same impression—Science is of little value when it comes to

understanding the truth conveyed to us in Scripture, and vice versa. Science and Scripture seem to be viewed as two distinct sources of truth. Many Christian academics divide these truths into God's Two Books, the Bible and the Book of Nature. Since Science investigates the facts of the natural world, a truth discovered by scientific study is perceived to have a more solidly based foundation than a truth revealed by Scripture. Science and Scripture are often considered to be two distinct areas of reality, and neither should influence the other.

In 1978, a group of American scientists were allowed direct access to the Shroud, and this group (known as The Shroud of Turin Research Project or STURP), found no scientific evidence to show that this cloth is a fake. They actually found new scientific evidence that added to its authenticity. Yet they disappointed many Shroud enthusiasts because they would not declare the Shroud authentic. But in fairness to the scientists of STURP, had they concluded that the Shroud is authentic, they could be seen as overstating what their scientific results were telling them. Even John Jackson, the founder of STURP and a firm believer that Jesus is the Messiah, stated that Science could not prove the image to be that of the Christ because there is no scientific test for Christ. This may be an intuitively logical statement, yet it may not be entirely true. The Shroud has a unique position at the interface of Science and Christianity for this object, itself, is solid scientific evidence that the historic Jesus existed, and the inability to find a naturalistic explanation for the image, being both a negative and having three dimensional properties, is strong scientific evidence that the image was created by a physical event associated with the resurrection.

If we allow the information in the Bible to do so, the Bible provides more than subjective truth that relates to our relationship with the divine. It also provides historical evidence that this Jesus was the Messiah, for the wounds on the image match exactly those that were inflicted on this one man. What the

Bible describes should not be tossed aside as religious myth, especially when it matches in every detail possible the physical evidence. Scientists might argue that once you bring the Bible into the equation, you are stepping outside of the natural world and are no longer dealing with Science.<sup>13</sup> Yet this, in itself, is a misconception that needs to be corrected. Information from both Science and Scripture should not be considered mutually exclusive even before any attempt is made to compare them.

The scientific and historical proof that the Shroud is real was never admitted to by the STURP scientists who were trying to keep the appearance of being totally rational and logical. By doing so, they were limiting what science could tell them. After STURP dissolved, the world was left anticipating that Science would one day prove the Shroud a fake, and was expected to do so with the C-14 dating. It became instilled in the minds of those interested in the Shroud that the C-14 dating was a necessity, the Holy Grail, the pinnacle of scientific techniques that would verify if the Shroud were real or not. In other words, Science was positioned as antithetical to Scripture because it alone could discover the necessary facts that would counter the claims made by this cloth, claims that were supported by Scripture. Any physical fact uncovered by scientific means that declared the Shroud a fake would overwhelm any fact, scientific or biblical, that supported the Shroud's claim to authenticity.

In the C-14 dating, the dividing line became very clear between those who accepted the Shroud as authentic and those who considered it a fake. If the scientific test showed that the Shroud was significantly less than 2000 years old, by discovering far more C-14 on the cloth than would be expected, then despite any other scientific evidence, the Shroud could not have covered

---

13. As R.E.M. Hedges wrote, "If a supernatural explanation [for the excess C-14 on the Shroud] is to be proposed, it seems pointless to make any scientific measurement on the Shroud at all." From, "Shroud irradiated with neutrons?" *Nature*, 337, 16 February 1989, p. 594.

the body of Jesus. When the 1988 C-14 dating deemed the Shroud too young to have covered Christ, this conclusion was accepted without question as being the trump card that rendered all other evidence moot. Therefore, the Shroud was considered a fake, and by association, the church over the centuries has supported a lie. Science had triumphed over religion. Or did it?

STURP concluded that science cannot tell us at this time if the Shroud is authentic. But this limitation is not due to having no test for Jesus, as is commonly claimed. It results from what people perceive what Science can or cannot do, regardless of their belief in Scripture.

In practical terms, the scientific method is a means to test if an explanation is true, or whether a fact is reproducible, by determining if it is false. Thus, scientific tests are set up to ascertain if a statement (the null hypothesis) is false. But proving the statement false does not mean that an alternative is true. In another way of stating this, science can only definitively *disprove* a point, it can never prove a point to be true. When STURP claimed that it could not report if the Shroud is authentic, it was stating what they knew to be true even before they boarded the plane to go to Turin. Science alone can never state with any certainty that the cloth is authentic; science can only state if the cloth is a hoax. And that is exactly what many of the scientists in the STURP team were hoping to do. As one member of STURP, Barrie Schwartz, has repeatedly said, he expected to examine the Shroud, take pictures of the brush marks, then go home.<sup>14</sup>

As any particular theory continues to be tested, scientists eventually rack up a whole series of tests which taken together brings the scientific community to a comfortable feeling about the truth of an explanation. With the C-14 dating anomaly finally resolved (as described in Chapter 15), every single scientific test

---

14. Personal testimony by Barrie Schwartz found at <https://www.youtube.com/watch?v=4G4sj8hUVaY>  
Barrie Schwartz was the official documenting photographer for STURP.

ever done on the Shroud agrees with it being authentic. Unfortunately, being the Shroud on which the image of Christ was imprinted at the resurrection, is not a comfortable conclusion for many scientists. It takes Science out of the realm of the natural world. It is a far more comfortable position to state that Science, at this time, cannot say that the Shroud is the cloth that covered Christ. As STURP concluded, it would be necessary to carry out more tests. They should have added, "...until Science finds the one test to prove it is a fake."

STURP chose to limit all that their science could tell them by restricting their interpretation of their data to the natural world and the scientific methods used to discover the physical facts. By restricting science to the natural realm, and by overlooking the Bible as a source of historical truth, they failed to see that bringing the scientific *and* biblical data together shows, beyond a reasonable doubt, that the image on this cloth is that of Jesus who rose from the dead. Thus the value of science is greatly enhanced when science is no longer confined to explanations in the natural world; the scientific method can also extend into the supernatural, as is evident with the scientific study of the mysterious image on the Shroud.

When Science is restricted to explanations that exclude the biblical accounts, Science becomes an adversary of the Bible, not its ally. Science will never be able to say that the image on the Shroud was created by energy associated with the resurrection of the Christ because that is the biblical explanation scientists are trying to disprove. But what if the scientific facts of the Shroud were to be integrated equally with the truth revealed by Scripture? We know that the Bible describes how Jesus was scourged and crucified. We know that the physical aspects of the Shroud, as revealed by its scientific study, confirm in every way possible the testimony of Scripture. These sources of truth could be synergistic rather than antagonistic. That is exactly what the French surgeon, Pierre Barbet, so clearly demonstrated when he

wrote *A Doctor At Calvary*.<sup>15</sup> The knowledge of a surgeon combined with the Gospel accounts of the crucifixion firmly establishes a clear picture of the deep sufferings of Christ.

Throughout this book, I have endeavoured to intermix the scientific facts of the Shroud with people and events surrounding these facts. By adding a human factor to describing the bare facts, the reader is encouraged to consider that a scientific theory is not always accepted because it is the one that best explains the facts. It is the one, regardless of the evidence, with which a person feels most comfortable. A Roman Catholic can accept the Shroud as being real without any concern for proving its authenticity; an atheist, unwilling to consider the consequences of God being real, must find reasons to reject it.

The list of scientific facts supporting the authenticity of the Shroud is astounding. But long before any technology was applied to the study of this relic, it already bore the marks of being authentic. It is an image showing no signs of being painted. There are no brush marks; the medium creating the image does not seep into the cloth as would be expected with paint; the image lacks the contrast found in any other painting; and the blood is real human blood quite distinct from whatever made the image. And if we were to concede that it is a painting created by a clever medieval artist, as many skeptics claim, why would such an artist stop at creating just one? There is only one Shroud because this image cannot be recreated on any other cloth.<sup>16</sup>

---

15. Pierre Barbet, "A doctor at Calvary," P.J. Kenedy & Sons: New York, USA, 1953.

16. It should be noted that the image of the Shroud is often compared to the painting that miraculously appeared on the cloak of Juan Diego in Mexico in December 1531. This painting is known as Our Lady of Guadalupe, and is supposed to depict the Virgin Mary. Unlike the image on the Shroud, Our Lady of Guadalupe is, in fact, a painting, not a photograph. The authenticity of the cloak, which is displayed in the Basilica of Our Lady of Guadalupe in Mexico City, cannot be verified by the image on the cloak alone since this image can be reproduced using technology that was available at that time. Whether any artist in Mexico had the talent to create this fabulous painting is another question,

With the advent of modern science, we can confirm that the image was not created by human hands, something known ever since this cloth first appeared. The image is a photographic negative with 3 dimensional information. To continue to believe it to be a painting, one must believe that a medieval artist could paint a negative using a technique by which he coated the very surface of the fibres of the cloth so that no brush marks or paint are detectable. This is an impossibility. But this impossibility for some skeptics is far more comfortable to believe in than that of a man named Jesus who rose from the dead. For these people, the overwhelming scientific support for the biblical explanation is excluded *a priori* from any serious consideration since they are limiting Science to natural explanations.

My worldview accepts Christianity. I was raised to believe that the Bible is true. It is God's personal letter to us; he tells us the who, what, where and why of our existence, and through the Bible, he provides comfort and hope. In my years of academic and scientific training, I have been consistently taught by professors and pastors alike to separate my spiritual or faith journey from my everyday experiences. When there appears to be disharmony between the Scripture and what is taught about this natural world, the student is encouraged to reject the fundamental interpretation of the Bible, and to place their trust in what makes sense to us in this natural world. But I have been unteachable in this regard. I have found it to be far more enlightening, and even liberating, to alter an explanation of the scientific facts to fit Scripture than to alter the Scripture to fit explanations of the scientific facts. By faith I believe the Scriptures are true; by science, I believe the Shroud is authentic.

For me, there is no conflict between Science and Scripture, and the Shroud does not represent an enigma. It may be mysterious, but it also provides a glorious opportunity to venture into the reality of the supernatural, and to discover our place in eternity.

---

which has intrigued those who have studied this famous artwork.

Extending the borders of Science to allow for the consideration of biblical truths helps to maintain a healthy interaction between Science and Scripture. The benefit of doing so becomes strikingly clear when we consider why a burst of energy would have been emitted by the body of Christ at the resurrection.



## Chapter 3

### The Theory of Energy Burst

Insights into various aspects of the Shroud have come from many different people with unique skills and talents. Not everyone was a scientist, historian, or even a Christian. As described in later chapters, Secondo Pia was a lawyer and politician who became an accomplished amateur photographer; Paul Vignon was a mountaineer, researcher and an artist who displayed his works in a Paris art gallery; Pierre Barbet was a surgeon and anatomy professor with battlefield experience that taught him how to recognize blood on a cloth; John Jackson was a theoretical physicist, and through his efforts STURP was formed; Barrie Schwartz was raised in Judaism which denies the divinity of Christ, yet he founded the most extensive website for legitimate information on the Shroud; Sue Benford was a registered nurse, health care researcher, and an advocate of New Age spiritualism who, along with her husband and ex-priest, Joseph Marino, convinced Shroud enthusiasts to seriously consider the repair-patch theory to explain the C-14 dating anomaly.

Even with all these wonderful people with their unique skills and amazing insights, there is one ingredient that has not been put into the mix—Christian theology with its concepts of Creation, Fall, Redemption and Restoration. Christianity believes

that Jesus went to the cross to redeem all of Creation to Himself, but other than Pierre Barbet who used the image on the Shroud to describe the sufferings of Christ from a medical perspective,<sup>17</sup> there has been little if anything written to relate Christian theology to the existence of the image on the Shroud. On the other hand, naturalistic explanations do abound.

*Naturalistic explanations for the creation of the image:*

Andrew Silverman, a non-Christian and a New Age proponent, believes that a human being called Jesus, who taught love and compassion, reached such a high state of nirvana<sup>18</sup> during his lifetime that he could will himself back to life after he had died. Silverman suggests that the resurrection energy burst was created when the pure consciousness of Jesus re-entered his lifeless body. Because pure consciousness exists at a higher energy state than physical matter, his "re-entry" discharged this excess energy which imprinted the photographic negative onto the cloth. In this scenario, Jesus' ability to transform from one energy state into another released the energy which created the physical event that imprinted the image on the cloth.

Isabel Piczek, a Christian artist and particle physicist, also suggests that a transformation from one energy state into another created the image. Unlike the New Age theology of Silverman, she envisions the Shroud serving as an interface between the heavenly and earthly worlds. Her theory involves an understanding of particle physics that few people can appreciate. In layman's terms, she believes that the resurrection event created "the magic door opening through the Shroud into a startlingly

---

17. Pierre Barbet, *A Doctor at Calvary; the Passion of Our Lord Jesus Christ as described by a Surgeon*, translated by The Earl of Wicklow, P.J. Kennedy & Sons, New York, USA.1953.

18. From [www.vocabulary.com](http://www.vocabulary.com): Nirvana is a place of perfect peace and happiness, like heaven. In Hinduism and Buddhism, nirvana is the highest state that someone can attain, a state of enlightenment, meaning a person's individual desires and suffering go away.

different world.”<sup>19</sup> Some Shroud enthusiasts have embraced the basic concept of her theory,<sup>20</sup> but her appeal to two esoteric concepts renders her theory somewhat difficult to understand for the non-physicist. First, she describes a “Space-Time Singularity” associated with a type of “Big Bang” which has allowed something to come from nothing. Second, she suggests that the image was formed by “Information,” and not by the presence of the body in the tomb. The evidence for her theory is based on the appearance of the image on the Shroud. To explain various characteristics of this image, she believes that the image could have only been created if the cloth were perfectly flat; for this situation to have occurred, both the body and the cloth were suspended in a microcosm of no-gravity. On the other hand, John Jackson suggests that body was dematerializing as the image was being made, so that the image was created as the body fell through the cloth. This alternate interpretation of the facts could explain why the cloth appears to have been flattened rather than draped over the body.<sup>21</sup>

Other Christians have provided scenarios to explain how the image was created, but unlike Silverman and Piczek, they tend to overlook the reason why the body would have created an energy surge in the first place. Kevin Moran, an optical specialist and

---

19. See Isabel Piczek, *Image Formation*, in which she describes her theory that an event horizon postulated for Black Holes was created in the tomb. <http://shroud3d.com/findings/isabel-piczek-image-formation>. Accessed Nov 3, 2015.

20. Dr. Wayne Phillips, a medical doctor (allergist) from Florida, USA, has been providing Shroud presentations since 2010. Once a skeptic, he now concludes that the Shroud is authentic and near the end of his presentations he provides Piczek’s no-gravity scenario as a possible explanation for the creation of the image. See: [https://www.youtube.com/watch?v=14y\\_VIJ2ZbM](https://www.youtube.com/watch?v=14y_VIJ2ZbM)

21. John P. Jackson, "An Unconventional Hypothesis to Explain all Image Characteristics Found on the Shroud Image," in Berard, A., ed., 1991, "History, Science, Theology and the Shroud," *Symposium Proceedings*, St. Louis Missouri, June 22-23, 1991, The Man in the Shroud Committee of Amarillo, Texas: Amarillo TX, pp.325-344).

presumably a Christian (he does not disclose his religious affiliation), suggests that as the body was transformed from one medium to another, it left a recoil of particles radiating from the body. He describes this physical event in the terms of the ripples created when a pebble falls into a pool of water, but doesn't consider why the body created this ripple.<sup>22</sup> To create the image, A.H.J. Fleming from the Biophotonics Research Institute in Melbourne, Australia, has suggested a biophotonic mechanism in which ultraviolet light emitted from the chromosomes of the cells in the body were absorbed by the melanin in the linen of the Shroud.<sup>23</sup> Giulio Fanti, Associate Professor, Department of Mechanical Engineering, Padua University, Italy, has applied his knowledge of electrical engineering to suggest that the body produced a very strong electrical discharge, a corona discharge, that affected the fibres of the cloth.<sup>24</sup>

These theories have their own merits, but none fully explains all the physical aspects of the cloth. Furthermore, they continue to relate our understanding of the physical properties in the natural world to how the image was created on the cloth without considering the information Christian theology can provide. If no attempt is made to explain, from a Christian perspective, why the resurrection resulted in a discharge of energy, Christians maybe inadvertently overlooking a very important source of information that only a Christian can provide. Moreover, Christianity claims that the truth about the supernatural world can only be derived from Scripture, so it behoves Christians to go beyond the physical forces of nature to consider why the supernatural event of the

---

22. As recorded in a interview for the program, "Jesus and the Shroud of Turin." 47 minute mark. Accessed August 2015 at:

<https://www.youtube.com/watch?v=0BxmbIGQBx4>

23. A.H.J. Fleming, "Biophotonic hypothesis of the Turin Shroud," presentation at the St. Louis Shroud Conference, 10-Oct-2014.

See: <http://www.shroud.com/pdfs/st/flemingpaper.pdf>, accessed Nov. 2015.

24. Giulio Fanti and Pierandrea Malfi, "The Shroud of Turin: First Century after Christ!" CRC Press, Taylor and Francis Group, Boca Raton, FL, USA. 2016.

resurrection would result in an energy burst from the dead body of Christ. Since Christianity is supposed to hold the monopoly on *spiritual* truth, Christian theology ought to provide a logically convincing answer. And I believe it does.

### Christian Theology and the Creation of the Image

Over 2000 years ago, a child was conceived by an unwed mother who had never had sexual relations with a man. This child was born in a small obscure town called Bethlehem. His birth is said to have been accompanied by heavenly beings singing praises to God in the highest (Luke 2:9-14). We know little of his childhood years, but we know that he grew and became strong, and was filled with wisdom (Luke 2:40). Then in adulthood, he proclaimed that he and God are one (John 10:30) for which the Jews tried to kill him (John 10:33). He eventually did give up his life in the presence of the Jews, but he overcame death, leaving on his burial shroud a negative image of his dead body as it lay in the tomb.

This preceding paragraph, of course, is the gospel narrative reduced to its bare minimum, and it places the Shroud in direct contact with the dead body of Jesus. Assuming that the image on the Shroud was created as a consequence of a physical process in the natural world, then knowing the physical makeup of this body provides a possible key to understanding why the resurrection created a burst of energy that radiated unto the cloth. And to understand this body's physical makeup, we need to review its origin right from its conception in his mother's womb.

*The human body consists of two separate cell lines:*

According to Christian theology, the body of Jesus was free from the effects of original sin, and to be such, it had to be the result of a virgin birth. It therefore follows that the human sperm,

which is bypassed in a virgin birth, passes on the effects of original sin to the next generation whereas the ovum remains pure. But how could God ensure that the ovum of Mary was pure without having to impart a special dispensation of grace to make Mary, herself, pure or to make the ovum she produced pure? The biology of reproduction provides a plausible answer.

The human body is made up of trillions of tiny cells, which, in turn, arise from two distinct cell lines: the body cell line (or the somatic cells) which comprise over 99% of the trillion cells we have, and the germ cell line which make up a very small portion of the body. In adults, the germ cells reside in the reproductive organs, the ovaries or the testes, and are responsible for giving rise to the ovum or the sperm, the cells which are needed for sexual reproduction. As 8 to 9 year old grade three students in Canada are taught, the ovum in the female is fertilized by the sperm from the male to create a baby.

*Separation of the germ cell line from the somatic cell line:*

What is not mentioned in sex education, and in biology books in general, is the fact that neither the ovum nor the sperm arise directly from the somatic cell line that gives rise to the body and all of its parts. Like the rest of the body, the ovary and the testis are formed by cells of the somatic cell line, but these somatic cells are not able to undergo the process of meiosis to produce an ovum or sperm.<sup>25</sup> Instead, it is the germ cell line, which resides in the ovaries or testes (and are completely separate from the somatic cell line of the ovary or testis), which are the only cells that can undergo meiosis to produce the ovum or sperm.

---

25. Meiosis is the process whereby a cell divides to produce cells which have only one half the normal genetic complement. These cells with half the genetic complement are the ovum and the sperm, referred to as the gametes. In animals, the gametes represent the last cell stage in the cell line, and die off unless one gamete, the ovum, is fertilized by the other gamete, the sperm, to produce a single cell with a full genetic complement. This fertilized ovum is called the zygote.

This biological fact—the ovum or the sperm are products of the germ cell line and not the somatic cell line—explains why the genetic traits of the mother and father are passed down to their children without being influenced by what the mother or father may have experienced during their lifetime. An adult may have lost an arm or leg as a result of some accident or disease before they became sexually mature, but they would expect to produce a normal child with all the appropriate appendages. Or conversely, an adult may have developed a muscular physique due to training or life style, but that physique acquired during their lifetime is not necessarily inherited by their children. Any trait acquired during the life time of a parent is developed in the somatic cell line of the body, and these cells, being separate from the germ cell line, do not contribute to reproduction nor inheritance.

What is relevant to Christian theology is that the separation of the germ cell line from the somatic cell line is the biological mechanism which explains how biological death, a trait acquired by Adam and Eve when they ingested the forbidden fruit, did not enter the germ cell line housed within their reproductive organs. If the germ cell line became subject to biological death, as did the somatic cell line, it too would have died off and reproduction would not have been possible. Instead, the germ cell line does not die when the somatic cells of the body die. Some germ cells do die off, but the germ cell line passes onto the next generation through the fertilized ovum.

How is this done?

*The continuity of the germ plasm:*

In fertilization, when the sperm enters the ovum, these two products of the germ cell line are coming together to form a new germ cell, the fertilized ovum (also called the zygote). The zygote

then begins to create more germ cells by the process of mitosis,<sup>26</sup> thus continuing the germ cell line into the next generation. During the first few cell divisions of the fertilized ovum, some of the germ cells transform into somatic cells, and these somatic cells give rise to the new somatic cell line, which will give rise to the body. In this newly forming body, the germ cells that remained as germ cells end up either in the ovary to make more eggs even before the daughter is born, or in the testis to make sperm when the male reaches puberty. Since the germ cell line continues from one generation to the next, this process is referred to as the continuity of the germ plasm.<sup>27</sup> The germ cell line will only die out when no more fertile humans remain on this planet (or elsewhere).

In contrast to this continuity of the germ plasm, the somatic cell line only lives one generation dying out when the body dies. For God to form the same type of body that Adam had before Adam ingested the forbidden fruit, the Holy Spirit initiated development in the ovum of the Virgin Mary in order to bypass the human sperm. Thus the body of Christ, like that which Adam originally had, was biologically immortal. It could die, but it was not destined to die. In fact, without the effects of original sin,

---

26. In mitosis, a parent cell duplicates its genetic information, then it divides to create two new daughter cells. The parent no longer exists since from it came the two daughter cells. These daughter cells are exact copies of the parent.

27. Kenneth Walker (1959) on Weismann as quoted in A.C. Custance, *The Seed of the Woman*, 3<sup>rd</sup> Edition, 2014, Doorway Publications, Ancaster, ON, Canada. p. 17. "In the "theory of the continuity of the germ plasm" published in 1885, Weismann showed that at a very early period the fertilized ovum (which later becomes the embryo) separates into two parts, a somatic part and what Weismann called the propagative part. The somatic half grows into the body of the individual, while the propagative half forms only the germinal epithelium or reproductive glands. A clear and very early division is therefore made between the cells which are to form the body and those highly specialized cells which become the sex glands and eventually give rise to the next generation. A man's body is doomed to die, but in a way, his reproductive cells are immortal [...]."

Christ's somatic cells may not have experienced the process of biological decay which occurs when life leaves our bodies. Paul, in his sermon to the rulers of the synagogue in Antioch, made special note that Christ did not see decay.<sup>28</sup> In other words, without the effects of original sin in the somatic cells of his body, the lifeless body of Christ lying under the Shroud may not have decayed as our dead bodies would have done if we were under that Shroud.

The scientific literature associated with human fertilization, embryology and the continuity of the germ plasm is quite extensive and can be difficult to grasp without some degree of background knowledge. But the concepts themselves and how they apply to Christian theology are logical and straightforward. In summary:

1. There are two sets of cell lines in the human body, the germ cell line which makes reproduction possible by producing the ovum and the sperm, and the somatic cell line which arises from the germ cells to create the housing for the germ cells in the next generation.
2. When Adam and Eve contaminated their bodies with biological death by eating the forbidden fruit, this acquired characteristic only affected their somatic cells. Their germ cells remained immortal since this cell line was biologically separated from their somatic cell line. However, biological death is passed on to the next generation of somatic cells by way of the human sperm. (This process is described in more detail in the Appendix to Chapter 3)

---

28. Acts 13: 35,36 (NIV) So it is also stated elsewhere: "You will not let your holy one see decay." "Now when David had served God's purpose in his own generation, he fell asleep; he was buried with his ancestors and his body decayed. But the one whom God raised from the dead did not see decay.

3. Since Mary's ovum was immortal, having descended from the pure germ cells that were in Eve, by bypassing the human sperm, the Holy Spirit produced for Christ a sinless body free of biological death. Jesus, although god-in-the-flesh, was now physically the son of God even as Adam was called the son of God. His physical development was initiated by God, and He could die although he was not destined to die.

As can be derived from Christian theology, which is fully supported by the biological processes of sexual reproduction and embryology, the lifeless body of Christ wrapped by the Shroud was not quite like ours. It was sinless, potentially immortal, and was like Adam's body before Adam ate the forbidden fruit. Jesus was the Second Adam both spiritually and biologically (1 Cor. 15:45).<sup>29</sup>

*The physical nature of the sinless body:*

When Jesus entered this world as the Christ Child, the only supernatural process associated with his body was the act of fertilization. Everything else ran its course as if it were a body conceived in the normal way. As soon as the ovum in Mary started to produce more cells, a factor transmitted by the Holy Spirit caused the formation of a pure somatic cell line from the pure germ cell line to create the body of Christ. The Holy Spirit replaced the role of a human sperm, thus circumventing physical death initiated by original sin.

Assuming no miraculous intervention during development, then the growing body of Christ received all of its raw materials from his mother, and these came from the food she ate and the air she breathed. So although the body of Jesus was not subject to the effects of original sin, its building blocks were taken from the

---

29. For a full discussion of Jesus as the Second Adam, see A.C. Culance, *Two Men Called Adam*, 4<sup>th</sup> edition, 2010, Doorway Publications, Ancaster, ON, Canada.

natural world which is not in the same state as it was prior to the Fall.<sup>30</sup>

When the penalty for sin was satisfied by Christ willingly dying on the cross, it was now possible for God to allow the basic components of matter, which made up the flesh and bone of the body of Jesus, to return to the form they had prior to the Fall. They were redeemed. Of all the fundamental truths in Christian theology, this one truth might just be the greatest mystery of all – through the cross God won the right to reclaim his creation and to bring us, and it, back to him.

#### *Why the burst of energy?*

Prior to Adam's action that brought sin into the original creation, God could freely come and go from the supernatural to the natural, or from the eternal to the temporal, and he talked directly with Adam and Eve without fear of destroying his creation or of inadvertently killing them. After the Fall, when God, the Almighty, is said to visit his Creation, his physical presence posed a dangerous threat. Even Moses needed to be physically protected from God just to see God's back.<sup>31</sup> And although there is no report that any high priest who entered the Holy of Holies was slain by being in the presence of God, the priest needed to be properly attired or he would die (Ex. 28:35 and Ex. 28:43). Thus Adam and Eve not only brought death to themselves and their offspring, their disobedience resulted in a physical change to the natural world. In the scenario I am

---

30. That the actions of Adam and Eve affected all of creation, and not just the moral and physical state of humans is supported by the description of the land producing thorns and thistles (Gen. 3:18), and by Paul noting that the whole creation has been groaning (Rom. 8:22).

31. Exodus 33: 21 Then the Lord said, "There is a place near me where you may stand on a rock. 22 When my glory passes by, I will put you in a cleft in the rock and cover you with my hand until I have passed by. 23 Then I will remove my hand and you will see my back; but my face must not be seen."

suggesting, this change occurred at the level of the smallest particles of matter from which this world was originally formed.

When life returned to the body of Jesus, the basic components of matter in his physical body were immediately allowed to return to their state prior to the Fall. This transformation occurred at the level of the forces holding all of matter together, and much like the forces released by an atomic explosion, it resulted in a release of energy that radiated from the body in such a fashion that it created not only a photo-negative, but one having embedded in it three-dimensional information. And this energy came as a burst, for the body did not continue to shine. It was generated as the transformation occurred and it quickly dissipated. The energy release was momentary, but after the penalty for sin was paid, this change became permanent as the body not only became pure throughout, but was also transfigured into a heavenly state. It is even possible that the transformation occurred in a twinkling of an eye, a transformation that those alive in Christ should anticipate (1 Cor. 15:51-52).

*The effect of original sin on the physical state of the temporal world:*

There may be many ways to describe what happened to the Creation at the Fall, but one is particularly appealing to me. Before the Fall, the Creation was perfect and in this perfect state, God could readily step between his worlds. Adam and Eve were immortal, all atomic forces were in perfect harmony with each other so that there was no radioactivity of any sort.<sup>32</sup> All of nature was a paradise. Whatever force or energy that could maintain this perfect state, it was able to counter the Second Law of

---

32. This insight explains why radiometric dating using such radioactive isotopes like uranium will always provide estimates for the age of the earth in millions to billions of years. If radioactive isotopes were created from what are considered the atoms they decay to, rather than the other way around, all measurements would suffer from the same error. All measurements would be extremely large even though the creation may have occurred only 6 thousand years ago.

Thermodynamics which describes how all physical processes in the present natural world are driven towards randomness or entropy. In the perfect Creation before original sin, an energy of some sort was inherent in all matter (or infused into matter) to prevent it from going towards entropy. I propose this energy is associated with the presence or power of the Almighty God.

When Adam rejected Him, God withdrew from Creation, and with His withdrawal, the force that held back entropy was lost. Thus eating the forbidden fruit not only affected the biology of Adam and Eve, it affected the forces that hold the particles of this physical universe together. Adam and Eve became mortal; the Creation was no longer 'good.' It is my proposal that the effects of original sin on the physical components of the Creation were caused by what was removed from our universe of time, space, and matter, rather than what was added to the original creation.

At the moment of the Fall, the foreordained process leading to redeeming the Creation back to Himself kicked in, and the natural world began to devolve, not evolve. That nature could function well on its own for thousands of years, without the physical presence of God, reflects how perfect and good it originally was. In the meantime, as the plan of redemption leads us forward to restoration, God cannot interact directly with the natural world without having a drastic effect on matter itself. To interact safely with us, He entered the world as Adam was before that first Adam sinned. He, Jesus, was the Second Adam.

#### *Conclusion:*

If the biblical narrative of Creation, Fall, Redemption and Restoration is considered with the Shroud in mind, it promises to open up a whole new way of looking at Christian theology and how it relates directly to the scientific investigation of the natural world. No longer do Christians have to compromise the truth revealed in Scripture when they interact with Science. The evolutionary worldview may still be considered the only option

to some Christian academics and scientists, since that explains origins in naturalistic terms, but it mixes poorly with Christian theology, especially with respect to the concept of original sin.

What the Shroud has done is to provide the physical evidence that the supernatural exists, that Jesus died for our sins and rose again after conquering death, and that our redemption is as certain a reality as the most highly regarded established scientific fact. **QUITE AN ACCOMPLISHMENT!**

It is with unswerving confidence that I can state with unquestioning assurance that *the Christian perspective is the only perspective in which the Shroud makes absolute sense.*

It could take a lifetime, if not generations, to develop ways to understand the relationship between Science and Faith if Christians take the effort to fully appreciate what God was telling us when He left His image on the Shroud. I hope these thoughts serve as a catalyst for Christian scholars of the next generation to take up the gauntlet of truth and to bring Christ into every facet of the physical world, for that is where He belongs and wants to be.

## Appendix to Chapter 3

### The Sperm and the Somatic Seed Theory

Just like the energy burst theory at the resurrection provides physical evidence for the existence of the supernatural, the continuation of a pure germ cell line in the female provides biological evidence for the Virgin birth and the supernatural conception of Jesus Christ. Yet a pure germ cell line in the male creates an interesting paradox. The Scriptures are very clear that every child born of man is mortal and will die, for sin entered the world through one man, and death through sin (Romans 5:12). Therefore the male contribution to next generation is what passes on the effects of original sin. But how is this possible when the male germ cell line, like the female germ cell line, starts off as being free of the effects of original sin? Since the biological answer to this paradox is not pertinent to our understanding of the Holy Shroud, the answer is being addressed here in an appendix. The reader less familiar with the details of the biology of sexual reproduction may wish to proceed to chapter 4 and return to this appendix at another time.

The paradox:

How can the sperm, produced by the immortal germ cell line in man, transfer the mortality of the somatic cell line from one generation to the next?

The answer lies in the possibility that something from the somatic cells in the father can be picked up by the sperm during sperm development, thus infusing the mature sperm with a type of poison. When the sperm fertilizes the ovum at conception, this poison enters the ovum along with the male complement of chromosomes. Therefore, the male germ cell line may start off free of the effects of original sin, but these germ cells become contaminated during their maturation into sperm so that the mature sperm serves as a vector to carry a poison from the somatic cells in the father to the ovum in the mother. In this way, the sperm transfers the mortality associated with the somatic cell line of the father to the next generation. Based on our present knowledge of human reproduction, the mechanism for this transfer does exist.

*Sperm and the transfer of mortality:*

When a female baby is born, she has in her ovaries all the eggs she will ever make during her fertile years. These eggs, called the primary oocytes, were formed in the fetus by the third month (after fertilization). The primary oocyte is surrounded by a layer of cells called follicle cells, and the primary oocyte and its follicle cells are referred to as a follicle. Each month during her reproductive years, one of her follicles will mature to release its ovum from the ovary. During maturation, it is protected from the somatic cells making up the ovary by its follicle cell layer, and this isolation could explain how the female germ cells never become contaminated by any factor which renders her somatic cells mortal.

Compared to the ovum, the production of sperm follows a different time course, and it has a different association with the somatic cells. Sperm production does not begin until puberty, well after the male is born. Once the germ cells in the male begin sperm production, the immature sperm are never isolated from the somatic cells in the testis, but become intimately associated

with one particular somatic cell, the Sertoli cell.<sup>33</sup> The Sertoli cell “nurses” the sperm as it develops through its various stages from spermatocyte to spermatid. Without this very close association with the Sertoli cell, the sperm do not mature.<sup>34</sup>

The proximity of the developing sperm with the Sertoli cells provides plenty of opportunity for a substance from these somatic cells to enter the sperm. Indeed, the isolation of the ovum from the somatic cells in the ovary is in stark contrast to the intimacy between the sperm and the somatic cells in the testis. When the sperm deliver their half of the normal amount of genetic information to the ovum during fertilization, they also have the opportunity to transfer into the ovum anything that could have been transferred to them from the surrounding somatic cells during sperm development.<sup>35</sup>

Whatever is picked up by the sperm from the Sertoli cells, it could, in fact, be the biological factor which triggers a germ cell in the dividing zygote to become a somatic cell. Had Adam and Eve not sinned, this ‘somatic seed’ or seeds would have generated the somatic cell line from the germ cell line for their biologically immortal offspring. Since they did sin before they conceived, the

33. The Sertoli cell is a kind of sustentacular cell, which are primarily associated with support. A layer of Sertoli cells lines the seminiferous tubules, the tubules by which the sperm are transported from the testes. As the male germ cells develop into sperm, they travel through the Sertoli cell layer, and are fully exposed to the Sertoli cells.

34. Consult any university-level physiology text for a detailed description of the development of the ovum and the sperm. For example, G. J. Tortora and B. Derrickson, *Principles of Anatomy and Physiology*, 14<sup>th</sup> Edition, John Wiley & Sons, Inc., p.1046 (for sperm) and p. 1057 (for ovum). 2014.

35. I was taught during my biology education that the human sperm only delivers DNA to the egg and nothing else. Recent studies have shown that this is not the case. The ovum could also receive other things from the sperm, such as mitochondria, and if so, there is reason to believe that what causes mortality, whatever it may be, can be transmitted by the sperm to the ovum. See R. G. Chiang and E.M. White, “A theologically based biological challenge to the Immaculate Conception of the Virgin Mary,” *Christian Scholar’s Review*, XLIII:3, Spring 2014, pp. 241-260.

somatic seeds now impart mortality to all born of man. Thus, death becomes inherited because the contaminated somatic seeds are picked up by the sperm during its development, then delivered to the ovum during fertilization. Without these somatic seeds, the germ cell line may never be able to give rise to the somatic cell line for the next generation, so any child born would have inherited this mortality. There would be no escaping it.

*Keeping the female germ cell line pure in the presence of the contaminated somatic seed:*

The existence of a distinct somatic seed that transforms a germ cell into a somatic cell provides a biological mechanism whereby the ovum can give rise to pure germ cells although it was, as the zygote, exposed to the contaminated somatic seeds.

How could this happen?

Somatic seeds delivered to the fertilized ovum would be sequestered or isolated to specific cells during cell division because of their particulate nature (possibly pieces of genetic information separate from the nuclear DNA). Let's say, for example, that the successful sperm delivers to the ovum 6 somatic seeds it picked up during maturation. In the first cell division, 1 somatic seed may be captured in one of the two daughter cells of the ovum, and the other 5 in the other daughter cell. In the next set of cell divisions which divides up the original ovum into four new cells, one cell may not have a somatic seed at all, while the numbers in the other three cells could range from 1 to 5. One more set of cell divisions would certainly provide a germ cell without any somatic seed in it at all. This pure germ cell could give rise to the pure germ cells for the next generation. Since the somatic cell line can be distinguished from the germ cell line by the 16 cell stage, the germ cells with somatic seeds would have become somatic cells before this developmental stage, and these somatic cells will give rise to the body and ultimately die.

A helpful illustration to explain how an ovum exposed to somatic seeds could stay pure is that of an apple infested with a worm. If you were to divide the apple in two, one half may have the worm and the other half won't. If the worm were long enough, it might be possible to have part of the worm in each half after you make the first cut. But another cut of the apple to make four pieces will, in all likelihood, create pieces with no worm parts at all. Furthermore, based on the size of the ovum compared to the size of the sperm, the somatic seeds will in all likelihood end up in only a few of the cells created as the volume of the ovum is divided up equally. The volume of the ovum is about 14,000 times larger than that of the sperm.<sup>36</sup>

*The absence of the contaminated somatic seeds in Jesus:*

Adam and Eve were created to be immortal. They were not destined to die but could have been taken directly into eternity as were Enoch and Elijah, possibly using the same mechanism or portal that appeared to be working on Mount of Transfiguration.<sup>37</sup> The eating of the forbidden fruit not only gave Adam and Eve knowledge of good and evil, it also contaminated their somatic cells, and that day, they began to die, biologically. As just outlined, it may be possible that the contaminated somatic cells transfer mortality to the next generation because a substance from the somatic cells (somatic seeds?) needs to enter the ovum in order to trigger a pure germ cell to become a somatic cell. As the

36. From R.G. Chiang and E.M. White, A theologically based challenge to the immaculate conception, *Christian Scholar's Review*, XLIII: 3, 2014, p.257. "The diameter of a human egg is approximately 0.12 mm and that of the head of a sperm 0.005 mm, making the egg's diameter about 25 times larger than the sperm. However, when volume is considered, the difference in size is much larger. The volume of a sphere with a diameter of 0.12 mm is approximately 900,000  $\mu\text{m}^3$  and that of 0.005 mm is 65  $\mu\text{m}^3$ . By volume, the egg is approximately 14,000 times larger than the sperm head."

37. See discussion on death versus translation in A.C. Custance, "Two Men Called Adam" 4<sup>th</sup> Edition, 2010, Doorway Publications, Ancaster, ON, Canada. Pp. 211-215.

product of a virgin birth in which God initiated the process of development, the germ cells which were transformed into the somatic cells in the body of Christ lacked the contaminated somatic seeds that make humans mortal. Jesus was, in fact, the Second Adam created as the First Adam was created. Neither men were contaminated by the effects of original sin.

This scenario is, of course, speculative, but one that fits both of what we know of biology and of theology. What is particularly interesting about this scenario is its inception. It arises from applying Christian theology to the establish scientific facts concerning the Holy Shroud of Turin. That a somatic seed is needed to transform the germ cells into the somatic cell line is certainly a possibility in human development, but it was the serious consideration of the nature of our Lord's body as it relates to the Shroud that has brought this possibility to light. It is a case in which the scientific knowledge gained from the study of biology, and the study of the Holy Shroud of Turin, has shown light unto the revealed truths in Scripture.

What grain of truth the concept of a somatic seed may contain will only become evident as the biology of reproduction and embryology is more fully understood. Yet its foundation is based on the truth of the Gospel. This foundation gives me every reason to believe that the more we know of our biology the more it will show to us what our Lord and Saviour had to do to bring us back to him in order to share with him the joy and glory that each of us was created for.



## Chapter 4

# The Holy Shroud and Christian Belief

If not the actual burial cloth that covered body of Christ in the tomb, the Holy Shroud of Turin is certainly the most unusual piece of cloth in the world. It has undergone the highest degree of scientific study of any object on the planet, with papers produced in peer-reviewed scientific journals; yet most of the scientists who have worked on the Shroud have received no funding for their efforts. It has generated a flood of full length books, and newspaper and magazine articles; yet there are no academic institutions in which the Shroud is the focus of study. There are numerous television documentaries on the Shroud, as well as talk shows and interviews with Shroud enthusiasts; yet the actual cloth has been hidden away for centuries being brought out on very rare occasions. Now that it is stored, since 2002, fully stretched in a specially designed preservation container, it still remains veiled unless one individual, the Pope, permits a showing.

Another irony about the Shroud is the manner by which Christians react to what is by far the most important Christian relic in existence. There are no grounds on which to deny the authenticity of the cloth, yet the most vocal skeptics are often Christians themselves. Even the Roman Catholic popes over the ages have not gone as far as declaring the Shroud an actual relic

of the crucifixion. Instead, they have remained somewhat neutral on its authenticity by referring to it as “an icon of a man scourged and crucified.”<sup>38</sup> By declaring the Shroud an icon rather than a relic the Roman Catholic Church has gone as far as stating that the cloth is a religious artistic representation of the body of Christ, but not the actual cloth that was in the tomb with him.

Like all others who have written on the Shroud, I have received no formal training in understanding this religious enigma. Some universities in Italy are now paying more attention to this relic<sup>39</sup> and possibly a future student will be able to specialize in studies on the Shroud. At the present, Shroud specialists come from a wide range of disciplines and professions which have included photographers, film producers, criminologists, textile experts, medical doctors and a variety of university academics. Many, like myself, never intended to be pulled into the controversial vortex surrounding the cloth, but it has a curious way of attracting ordinary, unsuspecting people involved in other endeavours and turning them into shroudies.

I first became aware of the Shroud after I had spent several years in full time biological research, and was beginning my tenure as a biology professor at a Christian liberal arts and science college. While I integrated biblical concepts into my teaching and research, I put the Shroud aside as an interesting curiosity. Any foundational questions from my students or colleagues focussed on origins – Could the Scripture be taken as actual accounts of reality in the light of the scientific theory of evolution? Few of my students even knew what the Shroud was.

---

38. Pope Francis commenting on the Shroud of Turin as reported by John A. Allen, Jr., in the National Catholic Reporter. Accessed July 2015 at <http://ncronline.org/blogs/ncr-today/pope-francis-and-shroud-turin>

39. For example, the Shroud is studied in a week-long course as part of the Diploma in Shroud Studies from the Science and Faith Institute of the Pontifical Athenaeum Regina Apostolorum, in collaboration with Othonia and the International Center of Sindonology in Turin.

The beginning of my full-time teaching at the university level also coincided with the Templeton Foundation's program to encourage the integration of faith and science in academic institutions. This program was quite successful, and spawned a number of academic conferences and organizations that aim to integrate evolution with Christian theology.

I confess that I was never truly comfortable with the manner by which evolution became integrated by Christian academics, and was not fully supportive of this program. As a biologist, I was well aware of the shortfalls of this theory and never considered it necessary to reinterpret Scripture to fit the evolutionary worldview. However, other very sincere Christian scholars believe that Christians need to accept evolution and to reject young-earth creationism in order to be faithful to the truth revealed to us by the scientific study of God's creation. I came to realize that our differences were not in accepting the facts, but in the way we wanted to interpret these facts. This led me to publish *Rescuing Science from Preconceived Beliefs: religious beliefs at the interface of science and faith*.

This 10 chapter, 300 page, book concentrates primarily on the origins debate, but I also included one chapter on the Shroud. It finally seemed appropriate to refer to this cloth and the image it shows since no other object interfaces with science and faith the way it does. It provides the ideal example to illustrate the role that our own preconceived beliefs play in determining how we interpret the scientific facts.

I entitled the chapter, Science Meets Religion: The Shroud of Turin, but on completing the book, another thought came to mind. If I were to consider the Shroud authentic, what does this tell us about the body of Christ as he lay dead in the tomb before the resurrection took place. From my training in biology, it was an interesting question to ponder, and I found myself hooked! I now confess to being a 'shroudie' and after only publishing one chapter in one book, I have been introduced in the media as an

expert on the Holy Shroud of Turin as it applies to science and faith.<sup>40</sup> I am humbled by this designation, and also consider it a great responsibility. I take it quite seriously.

Part of this responsibility is to ensure that Christians, many of whom are Shroud skeptics, are fully informed of the basic facts concerning this cloth. Even if we continue to consider it a fake, we should know the reliability of the facts on which we have based our decision. In many cases, Christians are not aware that many of their objections have already been answered, and some Christians continue to protest in ignorance. This has caused Barrie Schwartz, a non-Christian himself, to deal with the common objections Christians have towards the Shroud at the beginning of the talks he presents to evangelical Christians. The five main objections, and his answer to each, are listed below:<sup>41</sup>

#### Objection 1:

It is a graven image, and according to the second commandment we are not to make any carved image, or any likeness of anything that is in heaven above, or that is in the earth beneath, or that is in the water under the earth.<sup>42</sup>

#### Rebuttal:

The American team in 1978 has found nothing that could explain how this image was made. In other words, it is not manufactured by human hands, but appeared as a consequence of the interaction between the cloth and the body it covered. As such, it is not by definition a graven image. Nor is it worshipped. It may be an object by which to focus worship, but it, in itself, is not the object being worshipped.

---

40. Refer to Richard Syrett and the Conspiracy Show; Larry Brice and Reachout for Life; William Crawley, The Sunday Segment, BBC Radio, Ulster

41. Presentation by Barrie Schwartz entitled, Hoax or Proof of the Resurrection, The Shroud of Turn. Accessed July 2015. Video posted at <https://www.youtube.com/watch?v=N0N9cMUQrZI>

42. Exodus 20:4-5

**Objection 2:**

The cloth is simply a Roman Catholic relic.

**Rebuttal:**

It has never been a Roman Catholic relic. It can be traced back to the Middle Ages, and for most of this time, it was the private property of the Savoy family, the Royal family of Italy. It only came under the jurisdiction of the Roman Catholic Church in 1985, and still does not belong to the church, but to the Pope. To assume it has been promoted by the Roman Catholic Church as a relic is a misunderstanding of its history. At most, the Popes only refer to it as an icon, not a relic, and never admit to its authenticity.

**Objection 3:**

The Gospels describe two cloths. Since the Shroud is only one cloth, then it cannot be real.

**Rebuttal:**

There were two cloths, one that was placed over the face at the cross, and the other being the Shroud. This face cloth was removed before the body was left in the tomb, folded and placed to one side. It could not be removed from the tomb since, according to Jewish law, anything containing the blood of the deceased needed to remain with the deceased. The face cloth does exist. It is located in Oviedo, Spain, and has been documented back to the 6<sup>th</sup> century. It has no image, but the pattern of blood stains on this cloth match the pattern of the blood stains associated with the head on the Shroud.

**Objection 4:**

It states in the New Testament that long hair is unacceptable.<sup>43</sup> Yet the image on the Shroud shows a man with long hair. This

---

43. 1 Cor. 11:14, Does not even nature itself teach you that if a man has long hair, it is a dishonour to him,

man could not have been Jesus since having long hair would have been against biblical teaching.

Rebuttal:

The admonition against long hair was a Christian custom that appeared 30 to 50 years after Christianity was established. Jesus was a Jew, not a Christian. He would have had long hair according to the custom of his day, and having long hair actually provides another piece of evidence to say that the image is that of Christ.

Objection 5:

The Bible notes that the saviour should have his beard plucked, but the image on the Shroud shows a man with a beard.<sup>44</sup>

Rebuttal:

The Bible may say the saviour should have had his beard plucked, but it does not state that the beard was to be shaved off. The image on the Shroud actually shows a piece of the beard missing at the chin indicating that the beard was indeed plucked in accordance with prophecy.

I can corroborate Barrie's observations for I, too, once received criticism from a well-intentioned Christian when I began providing lectures on faith and science and how they apply to the Shroud. These lectures were presented as part of a continuing education program being offered by a Protestant Christian postsecondary institution and were seen to be officially sanctioned by it. This person was a supporter of this institution, and their objections were addressed to the organizers in an email, relevant parts of which are provided below:

---

44. Isaiah 50:6, I gave my back to the smiters, and my cheeks to them that plucked off the hair: I hid not my face from shame and spitting. (KJV)

Firstly, "Our Lord was raised from the dead and NOTHING OF HIM is left on earth, as they claim that there is Blood of Our Lord on The Shroud [...].

Secondly, we read "in John 20:6-7, New King James Version (NKJV): 6 Then Simon Peter came, following him, and went into the tomb; and he saw the linen cloths lying there, 7 and the handkerchief that had been around His head, not lying with the linen cloths, but folded together in a place by itself." The same thing of using a separate cloth for the head was used with Lazarus, as described in John 11:43-44.

The Shroud of Turin shows the face and Body of Our Lord on one sheet of Cloth. [hence, it cannot be a cloth that covered the body of Jesus]. Gary Cheng (sic) should spend his time reading the Bible instead of conducting these courses."

Since, as has been observed, many of the strongest critics of the Shroud are Christians, I have devoted the following two chapters to relate the Gospel accounts of the crucifixion and resurrection to the authenticity of the Shroud. Many authors have concentrated on the history and science of the Shroud, or how the image was formed, leaving out the Gospel accounts entirely. I believe these accounts provide factual historical evidence related to the Shroud and this evidence should also be incorporated into the larger picture. This critic of my presentations did just this—related the biblical accounts directly to the Shroud—and given their particular way of looking at these events, their criticism was not completely out-of-place.

Initially, when I began to relate the Gospel accounts to the Shroud, I discovered something quite interesting about myself. I had the main points of the Gospel accounts correct, but I also had formulated in my mind a scenario that did not completely match the Gospels. How could this have happen?

Easter represents the most important event to Christians when God died to redeem the world back to Himself. It is the foundation upon which Christianity is based. While non-Christians may only have a superficial knowledge of the first Easter, Christians know about these events in depth, not just from reading the Scripture, but also from songs, plays, books and movies, which we are exposed to at least once a year. Each venue has its own ethos, and each provides the story in a slightly different way with slightly different emphases.

When I removed all the extraneous information that had been added from dramatizations and conjectures of the gospel story created by these various venues, and took the Shroud to be authentic, I found the match between Scripture and the Shroud to be very compelling, enlightening, and emotionally charged. The Scripture supports the Shroud, and the Shroud supports the Scripture. The multiple approaches to describing the same event creates a wonderful kaleidoscope of facts and feelings. Unintentionally, however, the details can become fuzzy so that many of us lack a clear vision of what the Gospel writers have actually written. As admonished by the critic of my lecture series on the Shroud, every now and then we do need to “spend time reading the Bible.”



## Chapter 5

### The Folded Napkin Evidence

If you were born into Christianity or became a Christian later in life, you will likely know the names of the four Gospels. You might have some difficulty reciting the Lord's Prayer, but I believe all Christians, no matter how new in the Lord, will be able to name by rote Matthew, Mark, Luke and John. But have you ever wondered, Why the four Gospels? A single all-encompassing Gospel would have fulfilled the same purpose, and it would have avoided the apparent contradictions we have between the Gospel accounts. These contradictions are often claimed by skeptics to show that the words were not inspired, and that the stories are simply metaphors, or even lies, used to promote a religion.<sup>45</sup> To avoid spending enormous hermeneutic and apologetic efforts trying to establish a harmony between the four Gospels, certainly it would have been wiser to have had one single Gospel.

Although a single Gospel might make intuitive sense, some Bible scholars would disagree. As Arthur Custance wrote:

---

45. For example, maybe the gospel story would be considered more believable if the number of demoniacs Jesus met in Gadarenes was the same in Matthew, Mark, and Luke?

[...] I'm not greatly in favour of so-called harmonies of the Gospels. To my mind, it is analogous to taking three or four photographs of one individual from slightly different angles and attempting by superimposing the negatives over one another to print a single picture. Unless they are all precisely the same, the final portrait would be far less clear and meaningful than any one of the originals taken singly. Yet the originals are all genuine portraits of the same person and cumulatively add up to a total view.<sup>46</sup>

Custance went on to write:

That the three Synoptic Gospels were divinely inspired to appeal uniquely to three different classes of readers has been recognized from the earliest Christian times. Many are the clues to be found in each Gospel which reveal to the eye of faith the particular group of people for whom the record is specially intended.

It is usually held that Matthew wrote for the Jewish people, Mark for the Romans, and Luke for the Greeks. John wrote for all men.<sup>47</sup>

Taking into account that each Gospel was written by different authors for different sets of people, it would be expected that their descriptions of the crucifixion and resurrection will vary slightly. Each writer will have assigned a different degree of importance to a particular event; one may completely leave out what another

---

46. Arthur Custance, *The Nature of Contradictions*, in *Hidden Things of God's Revelation*, Vol. VII, *The Doorway Papers*, 2<sup>nd</sup> Edition, Doorway Publications, Hamilton, ON, Canada, p. 56

47. *Ibid*, p. 73.

found to be highly significant; there may also be contradictions in timing or the detailed actions of the personalities involved. Since we are confining our investigation to the cloth that was to have covered Christ, then we can simplify our comparison of the Gospel accounts to the few verses which are directly linked to this cloth and how it was used.

In the table below, I have listed these events as they were to have occurred up to the point the body was placed in the tomb, and have indicated in the corresponding columns if a particular Gospel reported this event (yes), or did not (no).

Events from cross to tomb	Matt	Mark	Luke	John
Joseph asks Pilate for the body	yes	yes	yes	yes
Joseph brought linen	yes	yes	yes	no
Nicodemus brought spices	no	no	no	yes
Joseph took the body down	no	yes	yes	yes
Joseph wrapped the body	yes	yes	yes	yes
Body was wrapped in a cloth	yes	yes	yes	no
Body was wrapped in strips	no	no	no	yes
Body carried and placed in nearby tomb	yes	yes	yes	yes
Women observe where and how the body is laid	yes	yes	yes	no

From this table, we can see many points of agreement across the Gospels, and although one Gospel may have a point the others do not, a scenario can be devised in which there are no contradictions and all aspects in the four Gospels can be included. Thus, Joseph goes to Pilate and boldly asks for the body of Jesus;

Joseph, accompanied by Nicodemus and others, go to the cross; Joseph takes the body down from the cross; with the help of Nicodemus, Joseph wraps the body according to the tradition of the Jews. This tradition would have included a cloth that covered the head before the body was wrapped for transport; the body was also wrapped with spices, and secured by strips of linen before being moved; the wrapped body was then taken to a nearby newly created tomb; the men's actions were observed by the women who saw where the body was taken, and how it was left there.

At the point of placing the body in the tomb, the accounts stop only to pick up the story after the resurrection. We have no record from any of the Gospels of what went on in the tomb, how long the activity lasted (although it was likely very short-lived since time was a factor), nor how the body was left. But we do know that all this activity was witnessed by the women. Before we consider what may have happened in the tomb when the body was placed there, let's examine the Gospel accounts that refer to the cloth *after* the resurrection had occurred.

Events of Resurrection Morning	Matt	Mark	Luke	John
Women came to the tomb	yes	yes	yes	yes
Women brought spices	no	yes	yes	no
Women saw the tomb was empty	yes	yes	yes	yes
The disciples were told	yes	yes	yes	yes
The disciples did not believe	no	yes	yes	yes
Peter runs to the empty tomb	no	no	yes	yes
Peter sees strips of linen	no	no	yes	yes
John runs to the empty tomb	no	no	no	yes

John sees strips of linen	no	no	no	yes
John and Peter see head cloth	no	no	no	yes

Piecing all this information together gives the following scenario. The women who had witnessed what the men had done to the body, where it was laid, and the state in which it was left, returned as early as they could to treat the body with spices. They discovered the tomb empty and immediately went to tell the disciples. The disciples could not understand what the women were going on about, but Peter and John raced to the tomb to see if the body was indeed missing. Both discovered the tomb empty, and all they observed were the strips of linen where the body had been, and that the cloth which covered the head was folded and placed to one side.

Missing in these reports is any mention of an image on the linen cloth. Also, Matthew and Mark completely leave out anything about the grave cloths, while both Luke and John describe linen strips, not a single sheet as the Shroud is. And only John describes what happened to the head cloth which, according to the custom of the Jews, would have been placed on the head of Jesus before, or immediately after, he was taken down from the cross.<sup>48</sup> Without a description of what actually went on in the tomb when the men left the body there on the evening of the crucifixion, a number of different scenarios have been suggested, some of which are appealing as sermon illustrations or devotionals. It should be remembered, however, that all these suggested scenarios must be purely speculative because the Gospels are silent in this matter.

---

48. Barrie Schwartz, personal communication. Jewish burial customs have changed over the eons and some modern Jews include a three day waiting period to allow for visitation by family traveling from afar. However, same day burial has tended to be the norm.

One particular scenario tweaked my interest, and I found it appealing long before I knew anything about a burial shroud. According to some sources,<sup>49</sup> this devotional has been circulating on the internet since 2007, but I recall hearing a version of this story long before the internet came into existence. It is based on the belief that Jesus, when he rose from the dead, took the napkin that covered his face, folded it, and placed it to one side. And in doing so, he left a hidden message.

In this folded napkin devotional, a head covering (also called a napkin in the KJV) was placed over the head of the body of Jesus Christ even before another cloth was used to wrap his body with spices and strips of linen. When the body was left in the tomb, it remained wrapped in this fashion; a head cloth over the head, another cloth over the rest of the body. When Jesus rose from the dead, the folded napkin devotional suggests that He freed himself from his grave clothes (or was assisted by the angels the women met), took the napkin that covered his head, and neatly folded it and placed it to one side. He left the other linen where his dead body had been. This scenario assumes that 1. Jesus touched an unclean object after he came back to life and before he ascended to heaven, and 2. he folded the head cloth but left the other cloths as they were when he rose from the dead.

The folded napkin devotional answers the question: Why did Jesus fold the napkin? It also helps to explain why John took the effort to emphasise that it was folded and placed to one side. The answer is said to depend on a little known Jewish custom at that time in which a master would let his servants know whether he was finished eating or coming back to the table by the way he left his napkin. If he discarded it by tossing it aside, he was finished. If he neatly folded it, he was not finished and would return. The hidden message in the story is that by laying his "napkin" aside and neatly folded Jesus was saying he will return.

---

49. TruthorFiction.com considers this an eRumor which first appeared on the internet in 2007. See <http://www.truthorfiction.com/folded-napkin/>

The main issue with the verity of this devotional is, in fact, this little known Jewish custom. It is so obscure that even Jews don't know about it. In other words, there is no such Jewish custom and a folded napkin would have meant nothing to the disciples other than a folded napkin. But a misconception more insidious than an imagined custom is inherent in this scenario.

The story-teller and listeners assume the head cloth remained on the body when the disciples brought it to the tomb, and Jesus needed to remove it, or have it removed, when he rose from the dead. This assumed scenario has become the main objection to the Shroud for many Christians. The Gospels give no reason to believe that the head cloth was left on the body after it was brought to its temporary place of interment, but for more than 400 years, this notion has been instilled in the minds of many Christians, especially those belonging to the Reformed tradition. It was John Calvin, himself, a father of the Reformation who first suggested that the head cloth was on the body during the resurrection, and Christians have come to believe that this is exactly what the Gospels are telling us. Moreover, he used this point to argue against the authenticity of the Shroud which was during his time as it is today, the most important relic of Christianity.

To understand why Calvin came to this conclusion, it is important to appreciate the culture of the age when he made this accusation. Europe was coming out of the Dark Ages, and Martin Luther (1483-1546) in Germany had just penned "The Ninety-Five Theses on the Power and Efficacy of Indulgences." It is believed that Luther nailed this document on October 31, 1517, to the door of All Saints' Church in Wittenberg, Saxony, in the Holy Roman Empire, where one of Europe's largest collections of holy relics was housed. This document is said to have initiated the Reformation and the formation of the Protestant faction of Christianity which separated the then Catholic Church into the

Protestant or Reformed Churches and the Roman Catholic Church.

In this document, Luther rejected a practice whereby the individual could offer money to the church in order to secure forgiveness and salvation, either for himself or for someone who had already died. In other words, the penance for sin became a financial transaction. Luther believed this practice severely infringed on the original intention of confession and penance, and had to be discontinued. As he argued, Christians are saved through faith alone, and need not purchase forgiveness of sins that were already forgiven. However, this practice had become a very lucrative venture for the church, in addition to the veneration of relics, and these were not so easy to give up.

John Calvin (1509-1564) was born in France, and was only 8 years old when Luther made his charge against the Catholic Church. Calvin was trained as a lawyer, and around the age of 21, is said to have separated himself from the Roman Catholic Church to join the Protestant movement. He was forced from France when the Roman Catholic Church violently opposed the Protestant movement, and spent his time in Switzerland and Germany where he wrote extensively on biblical principles associated with salvation. He developed a system of Christian Theology, referred to as Calvinism, in which God has complete sovereignty over our salvation. In other words, indulgences and penance established by the Roman Catholic Church, as well as the veneration of relics, were superfluous. It was against this backdrop that John Calvin wrote, in 1543, a *Treatise on Relics*.

To fully appreciate the context in which he dismissed the Shroud, it is important to understand that he was, in this portion of his *Treatise*, criticizing the Veronica cloth. Legend alleges that Saint Veronica, as Jesus was being taken to the cross, took a cloth and wiped the blood and sweat off the face of Christ, and an image of his face miraculously appeared on the cloth. Several cloths with paintings of the face of Christ existed in churches in

Europe, and each claimed it to be authentic. John Calvin refers to it as the “sudary.” He writes:

It is now time to treat of the “sudary,” about which relic they have displayed their folly even more than in the affair of the holy coat; for besides the sudary of Veronica, which is shown in the Church of St Peter at Rome, it is the boast of several towns that they each possess one, as for instance Carcassone, Nice, Aix-la-Chapelle, Tréves, Besançon, without reckoning the fragments to be seen in various places.

Now, I ask whether those persons were not bereft of their senses who could take long pilgrimages, at much expense and fatigue, in order to see sheets, of the reality of which there were no reasons to believe, but many to doubt; for whoever admitted the reality of one of these sudaries shown in so many places, must have considered the rest as wicked impostures [...]. But it is not only that the exhibitors of this one and the same relic give each other mutually the lie, they are (what is far more important) positively contradicted by the Gospel. The evangelists who speak of all the women who followed our Lord to the place of crucifixion, make not the least mention of that Veronica who wiped his face with a kerchief. It was in truth a most marvellous and remarkable event, worthy of being recorded, that the face of Jesus Christ was then miraculously imprinted upon the cloth, a much more important thing to mention than the mere circumstance that certain women had followed Jesus Christ to the place of crucifixion without meeting with any miracle; and, indeed, had such a miracle taken place, we might consider the

evangelists wanting in judgment in not relating the most important facts.<sup>50</sup>

Such was John Calvin's opinion of the Veronica cloth and the miraculous event that created it. Today this cloth, or Veil of Veronica, is venerated by the Roman Catholic Church as the Sixth of the fourteen Stations of the Cross. Several cloths exist, but due to the miraculous way this image was said to have been created and the fact that all the images clearly appear as being painted, none have been examined scientifically for their authenticity. Continuing in this vein, Calvin comments on the Shroud, which he refers to as the wrapping sheet.

The same observations are applicable to the tale of the sheet in which the body of our Lord was wrapped. How is it possible that those sacred historians, who carefully related all the miracles that took place at Christ's death, should have omitted to mention one so remarkable as the likeness of the body of our Lord remaining on its wrapping sheet? This fact undoubtedly deserved to be recorded. St John, in his Gospel, relates even how St Peter, having entered the sepulchre, saw the linen clothes lying on one side, and the napkin that was about his head on the other; but he does not say that there was a miraculous impression of our Lord's figure upon these clothes, and it is not to be imagined that he would have omitted to mention such a work of God if there had been any thing of this kind. Another point to be observed is that the evangelists do not mention that either of the disciples or the faithful women who came to the sepulchre had removed the

---

50. John Calvin, "Treatise on Relics," accessed Sept. 2015 at <http://www.gutenberg.org/files/32136/32136-pdf.pdf>, p. 237

clothes in question, but, on the contrary, their account seems to imply that they were left there. Now, the sepulchre was guarded by soldiers, and consequently the clothes were in their power. Is it possible that they would have permitted the disciples to take them away as relics, since these very men had been bribed by the Pharisees to perjure themselves by saying that the disciples had stolen the body of our Lord? I shall conclude with a convincing proof of the audacity of the Papists. Wherever the holy sudary is exhibited, they show a large sheet with the full-length likeness of a human body on it. Now, St John's Gospel, chapter nineteenth, says that Christ was buried according to the manner of the Jews; and what was their custom? This may be known by their present custom on such occasions, as well as from their books, which describe the ancient ceremony of interment, which was to wrap the body in a sheet, to the shoulders, and to cover the head with, a separate cloth. This is precisely how the evangelist described it, saying, that St Peter saw on one side the clothes with which the body had been wrapped, and on the other the napkin from about his head. In short, either St John is a liar, or all those who boast of possessing the holy sudary are convicted of falsehood and deceit.

These are relatively long quotes from his work, but it is important for the reader to fully appreciate the context in which John Calvin is criticizing the Shroud. For instance, he never mentioned that the image on the wrapping sheet was a painting, nor that more than one were being displayed, which was happening with the Veronica cloth and other relics like pieces of the cross, the body of St. Stephen, or the head of John the Baptist. Since he used the appearance of more than one of the same relic

as proof against that relic, he would have undoubtedly used the same logic to discredit the Shroud if there existed more than one cloth on which the image of the entire body of Christ was imprinted. But there could only be one such relic since any copy could be clearly seen to be made by human hands. In this regard, John Calvin was quite truthful to the facts as he knew them, and did not offer proof that could not be substantiated. Instead, he relied on the Gospel account from John that there were two cloths discovered in the tomb and both covered the body. Then Calvin made the assumption that the Shroud covered the body from the neck down and that the napkin remained over the head. Therefore, the full image of a man, head-to-head, could not be captured on the single cloth that wrapped the entire body of Jesus as he lay dead in the tomb. And this logic is convincing, and continues to be used by Christians to this day.<sup>51</sup>

Being part of the Reformed tradition myself, I am very cautious when I find myself in disagreement with someone as highly respected as John Calvin. He has provided fairly convincing biblical evidence that the wrapping cloth so venerated by the Roman Catholics (Papists, as he referred to them) can be nothing more than a hoax. If I were working with the same information that John Calvin was limited to, I too would have arrived at the very same conclusion. I would ignore this relic in the same way I currently ignore the Veronica Cloth, heads of John the Baptist or pieces of the cross. But Christians today do not have the excuse of ignorance, and I wonder what John Calvin would have written had he the opportunity to see for himself this amazing artifact of the resurrection.

If you assume that the Bible provides a true account of reality, the physical characteristics of the image on the Shroud are best

51. The afore mentioned Christian critic of my Shroud lecture series; also Philip Mathias, of the National Post in January, 2012, wrote, "If the shroud is supposed to carry the image of Jesus, how could the head appear on it, when Jesus' head, the New Testament tells us, was wrapped in a separate cloth? Whatever the shroud is, it could not have been the cloth that covered Christ."

explained by the fact that at the time of the resurrection the Shroud wrapped Christ, and that the resurrection event left the negative imprint of his body on the cloth. If this truly happened, then the Gospel accounts should provide some evidence that the body and the cloth were positioned in such a way to allow for the generation of this image, and that John Calvin, despite his dedication to the truth of the gospel, may have been mistaken.

And the Gospel accounts do!





## Chapter 6

### The Folded Napkin Significance

I previously listed what Barrie Schwartz describes as the common objections evangelicals have against the Holy Shroud of Turin. The presence of a head cloth is objection #3, and Barrie makes a quick and short rebuttal: the head cloth was removed by the disciples *before* they left the body in the tomb.

The difficulty with accepting this explanation is that it requires us to assume that more was done to the body after it was wrapped at the foot of the cross and brought to the tomb. For some reason, before being left in the tomb, the body was unwrapped, the head cloth removed and put to one side, and then the body was at least partially cleaned before it was completely covered by a single cloth and left unbound. The Gospels convey nothing to us about this rather significant exercise, and if it did occur, it does not prove the Shroud to be authentic; it merely removes one of the criticisms against it. A person still needs to believe the image on the cloth is authentic before they can accept this explanation of the facts. Since the Gospels do not say anything about the body in the tomb, it is still very possible that the head cloth remained on the head and the Shroud is a medieval forgery, contrary to the rebuttal offered by Schwartz.

But do the Gospels really say nothing about the body in the tomb?

If you assume the Shroud is a fake, your answer to this question would likely be yes, the Gospels say nothing about the body in the tomb. But if you assume the Shroud is authentic then some of the events reported in the Gospels take on a different meaning and an interesting thing happens. All the Gospel accounts begin to meld into one concise and complete story, and there is convincing biblical evidence that the body was, in fact, worked with before it was left alone in the tomb.

The following is my attempt to describe the events associated with the burial and resurrection of Christ – assuming the Shroud is authentic and allowing the information it carries to augment the gospel story by filling in some of the missing detail. This exercise is not intended to convince a sceptical evangelical Christian that the cloth is authentic; what a person comes to believe is ultimately what that person wants to believe. I hope it would at least put to rest those misguided words of John Calvin which have echoed down through the ages to the present day.

*As our Saviour hung dying on the cross, he was surrounded by soldiers and mockers who hurled insults at him. His disciples had abandoned him, and even John, the disciple he loved, had left to take Mary, Jesus' mother, to his own home. The scourging and crucifying did not kill Jesus. Instead, he gave up his life willingly, and died far sooner than Pilate had expected. So when Joseph of Arimathea asked for the body, Pilate needed confirmation that Jesus was indeed dead. A Roman soldier had already confirmed that life had left the body by driving a spear into his side to pierce his heart. If Jesus was alive, this blow would have killed him; if Jesus was dead, blood and water would pour from the wound – as it did.*

*After receiving permission to take the body of Jesus, Joseph who had purchased the grave linens, and Nicodemus who had brought the spices, came to the foot of the cross. Since they were wealthy men, they were accompanied by others to help with carrying the supplies and wrapping the body. And unlike the men who had abandoned Christ, several of the women who followed him stayed to witness what was happening. Because of the manner by which these events are recorded in the Gospel of John, it is very likely that John rejoined the group after ensuring that Jesus' mother was safe.*

*At the cross, the first task was to secure a cloth over the head to cover the face of a deadman. This practice is usually performed by the one closest to the deceased, and that would have been John, rather than Joseph. Depending on how difficult it was to get to the body, John may have attached the head cloth before or after the body was lowered.*

*Since the body needed to be removed from the cross before the commencement of the Sabbath (which would be at 7 pm), and since Pilate had already delayed them, the decision was made to place the body in a nearby tomb that Joseph happened to own. It would later be placed in the family tomb after the Sabbath, when time permitted. This plan meant that this first interment would only be temporary, and that the mourners would give the body proper respect when it was placed for permanent interment into the family tomb.*

*Joseph and Nicodemus took charge of covering the body for transport. They knew this wrapping was only a temporary measure to move the body to a nearby location, so Joseph saved the linen he bought as the grave cloth, and only used the head covering and the strips of linen to get*

*the body to his tomb. The spices that Nicodemus supplied were also used at this time.*

*Knowing that the body would be re-wrapped for proper burial when the Sabbath had passed, Joseph did not leave the body in the tomb wrapped as it was at the foot of the cross. The linen strips and the head cloth were taken off. John, in reverence to his friend, probably folded the head cloth and placed it to one side. One can only imagine the sense of remorse and personal loss that John was feeling as he carried out this action. This head cloth, along with the linen strips that may have also contained blood, would have to be interred with the body. And in the process of unwrapping the body, the body was partially cleaned.*

*The clean grave cloth that would serve for the permanent burial was then laid out and the body placed on one half of its length. The hands were brought together or they may have taken on this posture since the body had been wrapped that way at the cross. The remaining half of the cloth was folded over the head to cover the body. It was not necessary to secure the cloth with the linen strips since the next time the body would be visited, it would be treated with spices and wrapped properly for permanent burial. The women observed how the body was left, and went away to prepare the spices needed to complete the task.*

The Gospels tell us nothing about the actions of the men after the body was wrapped at the cross, and left in the tomb. This absence of information certainly allows skeptics to claim that the head cloth was covering the body during the resurrection so that the head of Christ should not appear on the Shroud. But if you assume the Shroud is authentic, then certain events had to have happened to make it so. First, at the cross Joseph did not use the Shroud to cover the body since they had decided that this first wrapping at the cross was temporary. Second, the head cloth and

linen strips were removed at the tomb. These strips were found with the linen cloth, but the head cloth which contained sweat and blood from the head was folded and placed to one side away from the linen cloths. Third, the body would have been partially cleaned as the linens used in this first wrapping were removed. And fourth, the body was laid out on the Shroud in preparation for the wrapping that would take place after the Sabbath so the cloth was not bound around the corpse.

What is particularly compelling about this scenario is the fact that the Gospels do provide strong circumstantial evidence that the interment in the new tomb was temporary and that the body was left ready to be wrapped for permanent burial. Up until I first considered this scenario, I was puzzled why the women returned to the tomb after the Sabbath with spices to anoint the body if, in fact, it was already wrapped by Joseph and Nicodemus at the cross. Then I came to a startling realization when I re-read Luke 23: 55-56:

The women who had come with Jesus from Galilee followed Joseph and saw the tomb and how his body was laid in it. Then they went home and prepared spices and perfumes.

They SAW the tomb, and HOW (not where) his body was laid. And having done so, they THEN took the appropriate actions. They went home and PREPARED spices and perfumes to anoint the body, a body that had been left in such a condition that it required and permitted this action. If the men had left the body wrapped as it was at the cross, there would be no need to prepare spices and to bring these spices back to the tomb.

When the women return to the tomb after the Sabbath, they tell us nothing about the grave clothes. The main point is that the tomb was empty, angels appeared to them, and they ran to tell the disciples, not that Jesus had risen, but that the body of Jesus was

missing. Just the impulsive Peter, and the disciple whom Jesus loved took immediate action by running to the tomb. They found the tomb empty, as the women had said, with only the grave clothes remaining where Jesus had laid. Then John added the infamous observation used by so many Shroud skeptics (John 20: 7, KJV):

And the napkin, that was about his head, not lying with the linen clothes, but wrapped together in a place by itself.

One commentator made the suggestion that God knew that almost 2000 years after the resurrection a shroud would be touted as the death shroud of Christ and that it would bear a photographic image even though it was a fake. Because of the new science of photography and computer imaging, people would accept the authenticity of the cloth and start worshipping the image like a graven image. To prevent this from happening, God inspired John to include the information that a head cloth had covered the body as it lay in the tomb. For this reason John made special mention that a napkin was about Christ's head, and that it was found wrapped up in a place by itself. John, himself, did not know the significance of this description; it was only added by inspiration to become significant almost two thousand years later.

Another commentator suggested that at the time that John wrote his Gospel, there was a shroud being shown among the Jews as proof that Jesus rose from the dead for this cloth bore the image of the body of Christ. Rather than being inspired by God to include an account which would only become meaningful centuries later, John knew at the time he wrote that this grave cloth was a fake. He placed the napkin in his account of the resurrection as a reminder to the Jews that a dead body would have had its head covered by a cloth. By emphasizing the napkin

and where it was found, any Jew familiar with burial customs would know that the image on this fake cloth could not have been that of Christ.

I never tire of reading the Gospel accounts of the resurrection, but in the past, I have been repeatedly puzzled by the emphasis that John had placed on the folded napkin. Others have as well, hence the thoughts of these two commentators. Then when reading Arthur Custance's *Without Form and Void*,<sup>52</sup> I realized that translating from Greek or Hebrew into English has its difficulties especially when subtle differences in timing are involved.

I may be mistaken about the mechanics of linguistics since I am a biologist, not an expert on languages, but this started me to wonder if John emphasised the napkin not to convey his surprise that the napkin was found folded and placed to one side, but to tell his audience that the napkin was *not* left on the body when John left the tomb. In other words, John (and Peter) did discover the image of the body on the death shroud and were secretly sharing this among the Jews as a tangible witness to the resurrection. As some Shroud proponents have noted, a cloth containing human blood would be considered unclean according to Jewish practice, and the disciples could not openly admit to possessing one. Any Jew, of course, would need no reminder that a cloth was secured over the head of a corpse. Thus John had to convey the message to his fellow Jews that the head cloth had actually been removed, probably by John himself, before John left the tomb on Friday night.

If the Shroud is real, and if John were conveying to his readers that he had removed the head cloth, what better way to translate this emphasis other than to say that in the empty tomb, the head cloth was *still* there, in exactly the same place where he had left it. The English translation ends up showing a considerable unwarranted emphasis on the head cloth, but this emphasis could

---

52. Arthur C. Custance, "Without Form and Void," Doorway Publications, 4<sup>th</sup> Edition, Ancaster, ON, Canada, 20??

easily be interpreted to convey this sense of timing. John is telling us that the cloth was where he had placed it, as opposed to suddenly discovering where it was.

With this thought in mind, I then looked through a number of different English translations to see if the word *still* was used. I had been referring to a pre-2011 edition of the NIV which, as seen in the following quote, does not incorporate the word *still*:

John 20: 7 (NIV pre-2011)  
as well as the burial cloth that had been around Jesus' head. The cloth was folded up by itself, separate from the linen.<sup>53</sup>

As many Christians do, I refer to an internet website to compare the English versions of the Bible. I was taken by surprise to find that the most recent editions of the NIV say the following:

John 20: 7 (NIV post 2011)  
as well as the cloth that had been wrapped around Jesus' head. The cloth was still lying in its place, separate from the linen.<sup>54</sup>

The word *still* also appears in brackets in the Amplified Bible<sup>55</sup> indicating that it is a permissible translation.

With the Shroud added to the picture, I would humbly submit that adding *still* to the translation is more in keeping with what John was saying in the Greek. The cloth was not around the head

---

53. copyright 1984, International Bible Society

54. Bible Gateway accessed July 2015, at

<https://www.biblegateway.com/passage/?search=John%2020%3A7&version=NIV;AMP>

55. John 20:7 Amplified Bible (AMP), 7 But the burial napkin (kerchief) which had been around Jesus' head, was not lying with the other linen cloths, but was [still] [a]rolled up (wrapped round and round) in a place by itself.

Footnote a. John 20:7 Marvin Vincent, Word Studies.

of Jesus while he laid dead in the tomb. It was still there, just where John had left it when he removed it from the head of Jesus on that most mournful of nights.

Assuming the Shroud to be authentic, this cloth was discovered by the impulsive Peter and the much more level-headed John. One can only wonder at their reaction.

John also tells us something quite odd about himself at the tomb. "He saw and believed" (John 20:8). Taken on its own, this verse implies that John believed Jesus had risen, but his following verse modifies this comment indicating to us that John was referring to believing what the women had claimed, that his body was missing. And believing now that his body was missing, John may have picked up the Shroud getting his first glimpse at the unusual image on this cloth. At that moment in the tomb, John may have had an experience similar to what Secondo Pia had had when he viewed the image of the face appearing on his negative in the dark room. He was seeing the face of God.

John, too, saw and believed!

The Shroud did not make John believe; it provided the proof to believe what he truly wanted to believe. His beloved friend must be alive and well . . . somewhere.

\* \* \*

In my experience, Christians tend to be the most vocal critiques of the Shroud, and I believe, justifiably so. When the Bible is considered to be the inerrant Word of God, and this word can be interpreted to counter the claims being made for this cloth, there is little alternative for the Bible-believing Christian but to declare the cloth a fake. It requires a certain degree of scepticism to begin to doubt the writings of such people like the highly respected father of Protestantism, John Calvin.

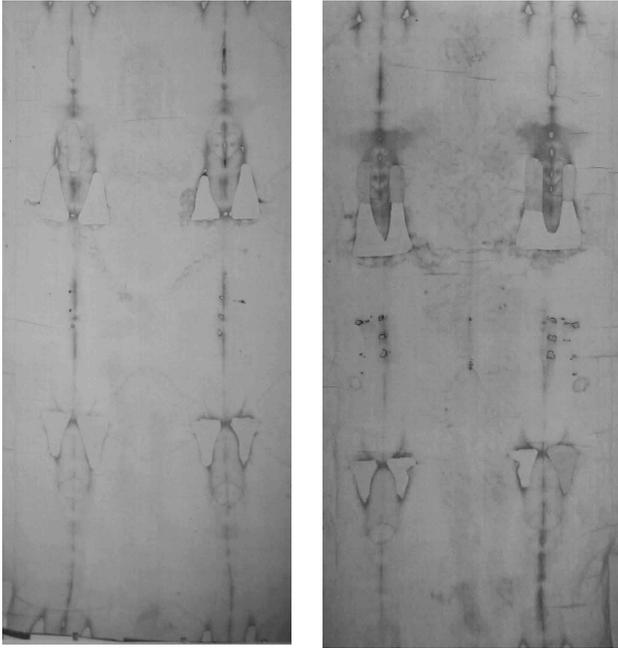
As pointed out in the preceding two chapters, I believe that John Calvin was mistaken, but he was not as much prejudiced in his judgement as he was misguided due to the lack of information. He never had the opportunity to examine the Shroud first hand, nor the privilege of knowing the wealth of scientific evidence that fully supports the Shroud's authenticity. He was also comparing the Shroud with the Veronica Cloth, several copies of which were reported to be genuine at the time of his writing.

Unlike John Calvin in 14<sup>th</sup> century Europe, we in the modern world have little excuse for being misinformed. But it's not easy to take in all the information that is available since so much comes from so many different scientific disciplines. As noted in Chapter 1, I was introduced to the Shroud by Thaddeus Trenn. Trenn specialized in the history of science, in particular, the history of modern physics. He concentrated on explaining why scientists could not cope with the Shroud, and using his knowledge of physics, provided an explanation as to why the carbon dating was incorrect for the cloth. His presentation introduced me to the Shroud; it took subsequent years of study to become familiar with the incredible amount of scientific and historical information supporting its authenticity, and to bring me to the realization that this cloth can only be explained as a genuine relic of the resurrection.

After compiling the facts and theories related to the Shroud, I found that arranging this information into a chronological order helped me to appreciate the talents of the people involved and the multitude of opinions they expressed. Each new discovery had its proponents and its skeptics, and led, often several years later, to other new discoveries which also spawned a new generation of proponents and skeptics. Beginning with its first photograph in 1898, the modern history of the science of the Shroud is as fascinating as its distant historical past. The following chapters attest to this.

At first glance it may also seem simply a fantasy to apply our knowledge of the Shroud to the history of humankind starting with Adam and the Garden of Eden, through the birth of the Christ child in Bethlehem, to the resurrection of the Messiah. But as I do so in my concluding chapter, this amazing story becomes less a fantasy and more a fantastic tale that is irresistible for any Christian to ignore. The Shroud is truly as profound as it is mysterious.





Pictured here are the front (left) and back (right) body images on the Shroud of Turin as they appear in black and white. The high contrast marks represent damaged areas caused by the 1532 fire, while the low contrast body images are just visible between the burn marks. These very low-contrast figures were the only way to view the Shroud prior to the invention of photography. In colour, the Shroud appears as different shades of yellowy-brown. These pictures were taken by the author of a full sized replica purchased from the Shroud of Turin Education and Research Association, Inc.

## Chapter 7

### The Science Begins

The Holy Shroud, also known as the Shroud of Turin in recognition of its present-day location in Turin, Italy, is a long rectangular piece of linen cloth approximately 14 feet long and 3.5 feet wide. In measurements used at the time of Christ, its dimensions can be described as 8 cubic long by 2 cubic wide. Prior to being cleaned and preserved in 2002, this cloth looked like a stained and soiled dirty piece of linen, badly in need of washing, that could have been used to cover a long rectangular table. After preservation, the stains are not as obvious, the cloth is a bit lighter in colour but still brownish yellow overall, the black marks running along either side are not as pronounced, and some of the creases have been smoothed out. One added peculiarity about this cloth, and this cloth only: it bears the ghostly image of the completely naked body of a man, front and back, showing signs of scourging and crucifixion. There has never been found another cloth such as this. It is truly unique.

This cloth is traditionally believed to be the burial cloth that wrapped Christ as he laid dead in the tomb, and the image on the cloth is that of Christ. Its role as a burial cloth certainly falls in line with the custom of first century Jews who were known to have covered their dead with a single piece of cloth. Yet could this

cloth be the very same cloth that covered Christ knowing that it was first mentioned in a letter written in 1389, when Pierre d'Arcis, Bishop of Troyes declared this very same cloth to be a painted forgery?

Pierre d'Arcis was never able to provide any evidence to substantiate his claims, and the pope finally told him to keep quiet about it under the threat of excommunication. Yet the accusation made sense because a fake Shroud would have appeared during the Golden Age of relics in Medieval Europe. At that time, relics were used to draw pilgrims and their money into a church, resulting in fierce competition between parishes. More than one church claimed to have the head of John the Baptist or the body of St. Stephen the Martyr. If the Shroud is a painted forgery, it would likely have been fabricated during this period.

This accusation of a medieval painted forgery continues to be made by Shroud skeptics today, but Ian Wilson, probably the best qualified and most respected Shroud historian in the English-speaking world, has been able to link the Holy Shroud of Turin to the time of Christ. This was possible when it became apparent that the Shroud has not always been referred to as the Shroud, in the same way dinosaurs have not always been referred to as dinosaurs, a name that was given to these creatures by Sir Richard Owen in 1841. At one time in its history, the Shroud was called the Mandylion or the Cloth of Edessa. These names trace the Shroud back in time from present-day Turin, Italy, to Chambéry and Lire in France, then to Constantinople (now Istanbul, Turkey), to Edessa (now Urfa, Turkey) and finally to the disciples in Jerusalem at the time of the crucifixion.<sup>56</sup>

Another fact which supports the authenticity of the Shroud is that only one Shroud exists. If it could have been created by human hands, more than one would have certainly appeared on the scene. The medieval relic trade generated so much wealth for

---

56. For a complete account of the history of the Shroud, see Ian Wilson, *The Blood and the Shroud* (London, UK: Weidenfeld & Nicolson, 1998)

the forger and/or the church displaying that relic that several copies of the same relic existed at the same time. If he went looking for it, John the Baptist could find his head in Damascus or in Rome, and at least 21 churches claimed to have the foreskin of Christ, removed by circumcision according to the custom of the Jews.<sup>57</sup> Being the most holy of all relics, there should be several pieces of cloth claiming to be the Shroud of Christ today. But direct examination of the cloth clearly shows, without any question whatsoever, that the image on this cloth is not a painting. It cannot be a painted forgery because it cannot be duplicated. All attempts to make copies can be easily recognized as copies leaving only this cloth in Turin as the one true Shroud.

Unlike other relics that require separate documentation, or corroborating evidence for authentication, the evidence for this cloth being the authentic shroud lies in the cloth itself. There is only one such shroud because there is only one such image that has ever been placed on a piece of cloth in this fashion.

If seeing is believing, then the Shroud has been plagued with a serious character flaw during most of its history. Over the centuries, it was seldom exhibited (maybe for a few days once every 30-40 years), and there was no way to accurately reproduce the image for people to see what it did look like when it was folded and placed back into its casket. Attempts were made by competent artists to reproduce this image while the cloth was being shown, but these copies could never master the quality of the original, which in fact, is not a painting.

Finally the 1800's saw the advent of the science of photography which made it possible to capture a real likeness of the image on the Shroud. The first successful photographic technique was introduced to the world by the Frenchman, Louis Daguerre, in 1839, and pictures obtained using his method were referred to as daguerreotypes. In this process, a light sensitive

---

57. The medieval relic trade, at [http://hoaxes.org/archive/permalink/the\\_medieval\\_relic\\_trade/](http://hoaxes.org/archive/permalink/the_medieval_relic_trade/)

solution was applied to a polished metal plate, and this plate was placed into the camera. The plate was exposed to light by removing the cover over the camera lens. To make the image visible on the plate, this plate was treated with a variety of chemical fumes in a darkroom. The image created on the metal plate was the actual picture. Because the metal tarnished when exposed to air, and because the picture could be easily marred, daguerreotypes were placed under protective glass in specially designed display frames.

The first public exhibition of the Shroud during this early age of photography occurred in April, 1868. At this time, it was being displayed to celebrate the marriage of Prince Umberto of the House of Savoy to Princess Margaret. The King was approached for his permission to make a daguerreotype of the image of the Shroud, but the request was denied. It is not reported why the King objected, but this first opportunity to capture a photograph of the Shroud was missed.

Thirty years later, in 1898, the prince who had been married in 1868 was now King Umberto I of Italy. The year 1898 marked the 400<sup>th</sup> year that the Shroud had been in Turin, and the 50<sup>th</sup> anniversary of Italy's Statuto Albertino constitution of 1848 which made the House of Savoy the royal family of Italy. To celebrate this special occasion, the Shroud was to be publically displayed once again. And by 1898, a new photographic technique, which overcame many of the disadvantages of the daguerreotype method, had evolved. Glass plates had replaced the metal plates, and since light could be shown through the glass plate, it was also possible to make copies and to enlarge the image after it was captured on the glass plate. This was not possible with the daguerreotype.

In 1898, most photography was done by amateurs, albeit, very competent and successful amateurs who created their own light-sensitive glass plates for their cameras and also processed the pictures entirely on their own. One such person was Secondo Pia,

who, in Turin in 1898, was a 43 year old lawyer-turned-politician, and a well respected photographer who had been making excellent pictures for over 10 years. In 1890 he was awarded the Grand Gold Medal at the first Italian Architectural Exposition, one of many honours he received for his photographic work. He prided himself in never retouching negatives and boasted that he only printed what his camera saw. In the early months of 1898 he was invited by Baron Antonio Manno, chair of the Committee for Sacred Art, to capture with photography various examples of sacred art in the Turin region. These works were to be displayed in Turin during the royal celebrations, and of course, a picture of the Shroud would greatly enhance the festival.

There is some ambiguity regarding the person who first suggested a picture of the Shroud for it may have been Pia himself, or a Salesian priest named Noguier de Malijay.<sup>58</sup> But before a picture could be taken, Baron Manno had to obtain permission from King Umberto I, the owner of the Shroud. But permission was not readily forthcoming. As noted, previous requests to obtain a photograph using the daguerreotype technique were rejected.

And the rejections were not entirely based on concerns for the safety of the Shroud, although it was not certain if the illumination required for photography would damage the cloth as the picture was being taken. Other concerns questioned if any of the spiritual force inherent in the cloth would be transferred to the photograph, or whether each photograph should be treated with all the respect of the relic itself, or whether such a photograph should even be sold for profit. In the end, permission was granted with the assurance that the work would be done by Pia, that the photograph would provide a copy of the image on the cloth should the cloth ever be destroyed, and that this photograph could now be disseminated throughout the world.

---

58. The Salesian Society whose patron is St. Francis de Sales, was founded in Turin in 1844 to educate the poor and neglected boys for the priesthood.

For the first time, people not local to Turin or not able to attend an exposition would have a chance to see for themselves this curious artifact.

King Umberto may have also permitted photographing the Shroud since the daguerreotype had been replaced with a much easier method making photography commonplace. It was very possible that any of the millions of people anticipated for the upcoming viewing could produce and distribute their own photograph without any control by the House of Savoy. Whatever was the reason why the King granted his consent, it was obvious that photography, the new science, should be applied to the Holy Shroud of Turin. And not only could a photograph help to preserve this image for posterity, it may even provide clues as to its origins. Little did anyone come even close to considering what this new science was about to do.



## Chapter 8

### Secondo Pia and the First Photograph

As generations pass and the 21st century moves along in years, there will be very few people left who will have had any experience with the photographic technique used by Pia to capture the first photograph of the Shroud. If so, the significance of this first picture will be sadly lost. If Pia had used either the older daguerreotype method or our modern digital photography, he would not have discovered a very significant scientific fact about this image, a property that would forever change the way the world viewed the Shroud.

Both daguerreotype and digital photography create an image of the scene without first creating what is called a negative. In the method used by Pia, the glass plate in the camera captures a negative image of the scene. After this negative image is processed in the darkroom, light is shown through this negative onto photographic paper to create what the scene actually looks like. This picture, obtained from the negative, is called the positive. The technique used by Pia is known as film photography, and after more than 100 years of successful use, it was replaced by digital photography just a few short decades ago.

Anyone familiar with digital photography knows that pictures can be viewed instantaneously. This allows the one photographed to immediately see what the photographer captured, and if necessary, ask that more pictures be taken. To obtain a photograph using film photography, there is a

considerable time lag between the 'photoshoot,' which captures the negative image on the film in the camera, and the appearance of the positive prints created from the negatives. When film photography was still being used, the period of time between submitting your exposed film to processing and the development of the positive prints could range from hours to days.

To process the film from the camera, the film is first removed from its light-tight container, and under dark conditions, is soaked in a developer solution in order to make the image visible, then washed and soaked in a fixative solution that stops the film from responding to light. The image captured on the film from the camera is not a true representation of the scene that was photographed because the light striking the film causes the film to turn dark, whereas areas not hit by light remain clear. Therefore, the dark areas in the scene appear light on the film while the light areas in the scene appear dark on the film. For this reason, the image on the film is known as the negative.

After the negative is obtained, it is placed into a device called a photo enlarger. In the darkroom, light is shone through the negative casting its shadow over a piece of light-sensitive photographic paper. The process that captured the light on the film in the camera is now reversed with the photo enlarger. The image on the negative is also enlarged, hence the name photo enlarger. After being exposed to the shadow cast from the negative, the photographic paper is passed through a developer and a fixative, and the real life picture, or the positive print, is formed. The film from the camera is the negative for it had on it the negative image; the image captured on the photographic paper is the positive and shows a true representation of the image or scene photographed.

These steps leading first from exposure of the film in the camera to development of the negative in the darkroom, then second, from exposure of the photographic paper in the photo enlarger to the development of the positive were well-known to

Pia. Also well-known to Pia was the difference in appearance between the negative image and the positive image. This difference is no longer seen today with the use of digital photography, which captures a positive image without having to generate a negative image. People or scenes pictured in the negative always look confusing and less recognizable since the negative is not the real appearance of what was photographed.

Many, many years ago, during my graduate student days and before digital photography was invented, I spent hundreds of hours processing photographic film of pictures taken with the electron microscope. The number of photographs I made must have ranged in the thousands. At times this seemed like a mindless exercise, but I was being driven by a quest to more fully understand the relationship between what a nerve terminal looked like and how that nerve terminal behaved. I have since moved on to other interesting research projects, and I no longer use the electron microscope. However, because of this work, I was left with a lasting appreciation for those early photographers, like Secondo Pia, who pioneered film photography and made taking pictures a regular part of everyday life.

The main difference between the work of Pia, and that of my own, was the camera used to capture an image on the film. Pia's camera was a large wooden box with a bellows attached to the back. The bellows allowed him to move the photographic plate back and forth for focussing. The front was equipped with a Voigtlander lens that directed the image onto the 50 cm by 60 cm glass plates. Exposure times could be up to 20 minutes. For my work, I used a camera on a Zeiss electron microscope which captured the image created by electrons, not photons. Exposure times were in the neighbourhood of seconds, not minutes and the negative plates were considerably smaller, only 2.5 cm by 2.5 cm in size, and made of plastic, not glass.

Pia worked almost a century before I started studying pictures from the electron microscope, yet the chemistry was the same.

After I processed my negatives, I used a photo enlarger to create positive images from the negatives. In my work, I had to experiment with light intensities and exposure times since using an electron microscope camera was not as automatic as the modern film camera. The amount of illumination depended on the specimen in the electron microscope, and specimens varied greatly. Capturing an image was not guaranteed, and to ensure proper exposure, I needed to adjust electron beam intensities and exposure times. Only after I developed these negatives in the darkroom was I assured that I obtained a successful image. Experience certainly was essential when estimating how much time a film should be exposed to get a negative image imprinted on the film.

During the early days of film photography, Pia also had the same experiences with light exposure and film sensitivity. As with me, it was from his experience that he knew that light intensity and exposure times had to be correct or his negative would either be underexposed and show no image after being treated by the developer solution, or overexposed so that the image was completely white showing no detail at all.

When he received permission to take the first photograph of the Holy Shroud, Pia set out to prepare for the event. It was not going to be easy. First of all, the Shroud would be displayed in a frame that was located several feet off the ground at the top of an elegant marble altar constructed in the 1600's for this purpose. This height allowed onlookers an unobstructed view of the cloth, but it meant a scaffolding would have to be designed and erected so that the camera would be level with the cloth. Second, the pictures would be taken in the chapel and there would be no sunlight to help illuminate the cloth. Artificial lighting would have to be used. Third, electric lights were in their infancy, and although a few homes in Turin were wired with electricity, Pia had never worked with this technology before.

And in addition to these technical difficulties, timing was a limiting factor. Since the cloth was seldom brought out for display, and would be exhibited for only a few days, there would be an immense pressure from pilgrims to see the cloth so that the amount of private time devoted to photography would be quite limited. Pia was allowed 2 hours alone time with the cloth, but only after it was taken from its reliquary, and put in its display frame above the altar following the appropriate ceremony, such as the required mass. To be allowed to take the first picture of the Shroud was an immense honour; but to take this first picture of the Shroud required careful planning. It was not a matter of simply clicking the shutter of the camera and capturing the picture.

When Pia was assigned the task to photograph the Shroud, little did he realize that he was about to perform the very first scientific experiment on this cloth. Nonetheless, his experience in photography ensured that all the proper precautions were taken, and all the variables accounted for. He had only this one opportunity since after this exposition, it would be returned to its box and possibly not displayed again for many decades. Since his apartment in Turin was not equipped with electric lights, he obtained access to electric lights in a nearby scientific lab in order to compare pictures taken in sunlight to pictures taken under artificial lighting. He also had constructed a scaffolding that could be erected and dismantled quickly thus ensuring that the view of the Shroud would only be obstructed for a very short period of time. And from eye-witness reports of previous exhibitions, he recognized that the image on the Shroud was probably of a very low contrast, and would not readily imprint on the negative. Therefore, he also took pictures of the altar and surrounding artifacts in the royal chapel as test runs to assure himself that his equipment would capture the image.

Pia also knew that each of the two electric floodlights used to illuminate the Shroud would be powered by its own generator,

and that these independent power sources would produce different amounts of electricity. This, in turn, could result in an uneven illumination of the cloth. In addition, the lights would flicker, and this would have an adverse effect on determining the correct length of time the negative should be exposed. To account for the uneven illumination and the flickering, Pia obtained translucent glass filters to be placed over the floodlights. These glass filters would diffuse the light and more evenly illuminate the Shroud.

Then the moment arrived.

The scaffolding was quickly assembled, the camera put in place, and the two electric flood lights turned on. Problem. Pia did not anticipate what heat could do to the plate glass filters. When placed too close to a high heat source, such as these floodlights, the plate glass cracked about 10 minutes into his planned 14 minute exposure time, and the damaged glass filters were of no use. There was no time left to obtain more filters, so he had to dismantle his equipment and try again. His first attempt was a failure.

Three days later, the crowds were cleared and once again Pia was back in the chapel. From the experience of his first attempt, he had acquired electricians to steady the current for the electric lights, and this time he would place his new glass filters further from the lights to prevent them from cracking due to the heat. However, new obstacles were placed in his way. First, he discovered shortly before he had access to the Shroud that the bolts used to hold together the scaffolding had disappeared. Second, a thick piece of plate glass now covered the entire cloth. This was installed at the request of the royal family to help protect the Shroud from the smoke of candles and the smell of incense, as well as from the heat generated by the electric lights. For Pia, the glass acted like a mirror which reflected the other lights and objects in the chapel. Fortunately, the bolts could be replaced with wires and rope, and the camera could be positioned a bit further

away from the Shroud to avoid the reflection of objects in the plate glass.

With camera in place, and the illumination from the electric lights working well, Pia opened his camera shutter at 11 pm on May 28, 1898, for 14 minutes, undoubtedly praying that nothing unforeseen would occur during this attempt. And nothing did. Then he completed a second exposure of 20 minutes, and was now ready to take his plates to his darkroom to see if he had successfully captured an image of the Shroud. And if a negative image was visible on his plate, he would then create a photograph from this negative to determine how well his camera had performed. For any regular picture or art work, the image on the negative would be hard to discern due to the reversing of the light and dark, so the positive print would need to be viewed in order to determine the true quality of the photograph.

Accounting for the time it would have taken Pia to hasten from the cathedral to the darkroom in his apartment, then to place his plates in the solutions for processing, the image on the plates should have become visible shortly after midnight on the morning of May 29. Pia was alone with his work, and was relieved to see, appearing gradually on his negative plate in the developer solution, a negative image of the Shroud. He had been successful! A picture was captured. The next step would involve the use of the photo enlarger to shine light through the negative unto photographic paper in order to produce the positive and to judge the quality of the print.

Something Pia saw stopped him in his tracks.

Pia instinctively knew that the negative was always less comprehensible than the positive, but what was becoming visible on his plate as it soaked in the chemicals was anything but the typical negative image. Instead of something incomprehensible, he saw a clear sharp picture of the face of a man!

As Pia was later to write, "Shut up in my darkroom, all intent on my work, I experienced a very strong emotion when, during

the development, I saw for the first time the Holy Face appear on the plate, with such clarity that I was dumbfounded.”<sup>59</sup>

But why was he dumbfounded? It is because for the very first time ever, after creating thousands of photographs, he had taken the picture of a photographic negative. Now on his negative plate, he could see the clear picture of the positive that the negative was made from. He knew immediately that the image on the Shroud was not a picture in any ordinary sense. It was some unusual form of photography that created on the cloth a negative image centuries before film photography was ever imagined. In every instance previous to this experience, when Pia made a photograph, he took the negative captured on his photographic film in his camera, then shone light through that negative to get the positive. This was the very first time he experienced seeing a real life image to be the negative so that the negative captured by his camera appeared as the positive.

This was irrefutable scientific proof that the image on the Shroud was *not* a painting.

No artist prior to Pia would have had the knowledge, foresight, chemicals, nor technology, to create an image in a negative format. Today, artists can create a picture in which the light and dark regions in real life are reversed, thus rendering a negative which becomes the positive when it is photographed. But such renditions still appear as paintings or artwork and not photographs. Not only did the image on the cloth lack paint and brush marks when seen in real life, which authenticated the relic throughout its history, the image was now seen to have been created as a photographic negative. It was not only an incredible scientific discovery, it was inconceivable that any human, no matter how gifted they might have been, could have created such a photographic phenomenon. In Pia's mind and heart, this image could only be that of Christ.

---

59. John E. Walsh, *The Shroud: Is this the holiest of relics or the greatest of forgeries?* (London, UK: W.H. Allan & Co. Ltd, 1979), P. 19. First published in 1964.

Up until Pia's discovery that the image on the Shroud had the properties of a photographic negative, skeptics could maintain that this relic was the work of a clever artist. This criticism no longer carried weight. It was completely meaningless. Not only was it impossible to imagine that an artist could use a medium without leaving any traces of paint or brush marks, that artist also had to know about photography, and was able to create a negative image which, when photographed several hundred years after he created it, would produce a perfect positive of a scourged and crucified man. Some skeptics still claim that the image could have been produced by a forger using some forgotten technology, but those like Pia who are willing to believe, need no more evidence that it was not created by human hands.

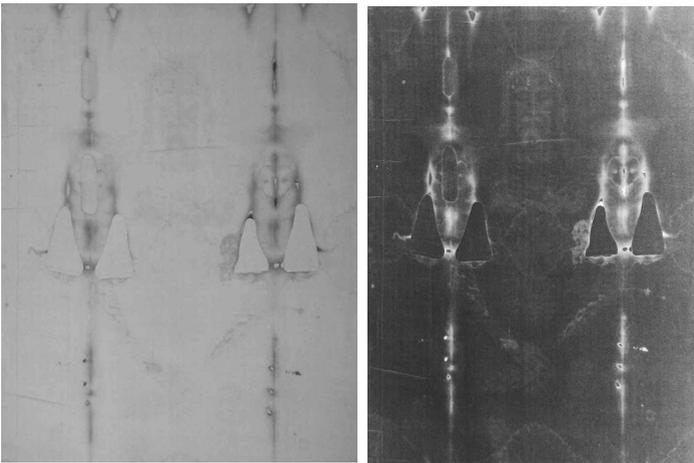
With Pia's knowledge that photography works by light interacting with chemicals on his glass plates, it was intuitively logical to suggest that some form of light had discharged from the surface of the body at the moment of the resurrection and that this burst of energy was just strong enough to imprint a beautiful and impressive negative image of the body of Christ onto his burial shroud. The positive in negative form was the naked, reproducible, unequivocal fact, and the explanation of this fact created a lasting impression on Pia's very soul. As one historian noted:

All his life Pia was to remember that moment, speaking of it as a great glory. An emotional man under his old-fashioned reserve, his eyes were often wet after relating the details to a spellbound audience. More than once in these talks, he spoke of the 'trepidation' that had seized him and made him tremble.<sup>60</sup>

---

60. Ibid., p. 19-20.

But not all people were equally persuaded. Rather than accepting the scientific fact that the image had properties of a photographic negative, this fact and the photographer who discovered it, were brought into question.



The poor contrast positive image on the Shroud (left picture) turned out to have the properties of a photographic negative (right picture) clearly indicating to Pia that this image was not a painting. Pia captured on his negative a clear and distinct picture of a crucified man. To counter this irrefutable scientific proof that the image was not painted, skeptics claimed Pia's photograph was flawed or even faked.

## Chapter 9

### The Aftermath of the First Photograph

From my own experience in biological research as well as documenting the scientific evidence for or against different theories of origins, I have become acutely aware of two types of individuals. There is the one who *wants* to believe; there is the other who *refuses* to believe. And doubtless to say, every human being with any experience in religion or science has had to make a choice either to believe or disbelieve a theory used to explain a particular scientific or biblical fact. Pia, first of all, believed in his technology. He swore by it. The image on the Shroud was a photographic negative, not a painting of any sort. Pia already believed that Jesus was crucified, died, but on the third day, rose from the dead. For Pia, and many Christians alike, this negative image was that of Christ, and it provided irrefutable scientific evidence that Jesus was who he said he was. But not so for those who refuse to believe.

After a flurry of media attention which centred in Europe, doubts started to be expressed. As for the English-speaking world, by the time the news had filtered to newspapers in England and the US, so much non-truth had been added to the story that it made very little sense. The skepticism was also

fuelled by the fact that it was difficult for newspapers to obtain reproductions of the image, and many had to substitute with crudely drawn illustrations that were totally inaccurate. Ironically, this situation came about as a result of how the photographs were issued by those who had the authority to send them out.

To ensure the authenticity of the prints of the cloth, a copyright of the Pia photograph of the Shroud was registered in Turin, and only Pia and a small staff were entrusted with its reproduction. Further, each print had to have two official seals, one from the Archbishop and the other from the Sacred Art Commission which appointed Pia the task of photographing the Shroud. This bureaucratic mechanism ensured authenticity, but it prolonged the time between hearing of the news and seeing the photograph, and effectively dampened the enthusiasm.

Besides the misinformation being printed to cash in on Shroud mania, others wishing not to believe started to question if the Pia negative showing a positive image was fabricated due either to the technique he used, or to a method by which he faked the positive on the negative. For a man who prided himself in the honesty of his work, these accusations of incompetency and fraud were very demoralizing. On June 19, 1907, almost 10 years after he took the photograph of the Shroud, he wrote:

It is evident that I have never had the pretension of "inventing" any special method nor used any tricks, like some people wish to believe. Of very great use to me indeed was my long experience—even if that of an amateur—in reproducing paintings and coloured objects, very often in bad conditions of illumination, that made possible a notable exposure.

I can also give my word of honour that neither the negatives nor original plates nor the following reproductions intended for the printing were in any way retouched. In support of such a categorical declaration I could present the evidence of various people that, kindly interested in my work, had the opportunity to observe the original negatives the day after their impression.<sup>61</sup>

Besides giving his word, which in the early 1900's was considered the most significant defence a respectable gentleman could offer, he also reasoned that other claims of dishonesty did not have evidence to support them. For instance, if the image of the Shroud were suspended on a medium through which light could penetrate, then any light which backlit the cloth would give the image a negative appearance. Although the cloth was not available for direct examination, being placed back into its storage box in 1898, it was known as a fact that the Shroud had attached to its back a sturdy cloth to add support. This additional layer of material would not allow light to pass through it to produce the negative effect. As he argued:

It has also been said that the photograph was taken "through transparency" but this remark hasn't any foundation because everybody knows that the Holy Shroud, owing to its bad conditions of preservation, due to the work of the time and to the various accidents,

---

61. Portions from an article entitled "Memory" that Secondo Pia wrote in French for Arthur Loth, who published it in the volume *La Photographie du Saint Suaire de Turin*, printed in Paris in 1907 (p. 17-21). Information from [www.shroud.com](http://www.shroud.com), accessed May, 2014.

is lined with a cloth of red silk that doesn't allow any transparency.<sup>62</sup>

Critics also suggested that the negative image may have been created because Pia had overexposed the photograph. In the negative of an overexposed photograph, most of the negative would appear dark, and Pia's negative picture of the Shroud certainly is primarily dark. To address this concern, he provided for evidence an additional picture which he had taken of the altar in the chapel prior to setting up the scaffolding required to take the picture of the Shroud. This other picture was taken further away from the altar, and besides the Shroud, it included the angels on either side of the altar. Neither figure of the angels showed up as a positive in the negative of the picture. If the negative property of the image on the Shroud were created by some fluke associated with overexposure, these angels, and not just the image on the Shroud, should also have appeared to be positives in the negative. They did not. As he wrote:

To provide an explanation to all the critics, one claimed the "positive" result of the plates was caused by an "overexposure" caused by an unexpected chemical phenomenon or some special procedure during the development.

Apart from what I declared about the normal development procedure I followed, the observation of the "overexposure" is very clearly belied by the first original photograph realized for trial and of which I send a copy to your Lordship. In this photograph, besides the Holy Shroud, is also reproduced the frame and a part of the altar on which the Relic was exposed. Now it is evident that if an

---

62. Ibid

"overexposure" of the plate occurred, then the two angels set at its sides would have appeared in "positive" like the Holy Shroud, that is white and therefore appearing black after the printing. It is not possible to conclude that the "overexposure" occurred only in a part of the photographic plate.<sup>63</sup>

Regardless of this overwhelming historical and scientific evidence to refute the critics, believing the image on the Shroud was a photographic negative created by the resurrection event, was simply too fantastic for the sceptic to accept. It was easier to believe that the image was a painting, and any evidence to the contrary must be attributed somehow to problems with the photographic technique employed by Pia. Then, to the relief of sceptics, some historical evidence was discovered to refute Pia's photographic evidence. Even though the negative property of this image clearly supported the claim that it was not a painting, this historical evidence overshadowed the science, and allowed sceptics to breathe a sigh of relief.

*Chevalier and the Pierre d'Arcis Memo:*

The Shroud of Turin has always had its high-ranking sceptics. In 1898, one well-known and well-respected skeptic was a 58 year old French priest, Cyr Ulysse Chevalier (1841-1923).

Shortly after seeing the Pia photograph, Chevalier wrote articles in 1899 and 1900 which provided the historical evidence to reject the photo-negative theory based on Pia's scientific evidence. This historical evidence also carried considerable weight to sway public opinion since photography as a technology was poorly understood by the average person, and Chevalier was deemed a giant in his academic field of research, the history of

---

63. Ibid

medieval Europe. In today's terms, he had reached celebrity status.

What Chevalier discovered is still being used by modern day skeptics of the Shroud. He uncovered a document written in 1389 by Peter d'Arcis, Bishop of Troyes, France, to the Dean of Our Lady of Lirey Church, ordering the Dean to shut down an exhibition in which a linen cloth was being honoured as the death shroud of Christ. Bishop d'Arcis may have had ulterior motives for having this exhibition terminated since it was drawing large numbers of pilgrims to Lirey, and leaving other parishes in his diocese, particularly his own, impoverished. Chevalier discovered that d'Arcis made several attempts to stop the exhibition, and even claimed that 35 years earlier, a previous bishop, Bishop Henry of Poitiers, said that this cloth was a fake and that the painter who created it, had confessed to him.

No evidence exists to substantiate d'Arcis' claim, and if Bishop Henry of Poitiers did make this accusation, it was not in keeping with what we know about his actions concerning the cloth. In fact, there is evidence that Bishop Henry fully supported the authenticity of the Shroud being shown at Lirey. If the information reported by Bishop d'Arcis is accurate, i.e., a painter had confessed to the forgery, then it is very possible that Bishop Henry was referring to a painted replica of the original cloth rather than the Shroud itself since many were created and some may have been displayed as the real thing. But to support his own beliefs, d'Arcis would have been tempted to link a painted forgery to the real thing.

When neither the Dean nor Geoffrey II of Charny, the owner of the Shroud at that time, complied to his demands, d'Arcis appealed to the King of France. The affair had escalated from an internal church matter to a civil suite. The King ordered the cloth to be turned over to d'Arcis, and the bailiff of Troyes arrived at the church to confiscate it. One might wonder what exactly occurred at this point, but the Dean refused to give up the

Shroud, and the bailiff left empty-handed. In this conflict between the state and the church, the church was not about to concede and a stalemate ensued.

To circumvent this stalemate, Geoffrey II approached the highest authority he could. He appealed directly to Pope Clement VII at Avignon. The Pope ruled against d'Arcis and in favour of the exhibition with the stipulation that the pilgrims were told that this cloth was a copy or representation of the cloth of Christ. It was to be officially considered an icon, not a relic. Interestingly, this approach taken by Pope Clement VII continues in the Roman Catholic Church to this day. The church considers the image to be an icon to help focus our thoughts on Christ, but it is left up to the individual to believe if it is a genuine relic of the crucifixion. However, as John Walsh describes, "d'Arcis did not stay quiet."<sup>64</sup>

In response to Pope Clement's order that he remain silent on the issue, d'Arcis wrote the infamous memo to the Pope describing, in full, what he believed to be a hoax being carried out by the Dean of the church at Lirey. He was livid, and his emotions ran high, as seen by the manner he coined his memo.

Some time since in this diocese of Troyes, the Dean of a certain collegiate church, to wit, that of Lirey falsely and deceitfully, being consumed with the passion of avarice, and not from any motive of devotion but only of gain, procured for his church a certain cloth, cunningly painted, upon which, by a clever sleight-of-hand was depicted the twofold image of one man, that is to say, the back and front, he falsely declaring and pretending that this was the actual shroud in which our Saviour Jesus Christ was enfolded [...].<sup>65</sup>

---

64. John Walsh, *The Shroud*, p. 41

65. *Ibid*, p.41.

He went on to claim that there existed proof that the cloth was a hoax:

Eventually, after diligent inquiry and investigation, he [Bishop Henry of Troyers] discovered the fraud and how the said cloth had been cunningly painted, the truth being attested by the artist who had painted it, to wit, that it was a work of human skill, and not miraculously wrought or bestowed.<sup>66</sup>

In his final reply to this curious affair at Lirey, Clement VII wrote in 1390 to Geoffrey II to remind him under what conditions the cloth could be shown, and to d'Arcis ordering him to once again keep silent on the matter but with the added warning that any further discussion would lead to his excommunication. The Pope also wrote a third letter to other individuals of high ranking in the region to ensure his decision was enforced. No other words were recorded in response, and Bishop d'Arcis died in 1395 leaving no evidence to support his claims.

Skeptics, on the other hand, are not influenced by the warnings of a pope from a church that has lost any relevance to them, nor the lack of corroborating evidence. Like Chevalier, they can still base their opinions on these events that surrounded the Lirey affair, and assert that the historical evidence deems the image on the Shroud a painting, despite the clear photographic evidence against this view.

What eventually transpired about the science and the Shroud after this first scientific investigation is a pattern that has been followed throughout the more recent history of this mysterious cloth. First, there is a curious discovery, or study, that supports the authenticity of the Shroud, then with considerable media coverage, it is followed by a claim which rejects the Shroud as a fake. Pia's scientific evidence showing the image to be a photo-

---

66. Ibid, p.42.

negative was exciting to those who were willing to believe, but it could not create this faith in those who refused to believe. Instead, it generated a feeling of resentment, bitterness or even foreboding. Those who could accept the authenticity of the cloth did so quietly with little media coverage; those who could not were so relieved to find a reason to declare the Shroud was a fake that their enthusiasm was almost unquenchable.

Chevalier's reports essentially extinguished the enthusiasm created by Pia's photograph, and all this had occurred even before the rest of the world had full access to all the facts. Could this really be a miracle captured on cloth if the photographic techniques employed by Pia allowed him to inadvertently create this positive or allowed him to fake this positive in his negative? And is this really the cloth that covered Christ when there is in recorded history the alleged confession of the artist who was to have created this fake as a painting?

Pia's work could easily be verified simply by taking another picture of the Shroud. Unfortunately for Pia and science, after its brief showing in May 1898, the Shroud was once again placed into its reliquary and locked in a well-secured compartment within the marble altar. It was not to be unfurled again until 1931, 33 years later when Pia had reached the age of 75.





To capture the first photograph of the Shroud, Secondo Pia (top right) used a camera very similar to the one displayed here. A large glass plate containing a layer of light sensitive chemicals served as the negative on which the image was focussed. As seen in the lower right photograph of the back of the camera, a bellows-designed box allowed the photographer to focus the image on the glass negative by changing its position in relation to the lens. This particular camera is located in a novelty shop in the holiday town of Port Carling, Ontario, Canada.

## Chapter 10

### Another Science: Forensics

The academic community in Europe, following the opinions of Chevalier, either openly rejected the authenticity of the Shroud, or said it was a possibility, but only a remote possibility. It did not come out in support for this being the cloth that wrapped the body of Jesus in the tomb. Nonetheless, the image of a crucified man seen in the negative prints taken by Pia caught the interest of two scientists in Paris, France. For these men, it was not a matter of whether or not Pia faked the positive image of the negative; their attention was drawn to the appearance of the body on the cloth, a body that showed the signs of being scourged and crucified. These men, Paul Vignon and his supervisor, Yves Delage, began to apply a different science to the image on the cloth, the science of forensics.

Delage was an agnostic, but unlike many in the academy, he did not completely reject the Shroud as a painting, based on the historical data discovered by Chevalier. Careful examination of the image on the Shroud, which was now possible by looking at Pia's photograph, ruled out the possibility of a painting, as has been the case throughout history whenever the cloth was examined firsthand. Vignon, a devout Roman Catholic, was aware of these photographs by Pia, but unlike Delage, he chose to

ignore them like so many others who placed their confidence in the educated opinions of Chevalier. But Delage continued to be disturbed by this image.

Ironically, Delage, the unbeliever, was so uneasy with dismissing the image as a painting, that he challenged the younger Vignon, the Catholic, to devote some time to investigating the anatomy of the man on the cloth. If this were a painting created by a clever artist, and not the genuine photograph of a real human scourged and crucified as Christ was, then this painter would have inadvertently created an anatomical feature not in keeping with reality. In other words, the science of forensics which gathers and examines information from the past, could tell whether the image was that of a real man, or one created from the imagination of the painter. Taking up Delage's challenge, Vignon then set out to catalogue the injuries pictured on this image and to determine by experimentation if they conformed to reality.

Vignon was also independently wealthy so funding this project was not a limiting factor, although Delage's offer to put his laboratory at the disposal of Vignon was certainly welcomed. To begin his scientific investigation on a solid foundation, Vignon travelled to Turin to meet personally with Pia. Pia provided him with high quality copies of the prints on glass. Vignon also discovered that two unauthorized pictures of the cloth were taken by two other men. Indeed, King Umberto's fear that pictures could be taken of the Shroud during the 1898 exhibition, and distributed without his control, was in fact real. These photographs were not sanctioned by the Archbishop nor the Sacred Art Commission, but the photographers who had access to the Shroud – one a priest and another a police officer – had no intention of distributing them. Moreover, the quality of these photographs was poor. But they did show signs that the positive image on the cloth was actually a negative. For Vignon and Delage, this was important corroborating evidence that Pia's

discovery of a positive image on his photographic negative was genuine, and not the result of an accident or a deliberate attempt to make the negative captured by the camera appear as a positive.

No longer dismissing the Shroud as a painting, Vignon carefully compared the positive and negative images of the Shroud that he obtained directly from Pia. As is the case for anyone willing to observe the image with a critical eye, he found no evidence that the image was painted.

On the other hand, some skeptics who did accept the Pia's photograph as being genuine, suggested that any oil painting could become a negative under the appropriate conditions. How could this have happened? First, a painting of the image is done in the usual way, and any paint used for the body would have had a mixture of chemicals including various dyes and heavy metals. Then, during the fire of 1532 when the Shroud experienced intense heat and suffered considerable damage, the paint would have undergone a chemical alteration. Some of the dyes and solvents would have evaporated off while others would have remained leaving in the end an image in which the light and dark hues were reversed. The brush marks themselves may have become invisible. This suggestion assumes that the image was originally an oil painting, and only after 1532, did it take on its present form. Vignon doubted that the pilgrims prior to 1532 would have been fooled into believing that the image was not painted, if in fact, it was a painting. Nonetheless, he devised an experiment to test if the image could have been painted in the first place.

Not only was Vignon a scientific assistant and associate of Delages, he was also an accomplished artist with his artwork displayed in a Paris art gallery. On a linen comparable to that of the Shroud, he painted a portrait having the similar flesh tones that would have created the present image on the Shroud if exposed to heat. When the paint dried, he then folded the cloth. In the folds, the paint fragments flaked off destroying the picture.

Since the Shroud was known to have been folded and unfolded several times in its history prior to the 1532 fire, it could not have been an oil painting, and hence, the negative was not created as a result of the 1532 fire. Possibility number one was ruled out.

Another possible explanation of the image was direct contact with the body. Someone had taken a corpse, covered it with a substance that would adhere on a linen cloth, then pressed that cloth over the body. The areas that made contact would pick up the colour and would appear dark whereas the other areas would appear light. Photographing such an image would then create a positive in the negative since the actual image created by contact would have the properties of a negative. The experiment to test this possibility was elegantly simple but not altogether unfamiliar. It is akin to using a stamp covered with ink then pressing the stamp on a piece of paper. In the contact theory, the paper is brought to the stamp; the body is covered with a pigment then the cloth is pressed against it.

To test this hypothesis, Vignon became part of the experiment. He covered his head and beard with coloured chalk, then let two colleagues from the science department place and press a linen cloth over his head. The results were impressive, but fell far short of the clarity and realism of the face on the Shroud. In fact, placing a cloth over a rounded object like the face, then spreading that cloth out, tended to distort the face making it look more like a cartoon than a photograph. Possibility number two was ruled out.<sup>67</sup>

---

67. As described here, the stamp-like creation of the negative image of a face on a cloth can be created as Vignon had done by covering his own face. In the 1990's, the same logic was used by the stage magician, Joe Nickell, to suggest that a forger pressed the cloth against a bas-relief (a sculpture with features slightly higher than the background), or as suggested by the forensic pathologist Emily Craig and the textile expert Randall Bresee, the forger pressed a dry-powder portrait against a cloth, a technique in printmaking called burnishing. (See Ian Wilson, "The Blood and the Shroud." p.10) These more recent attempts merely replicated what Vignon had done, but rather than recognizing that these attempts had fallen far short of producing the quality of the image on the

While Vignon was experimenting with ways to create the image, he also carefully checked the anatomical details. He found no reason to suspect that the image on the cloth was anything other than a true picture of a scourged and crucified man. He also realized that the image on the cloth was not entirely due to contact since portions of the cloth that should not have touched the body had the image of the body on it. This observation could only mean that some of the image could have been created by contact, but the rest had to be created by projection, perhaps by something emitted by the body. He also realized that parts of the body which would have been in direct contact, or within 1 cm of the cloth, left an imprint, but parts further than 1 cm away did not. In other words, whatever phenomenon created the image, the intensity also depended on the distance from the cloth. This was the contact-projection theory. But what could this something be?

Vapours. A vapour is a substance in its gas form, with the most common everyday example of a vapour being water vapour. Many solid and liquid substances can also exist as gases, and some of these substances could even interact with a substrate to etch a permanent image on that substrate. To test his contact-projection theory, Vignon chose as his substrate, representing the cloth, a photographic emulsion. As for his substance that could give off vapour to interact with the photographic emulsion, he used zinc. This was not an unusual combination since such chemicals were tested in the early stages of photography when this science was being explored.

Having coated an object with zinc, then exposing a photographic emulsion to that object in the dark for 24 hours, Vignon got results proving that the contact-projection theory was a possibility. However, what could be given off by the body that would in turn create a negative on a linen cloth? Although it

---

Shroud, and are not able to explain how the image was forged, these skeptics were encouraged that their reproductions showed some of the characteristics of the Shroud.

seems he never had the chance to experiment with this theory, it was possible that the sweat covering a scourged body could give off a large amount of ammonia from the fermentation of urea in the sweat.<sup>68</sup> This ammonia may have interacted with a chemical found in the aloes that were used to cover the body of Christ, and had adhered to the linen cloth, thus sensitizing the cloth to the ammonia vapours. Possibility number 3 in theory could not be ruled out.

Vignon may have thought of testing this theory, as he did the others, but he was satisfied enough with this natural explanation for the creation of the image to turn his attention to the blood stains on the cloth and the injuries incurred by the victim. Vignon observed that every detail of the blood stains clearly followed the pattern of real blood, and even provided further evidence that this image could not have been created by a medieval artist. One fact was the appearance of the blood running from the wound in the wrist along the forearm towards the elbow. If an artist painted this, the blood flow would be continuous from the wrist to the elbow, but there is a portion missing next the wrist. The absence of blood at this point suggested that the blood stains were created as blood came into direct contact with the cloth. Since the cloth would not have touched this region of the wrist, then the stain was missing here. Vignon felt that the chance of a medieval artist accounting for this fact was insurmountable.

In addition to the flow of blood along the arm, Vignon carefully studied the wounds created by the scourging which were most prominent on the back, buttocks, thighs and calves.

---

68. John Walsh, "The Shroud," 1963, p. 60. "The human body contains urea. Under fermentation, urea is completely transformed into carbonate of ammonia, which regularly emits ammoniacal vapours. But how could a body be *coated* with urea? Through sweating. Normal sweat contains an elaborate mixture of chemicals, among them urea. And although normal sweat contains only a small amount of urea, in *morbid* sweat, the increase is astonishing. [...] A man in crisis of pain, a man who had been tortured for any length of time before death would have been bathed in perspiration highly charged with urea."

Dumbbell-shaped marks were clearly evident, and Vignon discovered that these marks corresponded to the design of the Roman flagrum. This instrument of torture had imbedded in its ends pieces of metal or bone which gouged out the skin as the whipping was administered. In addition, the pattern they made was consistent with two soldiers standing on either side of the victim. How could a forger account for this fact?

Furthermore, the blood flowing from the wound in the wrist indicated that the nail was driven through the wrist, and not the palm of the hand. Since medieval depictions of the crucifixion invariably have the nails through the palms, this image was not created by a medieval artist unless they knew something about human anatomy that only the Romans would have known. If the nails are driven through the palms and not the wrists, there is not enough support to hold the arms to the cross. The victim could pull his hand away from the nail, or the weight of the body itself would cause the nails to tear through the fleshy part of the hand. Again, no medieval forger could have accounted for this. It also occurred to Vignon that although the hands were folded over the genitals as if to provide some modesty, the body was clearly naked and the buttocks completely visible. Here on the cloth was the picture of a completely naked Christ. He knew of no single medieval painting in which the Christ was shown to be completely and absolutely, naked.

As noted already, Vignon had more than an average knowledge of and appreciation for art. This knowledge made him aware of the fact that many of the portraits of Christ, especially those done by Byzantine artists,<sup>69</sup> all seem to have features in common with the Holy Face, as if they were based on the same original picture. Some features are seen in most men, and would not necessarily be based uniquely on the Shroud, such as the

---

69. Byzantine refers to the Byzantium Empire started by the Greeks in the seventh century BC and taken over by the Romans in 196 AD. Its capitol was Byzantium which became Constantinople and is presently Istanbul, Turkey.

three-sided U-shaped square between the eyebrows. But others can only be attributed to the image of the face on the Shroud, such as the two strands of hair from the hairline in the middle of the forehead, the forked beard, and the transverse line across the throat. In total, Vignon listed 15 identifiable marks now known as the Vignon Markings.

The medieval historian, Chevalier, may have uncovered the letter by d' Arcis in which d' Arcis claimed that the Shroud at Lirey was a painted forgery, and that the painter had confessed, but the Vignon markings are found on portraits of Christ that appear much earlier than the claimed forgery. Since these markings could be identified in portraits created before the Middle Ages, they provide forensic evidence that the image on the Shroud must have been witnessed long before the letter written by d' Arcis. That Byzantine artists were able to see the image on the Shroud is attested by the report from the crusader knight, Robert de Clari, who saw in the capitol of the Byzantine Empire, Constantinople, that a cloth bearing the likeness of Christ was regularly displayed.<sup>70</sup>

Following the reports from Chevalier in 1899 and 1900, enthusiasm generated by the Pia photographs for the Shroud fell off considerably. With the work of Vignon, encouraged by his supervisor and well-respected scientist, Yves Delages, the Shroud's authenticity was once again being considered by the scientific community. But for the most part, the views of Chevalier held the day.

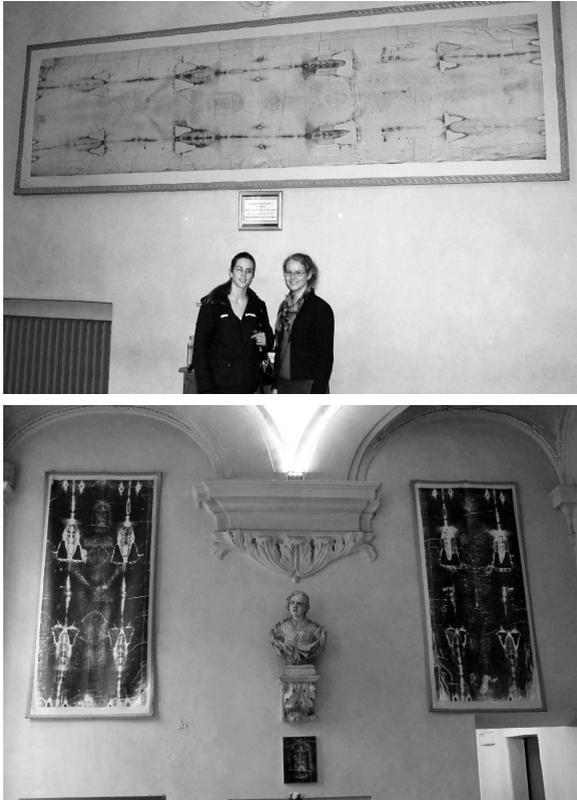
Without being able to reproduce Pia's results by taking another picture of the Shroud, the medieval forgery theory of Chevalier continued to satisfy the minds of most academics, even

---

70. Robert de Clari (b.1170, d.1216) reported in 1203 that the cloth bearing the likeness of Christ was in Constantinople, in the church of Blachernae: "Where there was the Shroud in which our Lord had been wrapped, which every Friday raised itself upright so one could see the figure of our Lord on it." From, "The Conquest of Constantinople," University of Toronto Press, 1997.

though Vignon's forensic evidence for its authenticity was undeniable. Then finally, after over a thirty year wait, the Shroud was to be on display again. This time every effort would be made to produce the finest quality photograph that photography was able to make. Pia waited patiently.





If a tourist goes to Turin expecting to see the Shroud, they will be disappointed. In 2002, the Shroud was placed fully stretched out in a specially designed preservation container which remains veiled. It is only unveiled at the request of the Pope. As these two Redeemer University College students in the top photograph discovered in 2012, reproductions of the Shroud are housed in an interpretation centre within a short walking distance from the Shroud. These reproductions were made from the photographs taken by Giuseppe Enrie in 1931. Julia Wybrow took the top picture of Janine Eygenraam and Sarah Mork, and Sarah Mork took the bottom picture

## Chapter 11

# The Science Reapplied

If you were able to fall into a state of hibernation, much like Rip Van Winkle, and sleep for a period of 30 years, you may awake to a very different world. And if you were the Shroud, that is exactly what you would have experienced. After its showing in 1898, with the accompaniment of considerable ceremony and ritual, the cloth was removed from its frame, folded, placed in its reliquary, and returned to a sealed compartment in the alter located in the Royal Chapel of the Turin Cathedral. There it stayed untouched for over 30 years. During this time, Europe and the world had experienced the war that was to end all wars, the Spanish flu pandemic had affected over 500 million people throughout the world killing 50 to 100 million, and Italy was still suffering from the devastating stock market crash of the 1920's and the effects of the Great Depression. The face of the world had certainly been changed.

In contrast to these historical calamities, technology had made great strides. Electricity and electric lights were now commonplace, communication by telephone was a necessity rather than a luxury, travel started to include planes, in addition to boats, cars and trains, and petroleum rather than whale oil or coal was beginning to fuel the world. In photography, the development of plastic film and an easy-to-use camera by Kodak,

made it possible for everyone to become a photographer. The Kodak slogan, "You push the button, we do the rest" was well known. By 1931, motion pictures were the main form of public entertainment, and talkies had replaced silent films.

The Shroud was awakening to a world which had changed, and this world was looking at the Shroud with quiet anticipation. Would a new photograph taken under strict conditions for best exposure and using the most advanced optical techniques confirm or deny the photo-negative property of the image on the Shroud discovered by Pia?

Regardless of the length of time between exhibitions, whether 10 or 50 years, or how long the Shroud was on display during any of these exhibitions, there has always been one constant within recorded history. The Shroud is not under the control of a committee or official church or government agency. It was always the property of a single individual, whether that was Geoffrey of Charny in the 1300's, or King Umberto of Italy, in the 1900's. This fact may explain why there appears to be an inner circle of people who were given the opportunity to study the cloth. An owner of any object is less likely to trust people he does not know to handle his most precious of possessions.

Secondo Pia was not a professional photographer, although a good amateur, and his connections in Turin were likely responsible for him being chosen to take the first official picture of the Shroud. Vignon may have been French, but in his youth he shared his love of mountaineering with an Italian priest named Achille Rati. Rati became Pope Pius XI who was also a firm believer in the authenticity of the Shroud. With such connections, it is understandable why Pia shared his work freely with Vignon. And in 1931, connections may not have played a big role in who did what, but these connections were there nonetheless.

In contrast to the 1898 exhibition, in 1931 the King readily gave permission for creating new photographs of the Shroud. Photography was no longer a mystery, and people were far more

comfortable with the thought of exposing the Shroud to the lights and camera. But again, the committee organizing the event called upon one of their own to take the new pictures. This honour was given by Cardinal Fossati, chair of the Exposition Committee, to Giuseppe Enrie of Turin. Enrie ran a successful studio in Turin, and had been editor of an Italian photography magazine, as well as president of the photographic society. Awarding the honour to Enrie may appear partisan, but he did have the technical experience, and in the end, his reproductions proved to be superb. Interestingly, however, he received advice from two people, and these were none other than Secondo Pia, now 75 years old, and the 65 year old Paul Vignon. Although unofficial, there certainly appeared to be an elite group who determined how science worked with the Shroud. Pia and Vignon were even in the darkroom as Enrie developed his first plates.

As noted, these plates were superb. Enrie's success was not only aided by technical advances in the field of film photography, but also by taking into account Pia's experience years earlier. While the Shroud was in its display frame at the top of the marble altar, Enrie worked without the cumbersome scaffolding by using a much larger tripod to hold the camera and a ladder to stand behind the camera. In addition, the Cardinal had the display frame containing the Shroud brought down from the altar so that Enrie could get the best focus possible. Enrie's darkroom was also setup within the cathedral, and he could check for proper exposure in just a few minutes. The controversy over the legitimacy of the Pia 1898 photographs was clearly in mind during Enrie's attempts, and it seemed that every effort was made to vindicate the elder photographer. And he was vindicated, indeed.

Upon completion of his work, Enrie's photographs were presented to a panel of five photography experts who attested to their validity. And clearly seen within the negatives was the positive image of the man on the Shroud. No more would the

claim be made that Pia faked the negatives or that the unexpected positive was produced by a technical fluke during the processing.

The Enrie photographs did not reveal any new scientific fact associated with the Shroud, but settled the question of the image being that of a negative imprinted on the cloth. The sensation that was ignited by Pia's work did not appear to occur with Enrie's photographs. Possibly the critics remained quiet because their one and only scientific argument against the authenticity of the Shroud had been dealt its death blow while the believers simply sighed in relief. Many critics continued to hang on to Chevalier's contention that the image was a medieval painting, as skeptics still do today, but the photo-negative clearly negated that argument without even having to say a word.

In spite of the low-keyed nature of this event, Enrie's photographs did catch the interest of Pierre Barbet, a Paris surgeon and teacher of anatomy. Barbet's training allowed him to pursue the course of study that Vignon started, and to further the work on medical forensics of the Shroud. Like many men of science who eventually contributed greatly to our understanding of the Shroud, Barbet entered the fray quite unexpectedly. In 1931, a friend, Father d'Armailhac, provided Barbet with a copy of an Enrie photograph and asked, as a favour, that Barbet would comment on the anatomical features revealed in the photograph.

Besides confirming the work of Vignon, Barbet uncovered two pieces of evidence that further supported the authenticity of the Shroud. These were the nail wound through the wrist and the absence of a thumb on the hand. Vignon had previously noted that the nail had to go through the wrist rather than the hand in order to hold the body to the cross. But how was the nail driven through the wrist when the wrist was completely enclosed by a set of bones and had no passage through which the nail could be driven? And if the wrist bones were shattered during the

penetration, would this not contradict a prophecy associated with the Messiah, that none of his bones would be broken?<sup>71</sup>

Barbet had the expertise and opportunity to test this question scientifically. At St. Joseph's Hospital in Paris where he was the chief surgeon, he took the arm of a patient, held the patient's arm to a board, then drove a square nail, as used for crucifixions, through the wrist. It should be noted that these patients gave their full permission, and that their arms were amputated by Barbet for medical reasons before he did his experiment. What he observed on the living tissue amazed him. The nail did not fracture any bones but forced apart the wrist bones and followed an aperture or gap between the bones to exit the back of the hand at the exact location where the nail mark appears on the Shroud. By carrying out this experiment on a number of recently amputated "living" arms, Barbet found that the nail always followed the same route, even if he tried to direct it elsewhere, because this penetration took the path of least resistance. The image on the Shroud was anatomically correct.

In addition to where the nail exited the body, its travel through the wrist resulted in touching a nerve serving the hand, and immediately the muscles contracted causing the thumbs to be pulled under the palm of the hand.<sup>72</sup> The pathway found by driving the nail through the wrist was one unexpected result that conformed to the picture on the Shroud, and the movement of the thumb was yet another totally unexpected result. It explains why the thumb does not appear on the hand of the man on the Shroud. Medieval paintings of the crucifixion not only show the nails

---

71. John 19:36 notes that these things were done to fulfill the prophecy of Psalm 34:20 that his bones will not be broken.

72. My own experience with exposing the nervous system of frogs and lobsters in my neurobiology teaching labs attests to this result for whenever you touch a living nerve with a metal probe, that nerve becomes excited causing limb muscles to contract. For this reason, students are taught to use glass probes when trying to isolate nerves from living organisms..

penetrating the palms, they also show all digits of the hands, including the thumbs.

Unlike Yves Delages who was an agnostic puzzled by Pia's photograph, or Paul Vignon whose faith may have been strengthened by his studies of the Shroud, Pierre Barbet was already a deeply religious man prior to becoming involved with the Shroud. Whether or not the Shroud was authentic was not a factor in Barbet's faith in the risen Christ.

In addition, the period in which he was doing his work on the pictures of the Shroud was unexpectedly fortunate. His studies on the wrist as shown in the Enrie photograph of 1931 were just coming to an end when Pope Pius XI surprised the world by requesting that the Shroud be displayed again in 1933. After being put away for over 30 years prior to 1931, here it was to make another appearance within 2 years of its last showing. In addition, Barbet somehow quickly became part of the Shroud elite, and when he visited Turin for the 1933 exhibition, he along with Pia and Vignon received private audiences with the Pope to discuss the Shroud. There were to be no photographs taken during this exhibit, but it did give Barbet the unusual chance to observe the Shroud first hand while he was studying Enrie's black and white photographs. Vignon had to wait almost half a lifetime, to have the same opportunity.

Barbet's involvement with the Shroud could only be described as extremely lucky, or God ordained. First, a friend asked him to take a look at the Enrie photographs and to comment on the anatomical features of the victim. Only Barbet had the experience to do the medical forensics which showed the intriguing response of the wrist to injury. Second, the Shroud was to be exhibited again, allowing Barbet to view the real thing. But even the viewing was to be quite unusual.

As was the custom, the Shroud was displayed in its frame high above the marble altar. Both the lighting and the distance were too great to make out any details, and this greatly

disappointed Barbet. Then when the Shroud was to be placed back into its reliquary, Cardinal Fossati did something that was quite unexpected. Before taking the Shroud off its frame, he had it carried outside to the front of the church for the multitude to have one last chance to see it. It was placed on the top step of the entrance to the cathedral, and just by chance, right in front of Barbet himself. The proximity, and the lighting, were perfect to allow Barbet to examine the Shroud in detail. He wrote:

I suddenly experienced one of the most powerful emotions of my life. For without expecting it, I saw that all the images of the wounds were of a colour quite different from that of the rest of the body; and this colour was that of dried blood which had sunk into the stuff. There was, thus, more than the brown stains on the shroud reproducing the outline of the corpse. The blood itself had coloured the stuff by direct contact [...] a surgeon could understand, with no possibility of doubt, that it was the blood which had sunk into the linen [...] <sup>73</sup>

At that moment, Barbet had realized that the image of blood on the cloth was blood, both by its colour and by the way it stuck to the cloth. It was not paint used to mimic blood stains, but was the real thing. He had battlefield experience in WWI, sewing up many badly injured men, and knew what dry blood on a cloth looked like. Even though Vignon already showed that the blood stains on the cloth had dried like real blood, his observations were of the black and white photographs. Barbet had seen the stains in full colour and in real life. Without a doubt he knew the stains on the cloth were created quite differently to the image. They were real blood stains; no paint was involved whatsoever. As Barbet

---

73. Quoted in John E. Walsh, *The Shroud*. (London, UK: W.H. Allen & Co. Ltd, 1964) 110-111.

was later to say, "I had recognized them [i.e., the blood stains] just as one recognizes the image of a familiar face."<sup>74</sup>

Barbet also performed other experiments on cadavers, one in which he drove a nail through the foot, and the other in which he pierced the rib cage, first with a syringe, then with a knife. As with the wrist, the nail went through the foot quite easily and exited in the location in keeping with the wound on the image. As for the knife into the side, Barbet was testing the validity of the gospel accounts and not necessarily the anatomical validity of the image on the Shroud. The Gospel of John describes the spear entering the dead body as it hung on the cross, and that piercing resulted in blood and water oozing out of the cut. "But one of the soldiers pierced His side with a spear, and immediately blood and water came out." (John 19:34)

It is commonly believed even today that the blood coagulates within the dead body, and John's account of blood and water freely flowing from the wound may not be what John actually saw happen. Instead, he may be using poetic license to emphasise two themes that occur in his account of the gospel: the water symbolizes the Spirit, and the Spirit (i.e., the water) flows out of Christ. Thus, John specifically mentions water as a way to say that the Spirit comes from Christ following his sacrifice on the cross. Since John is writing his account long after the events took place, there is certainly the possibility that he may have embellished his account to bring home the point that it was from Christ that the Spirit comes, in the same way, that water flowed from the body when it was punctured by the spear.

It may be that, being a very religious man, Barbet had already accepted the symbolic explanation of the water and blood. As a surgeon with battle field experience, he knew that the blood could still flow out of a corpse, but he had never seen this blood mixed with water. A dead body does not exude water or sweat. The blood stain in the side of the man on the shroud was scientific

---

74. Ibid., 111

proof that his side was speared and that blood oozed out. But did John really see the water and blood pour out of the wound, or was the mention of water in John's account his way of emphasizing the importance of water in Christian belief? Barbet needed to find out for himself.

Taking the precise location on the image on the Shroud where the spear should have entered the body, Barbet inserted a syringe into a recently deceased body to see what fluids could be removed. If inserted to the appropriate point, he punctured the lining surrounding the heart, and a clear fluid resembling water was collected. If he plunged it deeper into the heart, then blood was collected. The clear fluid came from the cavity, the pericardium, surrounding the heart whereas the blood came from within the heart chambers themselves. If he jabbed a knife into this exact position, he got the blood coming out mixed with the clear pericardial fluid.

Some commentators may base eloquent sermons on John's description of blood and water to emphasise the role of the Spirit in Christianity, but through Barbet's experimentation it is clear that what John described was a natural phenomenon that occurs when the dead body is speared in this fashion. However, John did not have the medical word to describe the clear fluid that came out, the hydropericardium – water of the pericardium.

Barbet died at the age of 77 in 1961, and did not live to see the later scientific studies on the Shroud. His work was limited to one opportunistic time when he had the chance to work on living tissue and on cadavers, and to see the cloth at a very close range for a few minutes in the light of the setting sun. His contributions to Shroud studies also extended beyond purely scientific studies, ranging from showing that the image on the Shroud conformed to a real crucifixion, to describing the physiology and pain that would have been experienced by anyone who had been tortured with scourging and crucifixion. In this latter work, he recognized that he was going beyond the science of the image to describing

the sufferings of Jesus Christ. Being a religious man, he did not hesitate taking a leap from facts to faith because he saw the facts fully supporting, in every way possible, his faith in a risen Saviour.

Barbet's work appeared in many different forms, such as scientific articles, small books, or religious pamphlets, and was to culminate in a book entitled, *A Doctor At Calvary*, in which he summarizes all his previous work that was done to describe the crucifixion as a surgeon, rather than as a theologian, or one of the Gospel writers. His work is extremely effective in conveying to the average person unfamiliar with Roman scourging and crucifixion, the suffering of Christ. Barbet does not apologize for bringing science and faith together in this fashion. Some of his writings have even been used to replace the sermon on the Passion during the Easter Mass. He showed that the image conforms to the crucifixion, and he firmly believed that the image was that of Christ. He writes:

I am first of all a surgeon, and thus well versed in anatomy, which I taught for a long time; I lived for thirteen years in close contact with corpses and I have spent the whole of my career examining the anatomy of the living. I can thus, without presumption, write "the Passion according to the surgeon"; may we say the cultivated surgeon, since that is what it is his absolute duty to be.<sup>75</sup>

Barbet was also confident to say that "since I finished my experiments the conclusions to which I came have never been reversed, though I remain open to any new discovery which may show me to have been wrong."<sup>76</sup> And except for one period of

---

75. Pierre Barbet, "A doctor at Calvary" (P.J. Kenedy & Sons: New York, USA, 1953) p. 11.

76. Ibid., p. 9.

time from 1988-2005, which is quite brief in the long history of the Shroud, his conclusions have never ever been contradicted. Subsequent scientists have sometimes overstated their findings as being 'new' but on reviewing the work of Barbet, they are new not in knowledge but in the technology used to test what Barbet had already found to be true.

As noted in the aftermath of the first photograph taken by Secondo Pia, the manner by which the Shroud enters and leaves the public eye tends to repeat itself throughout history. First, there is the calm assurance that the importance of the cloth is not its authenticity, but the status as a religious icon used to focus worship. Then an unexpected scientific discovery ignites interest in the Shroud because it just might be the real thing. This enthusiasm is then extinguished by a finding to refute the evidence, and all is quiet once more. During these quiet times, until the Holy Shroud hits the media once again, it maintains its significance as a religious icon, a representation of the real thing, while evidence quietly gathers to support its authenticity as a relic, an actual artifact directly associated with Jesus Christ.<sup>77</sup>

The Enrie photographs finally put to rest the accusations of incompetence and fraud against Pia, and also provided physical, rather than just photographic evidence of its authenticity. But any sensation created by these findings was tempered by the letter written by d' Arcis claiming that the Shroud shown in Lirey in the 1300's was a painted forgery. The enthusiasm for the Shroud will peak again in 1978 when a group of highly skilled, well-equipped American scientists were permitted direct access to the Shroud. Until this time, the period between 1933 and 1978 might be considered a quiescent period when the interest in, and the scientific evidence for support of the Shroud gradually gained momentum. During this period, the Shroud was never put on

---

77. Icon and relic are two words that are often confused. An icon is a religious artistic representation of an object associated with a saint, biblical character or the crucifixion, but it is not the actual object. A relic is the actual object.

public display. Nonetheless, it was either partially or completely removed from its box for a very short period of time on at least three occasions.



## Chapter 12

### The Quiescent Period: 1933-1978

Between the Enrie photographs in 1933, and the next public exhibition of the Shroud, a period of 45 years was to pass. During this quiescent period, the science of photography enabled others to view the image on the cloth as it really looks, and to become enthralled with what they saw. Skeptics continued to ignore the scientific facts and to rely only on the medieval painter theory suggested by Chevalier, the historian, but the verifiable scientific facts were entirely on the side of the Shroud being authentic. Those willing to believe were given every reason to believe. One such person was Group Captain Leonard Cheshire V.C. (1917-1992)<sup>78</sup> whose faith came alive when he viewed a picture of the Shroud while he was recuperating from tuberculosis.<sup>79</sup> He then

---

78. Group Captain Geoffrey Leonard Cheshire, Baron Cheshire VC, OM, DSO & Two Bars, DFC (7 September 1917 - 31 July 1992) was a highly decorated Royal Air Force (RAF) WWII pilot and after the war devoted his life to charity work. In 1948, he founded the Leonard Cheshire Disability and dedicated his life to supporting disabled people, and lectured on conflict resolution. He also set up the Ryder-Cheshire Foundation, the Raphael Pilgrimage, and the Memorial Fund for Disaster Relief.

79. Leonard Cheshire, "Pilgrimage to the Shroud." McGraw-Hill, 1956. See also Charles Foley, "More than I went to ask for," in *Shroud Spectrum International*, 15 (Pt 5), p.12-21, 1985; Robert Wilcox, "The truth about the Shroud of Turin: Solving the mystery," Regnery Publishing Inc., USA, 2010.

devoted some of his time to presenting public exhibitions of photographs of the Shroud, and even equipped a bus with a mobile exhibit. His efforts led in 1955 to one private event which brought the Shroud partially out of its reliquary.

Capt. Cheshire was able to orchestrate the 1955 unfurling only because ex-King Umberto II had control over the Shroud, and could decide how the Shroud was used. Had a committee of the elite been responsible, such an event may never have been allowed. There are unverified reports that prior to this event, the Shroud was also unfurled informally in 1946, across tables in a monastery near Naples, Italy, to show to the monks of Montevergine. These monks were reportedly charged with protecting the Shroud when it was moved from Turin during WWII to prevent it from either being destroyed by bombs or being confiscated by the Nazis for Hitler. It should be pointed out that this showing may not have occurred, since it does not appear in any historical records associated with the Shroud. But it does make a good story and was reported in several respectable newspapers.<sup>80</sup> In contrast, Capt. Cheshire's association with the Shroud is well documented.

*A personal visit with the Shroud:*

During his efforts to publicize the Shroud in the UK, Cheshire received a letter from Mrs. Veronica Woollam (also spelt Wollam) of Gloucester asking if her 10 year old daughter may be blessed with the relic of the Holy Shroud. Josephine, her daughter, had been suffering from osteomyelitis in the hip and leg for four years, and had become a wheel-chair bound invalid. This condition is not necessarily life-threatening, and can be treated with antibiotics, but penicillin only became available to the

80. See the website:

<http://shroudstory.com/2013/06/14/will-the-alfred-rosenberg-diaries-tell-us-anything/> accessed July 2015. This story was reported by several newspapers since it has a high degree of human interest, but there does not appear to be any followup to verify its authenticity.

general public after WWII, and such treatment may not have been an option in the UK in the early 1950's. Even today, antibiotics may not be effective when the disease is severe or persistent. It is certainly debilitating, as patients can suffer from pain and tenderness over the affected area of bone.

According to an account written by Charles Foley who spoke personally to many of the individuals associated with this event, Josephine was on her death bed when her mother wrote the following letter to Capt. Cheshire:

I am writing to ask you if my daughter Josephine could be blessed with a relic of the Holy Shroud. She is ten years old, and is in hospital with osteomyelitis in hip and leg. Also a lung abscess. Her doctor has told me that there is no hope of her getting better. She has been in and out of hospitals for the last five years. On Friday she received the last Rites of the Church. Josephine has asked me to write to you, and she said that if only she could see the Relic she will get better and walk again. Everyone at the hospital has been very good to her. She is always in great pain, but she has always got a smile [...] I know I am asking for great things but I do hope and pray that my prayers will be answered for my daughter to get better.

I remain,

Mrs. Veronica Woollam.<sup>81</sup>

When this letter was received by Capt. Cheshire's office, he was absent at that time, but someone replied stating that the Shroud was 2000 miles away in Turin and was seldom brought out for public viewing. With this letter was included a photograph of the Shroud Face which Mrs. Woollam placed on

---

81. Charles Foley, p. 13-14. Note: Foley uses Woollam whereas other authors spell it as Wollam.

her mantel above her fireplace, and every time she passed in front of it, she "prayed and prayed" for her dying daughter.

As it turned out, Josephine immediately started to show signs of improvement, and rather than dying, her disease started to abate and she was soon sent home. After being informed of this miraculous recovery, Capt. Cheshire visited the Woollam's bringing with him a large picture of the Shroud and a life-sized picture of the Shroud Face. Then things started to get really interesting.

Possibly experiencing the euphoria that renewed health can bring following a close call with death, Josephine felt assured that she would walk again despite one leg being severely underdeveloped due to her four year bout with osteomyelitis. All she needed was to see the Shroud. Capt. Cheshire reasoned with this sprightly ten year old that seeing the Shroud was completely out of the question. Its last public exhibition was in 1933, and there were no plans to bring it out in the near future. But there was something about Josephine, the situation, and his own personal experiences that would not put Josephine's request out of his mind. As Foley writes:

Describing that day in Gloucester, Cheshire said that he looked at the scrap of a child, the deformed foot, the leg mutilated and bound up in a splint, and he listened to the steady declaration that if she saw the Shroud she would walk again. "There seemed nothing else to do except take her to Turin."<sup>82</sup>

Neither Cheshire nor the Woollams had the funds for this undertaking, but they were given money by Archbishop Grimshaw of Birmingham to get to Portugal to visit the exiled ex-King of Italy. King Umberto II not only granted permission, he

---

82. Charles Foley, "More than I went to ask for," in *Shroud Spectrum International*, 15 (Pt 5), p.12-21, 1985

also funded the remainder of their trip. He even phoned his representatives in Turin to ask that Capt. Cheshire and Josephine receive accommodations and all the help they needed.

Being the dethroned and exiled King of Italy, Umberto II was not even certain if his wishes would be carried out and warned the small group of pilgrims that many ecclesiastical and civil hurdles would have to be cleared. Umberto's decision may have also been spurred along by his changed political position. By giving his approval he was testing to see if he still had any say over his most precious of possessions. With the removal of the monarch, the Shroud could have been claimed as part of Italy's state property. By giving his permission, and seeing this permission carried out, Umberto would know if the new republic still recognized him as the rightful owner of the cloth and that he exercised control over it.

Finally, Capt. Cheshire and Josephine were in Turin face to face with Cardinal Fossati, the last man between them and the Shroud, and the same individual who unexpectedly had the Shroud carried out of the Cathedral in 1933 when Pierre Barbet made his discovery that the blood on the Shroud was real blood. But at this moment the Cardinal was very reluctant to set in motion the massive bureaucratic machinery that would make Umberto's request possible – reluctant until Josephine showed him the shoes she brought along with her which she was going to wear walking home. After retiring to his office and making several phone calls, he returned to tell them to come back later that day. The reliquary containing the Shroud would be taken from its storage compartment in the altar, the seals of the reliquary broken, and the Shroud partially unfolded to allow Josephine to touch it.

Umberto was pleased his orders were followed, and Josephine and Capt. Cheshire finally fulfilled their pilgrimage as Josephine's fingers gently touched the cloth. But nothing miraculous happened. Josephine did not walk away in her new shoes.

Was this proof that the Shroud was a fake? For the skeptics, yes, but for the scientifically minded, no. In fact, this was not a good scientific test at all since any result could have been used to refute or support the Shroud. If Josephine was not healed, it merely meant her faith was not strong enough to obtain healing, not that the Shroud was a fake. As Jesus said to the woman healed by touching him, "[...] Daughter, be of good comfort: thy faith hath made thee whole; go in peace."<sup>83</sup> On the other hand, if she did show some form of healing, it could be a simple matter of mind over body, and not that the Shroud was authentic and carried healing powers. Her change in psychology could have brought about her change in physiology.

But what needs to be remembered is that her visit with the Shroud may have received the greatest publicity, but her healing did not start when Josephine touched the Shroud. It started the moment her mother placed the picture of the Shroud Face on her mantle piece and began to pray. Was this coincidence, or was this faith working at a distance?

By 1978, when the Shroud was finally brought out for public exhibition for the first time since 1933, Josephine was 33 years old. She was able to visit Turin once again, but this time she walked unassisted with a prosthetic leg. She had also married, become a mother and worked as a full-time telephone switchboard operator. Sadly, Josephine died at the age of 36 from bronchiectasis, but this should never reduce the significance of her experience with the Shroud during those eventful days of 1955.

#### *Private Studies on the Shroud:*

The appearance of the American team in 1978 marked the end of the quiescent period during which time the Shroud was seen possibly only twice, once by a group of daring monks, and once because of the pleas of a ten year old girl full of hope. And these

---

83. Luke 8: 48, KJV

exposures were not public events, nor were they associated with any studies on the Shroud. Today, when the Shroud seems to be displayed quite regularly, in 1978 it had not been seen publicly for 45 years. The 1978 event also proved to be very different, for after its showing, the Shroud underwent the most intensive scientific study in its history.

Although the Shroud was not brought out for public display during the quiescent period, some scientific work on the physical aspects of the Shroud was done in private. This work has been overshadowed by the massive amount of data and publicity associated with the 1978 event, and these earlier scientific studies on this cloth have slipped into obscurity. This work was done more-or-less secretly in 1969 and 1973.

In 1969, a group of 11 people chosen by Cardinal Pellegrino had direct access to the Shroud, and over two days, they examined it with and without microscopes, and used Wood's light (an ultraviolet light or black light that can detect bacteria and fungus used in medical examinations) and infrared light (a form of light that can detect heat). Coloured pictures were also taken, but alas, their quality was poor. As one Shroud historian lamented, this well-meaning scientific study suffered from serious flaws that cast doubts on any of their findings.

One serious flaw was that the commission was set up in total secrecy suggesting some form of conspiracy. News of this event did leak out to the press on a couple of occasions, but the secrecy remained. Another serious flaw had to do with the choice of people who worked on the Shroud. Anyone chosen by Cardinal Pellegrino was from the Turin region, and were closely associated with what could be viewed as the 'inner circle.' They were not necessarily the experts in their field. And his choice of photographer, the son of one of the scientists on the commission, turned out to be regretful due to the poor quality of the photographs. The commission compiled a short report immediately after studying the Shroud, and based on this report,

requests were sent to ex-King Umberto in Portugal to ask that samples of the cloth be removed for study.

Four years later, in 1973, the King agreed to have this done during the time the Shroud would be unfurled for a television appearance. However, the veil of secrecy around the scientific study remained. Not only were the names of the 11 individuals involved in this commission kept secret until 1976, no one was even aware that samples were to be removed following the appearance of the Shroud on television. The tendency to keep the study of the Shroud amongst a select few was reminiscent of the earlier work done by Pia, Vignon and Barbet, but the secrecy seemed somewhat unwarranted. Maybe this was in keeping with the traditions associated with this relic such that the privileged few could carry out their work without informing the populace? Or were the Shroud supporters afraid of uncovering some embarrassing facts which they could keep secret if necessary?

By 1973, the complement of the commission had changed a bit, but its character essentially remained the same with most replacements coming from Turin itself. However, one non-Italian addition was a Belgium, Professor Gilbert Raes, who was a textile specialist from the Ghent Institute of Textile Technology. The detailed pictures taken by Enrie in 1931, not only showed that there was no trace of paint pigments on individual threads associated with the image, the pattern of the weave of the linen was unmistakable. From Enrie's photographs, textile experts were able to recognize the fabric:

as pure flax, woven from coarse, rough-fibred, handspun yarn. The irregular lines and imperfections in the weave indicated a hand-made product. [...] The pattern was easily identified as herringbone (twill).<sup>84</sup>

---

84. John E. Walsh, *The Shroud*, p.101

Although this design was around in the East well before the time of Christ, it was not used in Western Europe until into the 1300's. Since it would be unlikely that a forger obtained linen from the East in order to create a forgery, the textile itself supported the Shroud's authenticity. This hypothesis warranted a direct examination of the cloth by an expert, and Raes was, in fact, a world leading expert and not simply the best available from the inner circle in Italy.

At this time, four nuns, experienced in darning and embroidery, were instructed to remove a total of 17 pieces of thread from various locations on the cloth. Then two relatively large samples were cut from the cloth to give to Raes. One was an irregular piece 13 mm wide and 40 mm long taken from the very end of the cloth showing the front of the body (at its feet). This sample was to later play a very significant role in unravelling the C-14 dating controversy. The other sample was 10 mm wide and 40 mm long taken from one side of the cloth referred to as the side strip, a piece that appears to have been added to one side of the cloth in order to centre the image.

The cut ends of the Shroud were then carefully darned by the nuns. Raes nor the commission were particularly anxious to get their results known and it took three years before Raes' report to the commission was published. In the end, all Raes was able to do was to confirm that the textile properties of the Shroud still attested to its authenticity, but in themselves, did not prove its authenticity. Even with access to pieces of the cloth that he could unravel under the microscope, he could do little better than what Vignon did several years earlier with his keen eye on the picture of the wound in the wrist.

Besides Raes, the textile expert, the 1973 Turin commission that studied the Shroud also included Dr. Max Frei who was a well-known Swiss criminologist. His invitation came about because he had published a study on ways that photographs could be faked, and he was asked by the chair of the commission,

Monsignor Caramello, to verify the photographs taken by Judica-Cordglia in 1969. The commission was interested in studying the actual weave of the linen and wanted to know whether the photographs were a true representation of the cloth.

During his examination of these photographs of the Shroud, Frei became aware that the cloth had adhering to it microscopic particles. Frei may have been asked to examine the photographs to verify that they were a true representation of the cloth, but he was a specialist at examining microscopic evidence at crime scenes. From 1948 to 1972, he was head of the Zurich Police Scientific Laboratory, and was involved in helping to solve many important crimes and accidents. It was natural for him to ask that he be allowed to turn his attention to the microscopic particles on the Shroud.

So along with removing pieces of fabric, from which Raes could analyse the textile properties of the Shroud, Frei was given permission to apply strips of clear adhesive tape to various portions of the Shroud in order to lift from its surface any particles that may have collected over its history. In 1973, he obtained 12 pieces of adhesive tape from what is described as the extreme frontal end. Unfortunately, trying to track down exactly where these were from on the cloth is a bit murky, and Frei did not leave any definitive work to map out their exact locations. Possibly Frei, described as a modern day Sherlock Holmes, took the effort to note their locations, but the 1973 procedures may have physically damaged portions of the cloth, thus contributing to confusion associated with the Frei samples.

Frei took his tapes and folded them over on themselves to ensure that they remained representative of the area from which the tape was applied. If left exposed, material could be lost or even added by secondary contamination. This was a standard

procedure in criminology.<sup>85</sup> These tapes were then used to create the microscope slides on which the microscopic particles could be examined. Frei claimed that he could recognize many different pollen grains, but there does not appear to be any peer-reviewed scientific paper where these have been described, and these slides no longer exist. In a documentary, he is heard to say:

These plants are of great diagnostic value for our geographical studies as identical desert plants are missing in all the other countries where the Shroud is believed to have been exposed to the open air. Consequently a forgery, produced somewhere in France during the Middle Ages in a country lacking these typical halophytes, could not contain such characteristic pollen grains from the desert regions of Palestine.<sup>86</sup>

Frei had retired in 1972, and devoted much of his retirement to studying the pollen he had found on the Shroud. It was clear to him that the Shroud was in Jerusalem at the time of the crucifixion, and was taken from Palestine, to Turkey, to France, and then to Italy based on the sort of plants identified by their pollen found on the Shroud. However, he required more samples to verify his work. Thus in 1978, at the end of the quiescent period, he was permitted access to the Shroud just before the Americans, and he did his sample collecting as the Americans looked on.

The manner by which Frei pressed hard on the Shroud with his adhesive tape horrified the Americans who had prepared a special application device to add only a slight pressure to their

85. From Emanuela Marinelli, "The question of pollen grains on the Shroud of Turing and the Sudarium of Oviedo". A paper presented at Valencia, April 28-30, 2012.

86. See Ian Wilson, *The Blood and the Shroud* (London, UK: Weidenfeld & Nicolson) p. 100.

adhesive tapes. This gave rise to a frequently described confrontation between Max Frei and the American, John Jackson, which was captured on camera. Jackson physically prevented Frei from taking an adhesive tape sample from the image of the face, and Prof. Luigi Gonella, who headed the team of European scientists, mediated between them. It was finally decided that Frei could collect his samples, but the image of the face would not be touched.

The animosity between Frei and Jackson was unavoidable. Frei believed his work was being marginalised and pushed aside by the American juggernaut, while Jackson viewed Frei's methods as amateurish at the best, and detrimental to the cloth. To date, it seems that the incredible amount of information that could have been obtained by examining the pollen is forever lost. Frei died before his work was published. His samples have been donated to another group to study, but how he did his collection and how he identified his pollen are secrets that will never be made known.

From 1933 to the major scientific investigation of 1978, the Shroud had only been touched by a 10 year old invalid girl, by nuns who removed pieces of the cloth to be examined by the Belgium textile expert, Gilbert Raes, and by Max Frei who applied strips of adhesive tape to several locations to collect samples of particles attached to the cloth from areas that are no longer known. During this time the evidence for the Shroud's authenticity continued to grow, and in light of this scientific support, Chevalier's historical evidence for a medieval painter became less compelling.

Then the Americans finally landed in Turin with the confidence in the technology they had developed to explore the far reaches of space and to place them on the moon. Would the authenticity of the Holy Shroud survive such a scientific onslaught? Many scientists on the team felt assured it would not.



## Chapter 13

### The Shroud of Turin Research Project (STURP)

You could not have picked any two sets of researchers who were so opposite in character, resources, vision, social status, political stance, or religious bent. The flamboyant, enthusiastic, and somewhat scientifically arrogant Shroud of Turin Research Project, also known as STURP, was in sharp contrast to the reserved, secretive Turin Commission of experts called together in 1969 by Cardinal Pellegrino. How did the opportunity for STURP to investigate the Shroud come about when, until then, no other group outside of Turin, let alone Europe, had ever been allowed to examine the Shroud in such detail?

As was the case for 10 year old Josephine Woollam, the fact that control over the Shroud rested on the shoulders of a small number of people allowed this single event in history to come about. It will likely never happen again. In reviewing the details which spawned STURP, it is easy to believe in some form of divine intervention, for the coincidences were aplenty, and many of the actions by personalities in the team seemed guided by a child-like faith that Josephine had.

#### *The unavoidable bureaucracy:*

In 1978, the Shroud was to be brought out to celebrate its 400 years in Turin. Except for the possible brief excursions to avoid

being captured during periods of war, the Shroud came to Turin in 1578, and the Cathedral of St. John the Baptist had remained its home. Since its arrival in Turin, the House of Savoy, the royal family of Italy, had been its rightful owner, and the King determined what would happen to it. A bureaucracy rose up around this relic to protect it, and this became known as the Confraternity of the Holy Shroud. A confraternity is not a familiar term in today's parlance, but it refers to an organization of lay people that normally arises in the Roman Catholic or Orthodox churches. These confraternities focus on specific causes or goals centred on Christian charity or piety, and are approved by the Church hierarchy. Although the Shroud was not owned by the Roman Catholic Church, it seemed quite natural for the church to have an interest in it, and out of that interest, to create this confraternity for the Shroud that has existed through the centuries.

After WWII, the Confraternity of the Holy Shroud set up the Centro di Sindonologia, the Centre for Shroud Studies, the mandate of which is to conduct research on the Shroud and to do "all things necessary to see that the reputation of the Shroud was never besmirched."<sup>87</sup> After Italy voted to become a republic in 1946,<sup>88</sup> King Umberto II moved to Portugal, but still retained ownership and control over the Shroud as "official limbo." What this title meant was uncertain, for the King had no power to

---

87. John H. Heller, "Report on the Shroud of Turin," Houghton Mifflin Co., Boston, USA, 1983. p. 51.

88. During the political unrest in Italy in and around WWII, the Italian king, King Vittorio Emanuele III of the House of Savoy, who at one time supported the dictator Mussolini, abdicated on May 9, 1946, at which time his son became King Umberto II. This move to make his son king was an attempt for the monarchy to regain popularity. However, in a referendum held shortly after his abdication, Italy voted to dissolve the monarchy. In 1946, former King Vittorio Emanuele III remained in Egypt, Umberto moved to Portugal, and the government took over the Royal Palace and other properties belonging to the monarchy. Umberto was never allowed back on Italian soil for fear of causing more political unrest. He died in Switzerland in 1983.

enforce his will. As noted previously, his approval to allow Josephine Woollam to touch the Shroud may, in fact, have been a test on his part to see how much real control he had over the relic. He no longer occupied the Royal Palace, nor was he allowed to return to Italy since the government feared political unrest. Yet his status as the Shroud's owner was upheld possibly for two reasons. The government did not want to be involved in a purely religious matter, and the church officials in Turin, in all probability, respected the monarchy out of tradition.

Upon his death in 1983, King Umberto II bequeathed the Shroud to the Pope on the provision that it never leave Turin, and today permission to examine the Shroud lies with the Pope. For this reason, and because of the interest recent Popes have had in the Shroud, the Shroud has been displayed more frequently of late than it has been in all of its time in Turin. In 1978, several years before ex-King Umberto's death, to obtain permission to work on the Shroud, only the ex-King needed to be approached since his wishes, as in the case of Josephine Woollam, were followed by the archbishop-cardinal of Turin.

The reliquary holding the Shroud was secured by three locks each with its own key, signifying the different layers of control. One key was in the possession of the Archbishop-cardinal, another by the representative of the King, and a third, by the canon of the cathedral and the custodian of the Shroud. This line of authority from the ex-king to the opening of the locks, was very efficient, and allowed the Archbishop-cardinal in 1955 to bring out the Shroud on very short notice for Josephine to touch. It is important to note that the authority to examine the Shroud did not include the Centro di Sindonologia. The Centro, instead, also received approval from these same authorities to work on the Shroud in 1969 and in 1973. And they assumed they would be carrying out any scientific studies on the Shroud in 1978, if any were to be done.

*Walking in faith or ignorance:*

None of this bureaucracy was familiar to the Americans, and their request to examine the Shroud did not go to ex-King Umberto II nor the Archbishop-cardinal of Turin. Instead, late in 1977, John Jackson and Eric Jumper travelled to Turin to present their request directly to the Centro headed by Dr. Baima. This presentation included a 243-page book entitled *Proceedings of the U.S. Conference on the Shroud of Turin* which compiled the objectives of about 30 American scientists who met and produced these proceedings in March, 1977.

Little did any of the American scientists know of the bureaucratic power struggles involved, but then up until the time they made their request, Jackson and Jumper themselves led an organization with little official standing of its own. They may have had *The Proceedings*, but they represented a hodgepodge of scientists with a mosaic of expertise, no government money, no official sponsors, and were drawn together with the one goal in mind—to document the physical characteristics of a religious relic. They resembled more a Wild West posse running in haste to catch an outlaw, than a group of seasoned professionals seeking to take meticulous scientific measurements of an ancient cloth. How did STURP come about?

STURP began with the idea of one person, Dr. John Jackson. As a hobby in the 1970's, he turned his attention to the photograph of the Shroud, and wondered if the photo-negative hypothesis could be tested against the forger-painter hypothesis. If the Shroud were not a painting on linen, but a real grave cloth that was imprinted with the image of the body it covered, then parts of the image would be in direct contact with the cloth, and parts would be distant to the cloth.

This relationship between the cloth and the body image had already been suggested by Vignon who observed that some parts of the image could not have been in contact with the cloth when the image was created. This led Vignon to proposing that parts

of the body image were created at a distance by ammonia vapours oozing from the decaying body. Vignon never had the chance to test his theory on a real body, but Jackson was not trying to see what caused the image, but whether this distance relationship could be determined by mathematically plotting all the points of the image. He surmised that the parts of the image in contact with the cloth would be more intense, and the parts more distant from the cloth would be less intense, or fainter. If the distance relationship were found to be present, then the image could not be that of a painting, and it may even be possible to create a three dimensional figure from this information gained by measuring the image on the cloth.

Jackson was a theoretical physicist working for the Air Force Weapons Laboratory, and pursued his investigation of the Shroud in his spare time. He quickly enlisted fellow co-workers, but to get the measurements they needed, the group had to have a better picture. This led them to write a request to Father Adam Otterbein, president of the Holy Shroud Guild, an American organization started in 1951 "to spread accurate information about the Shroud of Turin and to encourage scholarly and scientific research."<sup>89</sup> Father Otterbein and Father Rinaldi, vice president of the Guild, had both been to Turin in 1973 to view the Shroud as it was being exhibited for television. Since Otterbein had been trying to encourage serious scientific work on the Shroud, he welcomed this request from a group of very well-qualified scientists, and sent them coloured pictures that he and Rinaldi had taken of the Shroud during the 1973 exhibition.

These photographs were still unsuitable, but the scientists believed that the image could be improved if a set of Wratten filters were used. These filters were developed in the early days of colour photography to remove or modify colour, and are still in common use today. The search for a set of Wratten filters led

---

89. Online: <http://www.holyshroudguild.org/about-us.html>, accessed May 2014

Jackson to Bill Mottern who had something better than the filters. He had a VP-8 image analyser. This device uses electronic signals sent back to earth by the space probes, to construct 3-D images of the celestial bodies 'seen' by the probes. As Jackson was picking up the filters, it was only on a whim that Mottern suggested they subject the Shroud picture to the VP-8 image analyser. As Heller writes of this event:

Jackson had never heard of a VP-8, but when he drove over to [see Mottern], he took photos of the Shroud with him. Mottern asked him why he wanted to use the Wratten filters. Jackson, always ready to chat about his baby, launched into the story of the Shroud. Obliging, [Mottern] brought out the filters. And then he put forward a really dumb idea.

"Why," he suggested, "don't we put the photo of the Shroud into the VP-8?"<sup>90</sup>

At that moment, this suggestion was a "really dumb idea" because Mottern knew that photographs reproduced through the VP-8 were always distorted. Information taken from the satellites incorporated distance from the object so that a clear 3-D picture could be produced. Unlike the satellite information, ordinary photographs are two-, not three-dimensional, and the appearance of distance is created by different degrees of light or shading. Viewed through the VP-8 image analyser, a regular photograph of a face would be distorted where the forehead might appear to be in front of the eye brows or the lips recessed below the cheeks. It is impossible to get a recognizable 3-D image of a person by placing their photo through the VP-8 analyser.

Heller continues to write:

---

90. Heller p.39.

They placed the Shroud photo in the VP-8 and twiddled the dials, focus, and rotation. Suddenly, both men saw, swimming up from the electronic fog of the screen, a perfect three-dimensional image of a scourged, crucified man. [...] The two scientists just stared.<sup>91</sup>

Few people fully realize the significance of this result. To put it into context, the result from the VP-8 image analyser is even more astounding and shocking than the image of the positive appearing in Pia's negative. Both Mottern and Jackson recognised this immediately, and 'just stared.' And this result stands out well above any other evidence, scientific or historic, for the Shroud's authenticity. No painter could have ever painted this; no photographer could have ever taken a picture of this. All the theories of a clever painter, or someone using rudimentary photography, fall along the wayside in light of this single discovery. Pia's positive on his photo-negative declared the image a form of photography, not a painting. The VP-8 three dimensional image from the Shroud photograph declared it a form of photography that has yet to be created by modern technology. It simply cannot be done.<sup>92</sup> At this fateful moment on February 19, 1976,<sup>93</sup> space-age science had verified the authenticity of the Shroud.

---

91. Heller, p. 39

92. If a regular photograph of a person's face is read by the VP-8 analyser, the machine will attempt to create a three dimensional picture showing the contours of the face as hills and valleys. With the electronic information of planets received from the satellites, the VP-8 produces amazing pictures of planetary scenery. But with a regular photograph, the contours of the face are distorted because a 2-dimensional photograph does not have embedded in it the information needed by the VP-8 to create a true 3-dimensional image. There is only one 2-dimensional photograph from which the VP-8 image analyser is able to create a true 3-dimensional image. It is the Shroud.

93. See [shroud.com](http://www.shroud.com), History of the Shroud, at:

<https://www.shroud.com/history.htm#1900>, accessed May 2014.

The image from the VP-8 image analyser became the catalyst to speed up the events which sent the American team of scientists to Turin. But even after Jackson and Jumper received information early in 1978 from the Centro that they would have access to the Shroud, the organization they headed had no structure and no name.

The scientists became organized and the project named owing to the business skills of Thomas D'Muhala, a nuclear physicist who ran a very successful firm called Nuclear Technology. Tom attended the team meeting in May of 1978 and offered his services to create an official tax-exempt organization and to help with the logistics. There were many scientists, many protocols to follow, many pieces of equipment needing to be obtained, in addition to many personnel needing travel and accommodations.<sup>94</sup> Some money was attainable, but a lot of money was needed. This was a goal worth the race, a pearl of great price that all of the scientists felt was worth the sacrifice. As one of these scientists wrote:

I know of none who did not put many hundreds or several thousands of dollars into the project; they sold vehicles or took out bank loans, or procured second mortgages and cleaned out saving accounts. This is not common knowledge even among the group, since it is not discussed, yet everyone wound up doing the same thing.<sup>95</sup>

In January, 1978, the new archbishop of Turin, Anastasio Ballestrero, announced that the Shroud would be on display from August 27 to October 8 of that year. By that time, Jackson and Jumper had been given a qualified 'green-light' from Father Otterbein to plan for studying the Shroud. Following the May

---

94. See [shroud.com](http://shroud.com), History of the Shroud, at: <https://www.shroud.com/history.htm#1900>, accessed May 2014.

54. Heller, p. 63.

1978 meeting, which served to focus the collected body on the fall exhibition, a September 1978 meeting was planned to be their 'dry run.' Between May and September, D'Muhala became the key organizer, helping the scientists to obtain equipment and funding. By the September dry run, he could announce that he was able to create a non-profit, tax-exempt corporate entity in the state of Connecticut which was to be called the Shroud of Turin Research Project, Inc. (STURP). Such an entity ensured the integrity of the project since it was not being funded by any church or organization having a predisposition for a particular finding. Also, by this time, 2.5 million dollars worth of equipment had been assembled to carry out the study. And all this was done in ignorance of the church politics surrounding the Shroud.

According to one account of STURP, everyone assumed that the Americans would be working under the authority of the Centro since these were the people that Jackson and Jumper made their presentation to in 1977.<sup>96</sup> It appears that Father Otterbein who set up this meeting in Turin between the American scientists and the Italians of the Centro also believed the same. He, on more than one occasion, conveyed the Centro's decisions to Jackson, and these decisions tended to change direction like a flag in the wind. One day, they had the green light; on another day, they were told the American study was scrapped; then on still another day, the Americans were put back on the agenda. Throughout these changes of mind, Jackson held the rudder firm and steered his ship, STURP, towards Turin for an encounter with the Shroud.

As history notes, members of STURP were able to carry out their study on the Shroud, and there are several published accounts of both the personal experiences of the researchers and technicians, and the reams of data they were able to collect. Although the Centro did attempt to usurp STURP by either adding to STURP their own representatives, or reducing the time allotted to study the cloth to a laughingly small amount, these

---

96. Heller, p. 90.

attempts were countered by the Archbishop-cardinal of Turin, in which the real authority over the Shroud laid. He prevented the Centro from having a supervisory role over the American experiments, and appointed two other individuals to oversee the event. These were Monsignor Cottino, an official of the church, and Professor Luigi Gonella, a physicist from Polytecnico in Turin. Through the advice of Gonella, the Americans were given even more time on the Shroud than they had originally asked for.

*Americans at work:*

From the evening of Sunday, October 8 to Friday, October 13, 1978, the most extensive study of any relic during the course of human history took place even without the permission of all the stakeholders. The results should have been sensational, but for all this planning the American scientists failed to enlist a person with one important quality – public relations. Because not a single piece of evidence was found to show the Shroud to be a fake, the results became very anti-climatic. They simply were not newsworthy, and in many cases were framed in a scientific language that most people could not understand. Even the final official statement that came out when STURP dissolved in 1981 was a masterpiece in boredom. They had one of the most exciting research projects in history, barring space travel, and in the end, they doused the enthusiasm by essentially saying they could say nothing. The following conclusion was distributed to the public in their October 1981 press conference:

No pigments, paints, dyes or stains have been found on the fibrils. X-ray, fluorescence and microchemistry on the fibrils preclude the possibility of paint being used as a method for creating the image. Ultra Violet and infrared evaluation confirm these studies. Computer image enhancement and analysis by a device known as a VP-8 image analyzer

show that the image has unique, three-dimensional information encoded in it. Microchemical evaluation has indicated no evidence of any spices, oils, or any biochemicals known to be produced by the body in life or in death. It is clear that there has been a direct contact of the Shroud with a body, which explains certain features such as scourge marks, as well as the blood. However, while this type of contact might explain some of the features of the torso, it is totally incapable of explaining the image of the face with the high resolution that has been amply demonstrated by photography.

The basic problem from a scientific point of view is that some explanations which might be tenable from a chemical point of view, are precluded by physics. Contrariwise, certain physical explanations which may be attractive are completely precluded by the chemistry. For an adequate explanation for the image of the Shroud, one must have an explanation which is scientifically sound, from a physical, chemical, biological and medical viewpoint. At the present, this type of solution does not appear to be obtainable by the best efforts of the members of the Shroud Team. Furthermore, experiments in physics and chemistry with old linen have failed to reproduce adequately the phenomenon presented by the Shroud of Turin. The scientific consensus is that the image was produced by something which resulted in oxidation, dehydration and conjugation of the polysaccharide structure of the microfibrils of the linen itself. Such changes can be duplicated in the laboratory by certain chemical and physical processes. A similar type of change in linen can be obtained by sulfuric acid or heat. However, there are

no chemical or physical methods known which can account for the totality of the image, nor can any combination of physical, chemical, biological or medical circumstances explain the image adequately.

Thus, the answer to the question of how the image was produced or what produced the image remains, now, as it has in the past, a mystery.

We can conclude for now that the Shroud image is that of a real human form of a scourged, crucified man. It is not the product of an artist. The blood stains are composed of hemoglobin and also give a positive test for serum albumin. The image is an ongoing mystery and until further chemical studies are made, perhaps by this group of scientists, or perhaps by some scientists in the future, the problem remains unsolved.<sup>97</sup>

Without someone gifted in public relations, STURP allowed the press to spin the story, and to let it flop. Authenticating the Shroud was not newsworthy, since that was old news. It had been authenticated many times over since 1898. Even the results from the VP-8 image analyser merely confirmed what Paul Vignon, in the early 1900's, had already suggested.

The press waited with bated breath to declare that modern science found the Shroud a fake, but only the renegade, Walter McCrone gave them the fodder they needed to spread before their audience. But McCrone's evidence fell short of being totally believable, and his claim that the image on the Shroud was a painting did not have lasting public appeal. What was needed was solid scientific evidence that the cloth was a fake, and this was to happen in 1988 with the announcement of the C-14 dating results. Had a wise and experienced person in public relations

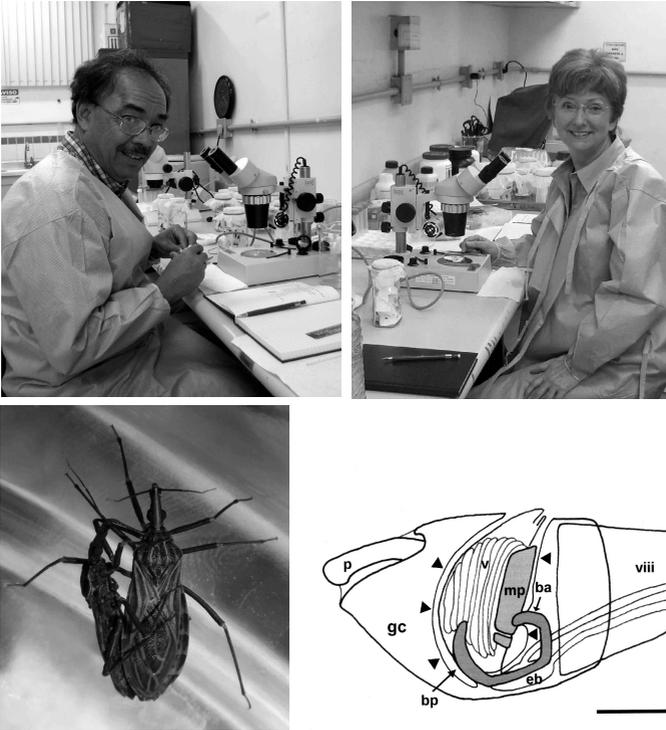
---

97. A summary of STURP's conclusion issued as a press release. From: <https://www.shroud.com/78conclu.htm> accessed May 2014.

told the story of STURP, the C-14 dating fiasco may have been avoided.

In any event, what STURP did was only to hold back the flood waters for about a decade. The dam would be breached, as future intrigue, dishonesty, and outright deceit would play an incredible hoax on the scientific and religious worlds. This hoax continues to take in unsuspecting victims.





To maintain a healthy scientifically trained mind, it is important to do science, not just think about science. The top pictures are of Jennifer Chiang and the author working in the lab of Dr. Marli M. Lima, Rio de Janeiro, Brazil, on the morphology of the reproductive organs in insect vectors of Chagas disease. In one such vector, *Rhodnius prolixus* (a copulating pair pictured in bottom left), they discovered that the genitals of the male (bottom right) do not contain a sac, but a valve (marked as 'v'). This discovery corrected a misunderstanding that has confused insect physiologists since 1959. Such experiences are common place in leading-edge science cautioning many practising scientists to avoid describing any fact as being conclusive evidence.

## Chapter 14

# Carbon-14 and the Age of the Shroud

Carbon-14 dating belongs to a science of metrology, the study of measuring. It began with the discovery in the laboratory that a radioactive atom of carbon does exist in nature, and that it decays at a rate which would make it useful for dating artifacts within human history. Yet it normally occurs in such small amounts in the biosphere that it took a special effort, and the development of new technology, before its inventor, William F. Libby of the University of Chicago, was able to prove in the early 1950's its usefulness in dating once living material. Since its inception, this method has undergone a number of significant changes related, in particular, to the sensitivity of the technology used to measure carbon-14. However, the basic concept first devised by Libby still applies, and can be easily understood without having to learn about radioactivity, isotopes, decay rates or the chemistry of carbon.

### *The concept of carbon-14 dating:*

An easy way to understand how carbon dating works is to use an example where something changes at a constant rate over time. An often-used analogy is that of an hour-glass in which fine sand falls from the upper chamber into a lower chamber at a steady rate, and it takes one hour for all the sand to empty from the

upper chamber. Another analogy that most people can appreciate is that of heat dissipating from a hot cup of coffee. Whether that coffee was bought at Starbuck's, Tim Horton's in Canada, or a local café in Turin, Italy, it is hottest at the time of purchase, but cools as time progresses. How cool that coffee is can tell us how long ago it was purchased. The cooler the coffee, the longer since the time it was poured into the cup.

In the C-14 dating technique, radioactive carbon is analogous to the sand falling into the lower chamber of an hour-glass, or to the heat dissipating from a cup of coffee. The amount of sand can be measured by weight; heat lost from a cup of coffee can be measured by using a thermometer. But to measure the amount of radioactive carbon-14 in a sample requires highly sophisticated technology that costs into the millions of dollars. It is a very costly enterprise.

Libby could measure directly the amount of radioactive carbon in a sample, but he needed to estimate how much carbon-14 was present when the organism died before he could determine its age. Libby, of course, could not go back in time to measure the carbon-14 content of an organism when it died, but he could surmise, based on the present amount of carbon-14 in the biosphere, what that amount might have been.

While alive an organism continuously ingests carbon in its diet, with most carbon being stable carbon, and a minute amount being unstable carbon-14. How much of the total carbon in the body of an organism is carbon-14 depends on the ratio of carbon-14 to stable carbon in the biosphere. The reason for this relationship has to do with the nature of the carbon being incorporated into the biological molecules of the organism. The carbon being used comes from the atmosphere and how much carbon-14 is in the atmosphere determines how much of the total carbon in an organism ends up being carbon-14.

Direct measurements in today's biosphere gave Libby the ratio of carbon-14 to non-radioactive carbon. How quickly carbon-

14 decays back into nitrogen was estimated in the laboratory by measuring its decay over a short period of time, then extrapolating that into years. Any amount of carbon-14 decays to half its value in about 5700 years. This is known as its half-life. Therefore, assuming (1) that the amount of carbon-14 in any organism while it is living is a small but constant percentage of the total carbon of the organism based on the ratio present in the biosphere, and (2) that carbon-14 disappears at a constant rate only after the organism dies, Libby could determine the age at which that organism died by measuring the amount of carbon-14 it still possessed.

There is a third assumption that was not considered when this method was first devised, but has become a significant factor in determining the age of any archeological artifact. No new carbon-14 was added to the artifact since the organisms which make up the artifact had died. It is obvious that the dead organism, itself, cannot ingest any new carbon-14, but an artifact could be contaminated by other living organisms which become associated with it during its history. Therefore the history of an artifact has become a very important factor in deciding on the validity of the carbon-14 dating results.

Because of the success of this technique, it opened up a whole new area of scientific study, and this led to Libby receiving the Nobel Prize in 1961.<sup>98</sup> What is not well known is that shortly after receiving this prize, Libby approached the Italians to seek permission to carry out carbon-14 dating on the Shroud.<sup>99</sup> Obviously, Libby was well aware of the significance of this cloth, and being able to apply his technology to this cloth would greatly enhance the acceptance and use of his technique. However, in

---

98. For a detailed account of the history of carbon-14 dating see, Lloyd A. Currie, "The Remarkable Metrological History of Radiocarbon Dating [II]," *J. Res. Natl. Inst. Stand. Technol.* 109, 185-217 (2004).

99. Ian Wilson, 1998, p. 180, cites Pierluigi Baima-Bollone, "why Hasn't the Shroud Been Dated with the Carbon-14 Test?", *Stampa Sera*, Turin, 17 September 1979, as quoted and translated in Sox, *The Shroud Unmasked*, op.cit., p.82.

1961, his technique required the destruction of 870 square centimetres of the cloth leaving quite a large noticeable hole, whether it was a narrow strip from along the side, or a square chunk removed from a corner. The Shroud authorities did not have to think twice to reject Libby's proposal.

By 1978, Professor Gove of the University of Rochester had developed a new way to determine the amount of carbon-14 in a sample. Rather than using devices to measure the radiation coming directly from a sample, he took advantage of a method which counted the individual atoms of a sample. In this method, called accelerator mass spectrometry, the radioactive carbon-14 atoms could be separated from the lighter non-radioactive carbon atoms and counted. This technique requires far fewer atoms of carbon-14 and therefore needs far less of a sample. Before the 1978 STURP investigation of the Shroud, he showed that his technique was successful at determining the age of archeological artifacts of known age. But his technology was not considered developed enough to be included with the STURP study.

*Why use carbon-14 dating on the Shroud?:*

Since every single piece of datum collected by STURP, and the pollen grain analysis by Frei<sup>100</sup>, were clearly in favour of the Shroud being authentic, it seems redundant to consider applying this dating technique to the Shroud. Moreover, even if the C-14 dating agreed with the multitude of supporting facts, the question of the Shroud's authenticity would still remain unanswered. *It may be old enough to have wrapped the body of Jesus, but was the image on the Shroud really that of Christ in the first place?* However, the pressure to sacrifice a small piece of this cloth on the altar of science had been building ever since STURP, and it continued to mount from the press, the scientists, the C-14 dating laboratories,

---

100. Max Frie, a Swiss criminologist took sticky tape samples during the 1978 STURP examination and found pollen grains from plants that only grow in desert regions of Palestine.

the Shroud authorities in Turin, as well as the Vatican in Rome. Indeed, Pope John Paul II, considered the most progressive pope in modern history, had decided to have the test done even before the scientists sought his approval. Any voice protesting this violation to the cloth was simply not heard.

When the carbon-14 dating was finally approved, a carefully and meticulously designed protocol was developed to ensure every possible precaution was made to avoid obtaining a false result. The sampling protocol involved seven laboratories, two measurement techniques (the older and proven decay analysis, and the newer but less tested accelerated mass spectrometry), and multiple samples representing different regions of the cloth. Yet something went terribly wrong.<sup>101</sup>

Shortly before the event, for whatever reason, the scheme was changed to restrict the number of laboratories to three (all using the newer accelerated mass spectrometry) and to reduce the number of samples to three.

In protest to the change in plans, and in respect to the other laboratories, the three chosen laboratories threatened to pull out. If they were measuring the age of a cloth that covered a pharaoh, or any other historic figure other than Christ, they would likely have stayed out of the fray. But when the Shroud authorities countered by saying they would give the job to a couple of Italian facilities, the three labs decided to continue their involvement. This, in itself, should have sent warning signals to the carbon-14 dating laboratories that something was amiss, but the prize in this case was too attractive to pull out of the race.

But the intrigue and political posturing did not stop here.

---

101. From Lloyd A. Currie, "The Remarkable Metrological History of Radiocarbon Dating [II]," *J. Res. Natl. Inst. Stand. Technol.* 109, 185-217 (2004), p. 202.

*Collecting the samples:*

Prior to the day for the actual cutting of the cloth, there were several meetings to discuss protocol and from where the sample pieces would be taken. Professor Riggi was assigned to cut the pieces, and Professor Gonella (the scientific advisor to Archbishop of Turin, Cardinal Ballestrero<sup>102</sup>) supervised the event. But while the Shroud lay in front of them ready to be cut, with cameras running, and with the representatives from the different laboratories waiting for their samples, these two men argued for more than an hour as to where this piece would be taken.

Emotions had superceded the logical, scientific approach, and months of planning had become meaningless. Riggi took charge and removed only one piece and only from the location he wanted. At the same time, none of the representatives sent to collect their sample for C-14 dating seemed the least bit bothered about the suitability of the sample. After a long wait during which time they witnessed considerable theatrics, they were relieved simply to get any piece at all, even if it were taken from just one location on the Shroud.<sup>103</sup>

The question of the sample's suitability was largely masked by the drama associated with its removal. The tools used to cut the Shroud were laid out like surgical instruments; and the scientists wore lab coats and resembled surgeons in an operating

---

102. Ballestrero, under the direction of ex-King Umberto II, permitted the 1978 STURP scientific investigation, but not the radiocarbon dating at that time. With improvements at detecting carbon 14, a much smaller sample could be used. In 1988, under the direction of the Pope, he permitted samples to be cut, and he personally supervised. Gonella was the Cardinal's scientific representative, and after the carbon 14 dating results were announced showing that the cloth was medieval, Ballestrero declared the cloth a fake. His response suggests that he never truly accepted its authenticity in the first place.

103. That something was amiss came to light years later when Riggi donated fibres to other scientists to test the physical properties of the cloth. At the time Riggi removed the piece for C-14 dating, he held back these fibres without official approval, and these subsequent tests that show the cloth to be much older than medieval are not officially recognized as being valid.

room. During this performance, it was easy to lose sight of the fact that only one location was being tested and that the piece being removed was highly questionable for C-14 dating. Despite veering from the approved protocol to remove pieces from more than one location, every eye was carefully scrutinizing how the single piece was cut from the cloth with aseptic surgical equipment, as a video camera captured every moment. After removing the piece, Riggi divided it into two pieces, and divided one of these pieces into three.<sup>104</sup> And to add mystery to the whole affair, the pieces were given to Cardinal Ballestrero and Michael Tite, from the British Museum, and in an adjoining room away from the view of others and the video camera, they placed the pieces into carrying canisters. They then brought these canisters back to the operations room to hand them over to the representatives from the different labs. All the attention to collecting the samples cloaked the fact that the pieces to be tested came from only one location on the Shroud.

Regardless of the flaws in the collection procedure, the carbon-14 dating labs willingly accepted their samples and proceeded to carry out their work. And what they discovered was quite unexpected.

*The Shroud of Turin is declared a Fake:*

The sample was removed from the Shroud on April 21, 1988, and in two news conferences held simultaneously in Turin and at the British Museum, London, on October 13, 1988, the results from the three carbon-14 laboratories were announced. The manufacturing of the Shroud was dated between AD 1260-1390, with 95% confidence. Subsequently, the Shroud could not have wrapped the body of Jesus Christ. The carbon-14 dating declared it a fake.

---

104. Ian Wilson, "The Blood and the Shroud," p.309.

The excitement and commotion that accompanied the official announcement that the Shroud was dated to the Middle Ages can only be described as media mayhem.

And to add to this tragedy in science and church relations, the official scientific paper describing the results appeared in one of the world's most prestigious scientific journals, *Nature*,<sup>105</sup> and had attached to it an unheard-of number of authors—twenty one. This, in itself, seems an antic, for no respectable journal, especially *Nature*, would normally consider this ridiculous number of authors, each of whom is supposed to be involved in writing the paper and making a significant contribution to the work. Often numerous participants in a project may be thanked for technical services, but these contributions do not warrant authorship privileges. By doing so with the paper on the Holy Shroud, it seemed that Science, which confines itself to the natural world, was laughing at the folly of any belief in the supernatural.

Moreover, three of the C-14 dating scientists who spoke for this multitude of authors during the 1988 press conference that announced these results, were pictured standing in front of the impressive pillars at the entrance to the British Museum with arms folded and frowns on their faces.<sup>106</sup> Like teachers reprimanding students for foolish thinking, they seemed to be saying, "So there religion, take that." And to explain how an image, this impossible image, could have been created by a medieval prankster when modern technology has yet to produce such an image, Professor Edward Hall (1924-2001) of the Oxford group arrogantly jested, "Someone just got a bit of linen, faked it up, and flogged it."<sup>107</sup>

---

105. Damon *et al.*, Radiocarbon dating of the Shroud of Turin, *Nature* 337, 16 February 1989, pp. 611-615.

106. Newspaper photo of Edward Hall, Michael Tite, and Robert Hedges, with the headline, "Turin Shroud shown to be a fake," in *The Independent*, London, 14 October 1988

107. As reported by Michael Sheridan and Phil Reeves in, "Turin Shroud shown to be a fake." *The Independent*, London, 14 October 1988

The C-14 dating results sent an intellectual and emotional tidal wave of shock through those who once thought the Shroud had to be real. Even though all physical, chemical, forensic, and historic evidence verified its authenticity, the carbon-14 dating results seemed to be the fatal blow that rendered the image on the Shroud meaningless. It was the knock-out punch. Despite an overwhelming amount of scientific support for the Shroud's authenticity, one small, methodologically questionable measurement was interpreted as ironclad evidence that the Shroud was a forgery created by a medieval artist and prankster.

The effects were devastating and long-lasting. Even to this day, I meet people who refuse to seriously consider the Shroud because of the C-14 dating results, regardless of the wealth of repeatable scientific evidence that does not agree with its medieval date. For some reason, the C-14 dating results are given far more weight than what the method warrants. The sober truth is that the young age of the Shroud was an anomaly that needed further investigation. As it turned out, this result effectively put an end to any further serious scientific investigations of the Shroud.

*The true significance of the carbon-14 dating:*

There may be a combination of circumstances which resulted in the C-14 dating results being considered as the definitive scientific evidence against the authenticity of the Shroud. One factor attributing to this misconception may have been the manner by which the STURP scientists conveyed to the public their 1978 findings. On completion of their study, STURP failed to capture the enthusiasm of those interested in the Shroud because they intentionally concentrated only on producing legitimate verifiable scientific facts. For them, this meant their work could only appear in peer-reviewed scientific journals, and they avoided the popular press. STURP was well prepared to carry out the science, but they were somewhat naive with respect

to disseminating their results and in conveying their significance to the public. They were certainly successful at producing *bone fide* science,<sup>108</sup> but this type of science is the purview of only a small segment of our population. It does not resonate with the average person who wants clear, concise answers to simple questions.

Is the Shroud authentic? STURP said it could not say.

Is the man on the Shroud Jesus Christ? STURP said it could not say.

Their manner of describing the physical facts of the Shroud was uninteresting to the average person, or the press, which seemed indifferent to their reams of data. Rather than interpreting their findings as significant scientific proof of the Shroud's authenticity, STURP's summary focussed the public's attention on further testing, which, presumably, would provide the evidence that 5 days of around-the-clock examination could not.

By concentrating on what they could *not* say about the Shroud, rather than what they could say, and by concluding that further tests were needed, STURP fostered an attitude of anxious anticipation of what any future scientific studies could show. In other words, new data, especially that which showed the Shroud a fake, would become far more significant than the wealth of information they had already amassed for its authenticity. In fact, by the public's reaction to the 1988 C-14 dating, which deemed the Shroud to be medieval, it was evident that all the results garnered by STURP in 1978 were simply ignored. No one questioned the fact that the C-14 dating was the anomaly, a single negative result floating in an ocean of positivity.

Unlike STURP with its voluminous amount of positive evidence for which they would not say anything definitive, the radiocarbon scientists did not allow the public to make up their own minds regarding the interpretation of their results – they said something very definitive. The Shroud was too young to have

---

108. For a list of all the articles published in peer-reviewed scientific journals, see [www.shroud.com](http://www.shroud.com)

covered Christ. Even the words they used to describe their findings were steeped in authoritatively sounding official scientific language:

The results of radiocarbon measurements at Arizona, Oxford and Zurich yield a calibrated age range with at least 95% confidence for the linen of the Shroud of Turin of AD 1260-1390 (rounded down/up to the nearest 10 yr). These results therefore provide conclusive evidence that the linen of the Shroud of Turin is mediaeval.

The results [...] show that none of the measurements differs from its appropriate mean value by more than two standard deviations. The results from the three control samples agree well with previous radiocarbon measurements and/or historical dates.<sup>109</sup>

In response to the C-14 dating results, many Shroud supporters were disappointed and even disillusioned, whereas the skeptics could finally breathe a sigh of relief. The Shroud is not real; there is now a scientific test to 'prove' the cloth could not have been around during the crucifixion. Science had triumphed over religion. But this celebration should have been more cautious because the C-14 dating did not prove the Shroud to be a fake; it simply showed that the piece of cloth on which the C-14 dating was done had more C-14 in it than would have been expected for a cloth that was 2000 years old. This result supported the belief that the cloth was manufactured during the medieval period, but the result alone did not eliminate other possibilities. In light of what was previously discovered about this cloth, the excess carbon-14 needed to be explained. It should never have been

---

198. P.E. Damon *et al.*, 1989, *Nature* 337, p.614

described as “conclusive evidence,” since it was an interpretation of a fact, not a fact in itself.

Whether you believe the Shroud is medieval or not, there are two very important unknowns that must be assumed to be true in order for the carbon-14 dating method to give an accurate date. First, the amount of carbon-14 in the material when it was first manufactured, and second, no carbon-14 was added to the artifact after it was manufactured. Any variation in either of these two assumptions would skew the C-14 dating results. Thus, the amount of carbon-14 in any artifact can only be an interpretation of that artifact’s age, and to be accepted as fact, it needs to be corroborated by its history or other dating methods. Although the C-14 dating of the Shroud was at odds with all other means of dating, it alone was used to deem the Shroud a fake. The desire to find at least one piece of scientific evidence that could refute the Shroud was so strong, and the public’s general understanding of the measuring technique so weak, that the radiocarbon laboratories could confidently declare the Shroud a fake without being challenged.

The unswerving belief in the validity of the C-14 dating of the Shroud has subsided since 1988, and a number of possible explanations for the cloth being dated so young have gained support.<sup>110</sup> Yet, the C-14 dating results continue to raise questions in the minds of would-be Shroud believers, because, for the most part, these results were so emphatically stated that questioning them seems an exercise in self-deceit.



---

110. See Lloyd A. Currie, “The Remarkable Metrological History of Radiocarbon Dating [II],” *J. Res. Natl. Inst. Stand. Technol.* 109, 185-217 (2004). This article provides a history of the carbon-14 dating method, as well as a scientific explanation of how it works, and surprisingly devotes a section on dating the Shroud of Turin. Even outside Shroud circles, the carbon-14 dating of the Shroud was a significant moment in history. The article looks back at what may have gone awry during the mayhem generated by the carbon-14 dating of the Shroud, and agrees that the results reported in 1988 were overstated.

## Chapter 15

### Resolution of the C-14 Dating Anomaly

It was unfortunate that the calm voice of reason was not to be heard above all the commotion that the C-14 dating results generated. There were accusations of deceit and fraud, or tampering with the samples, but none of these claims were founded on any reliable evidence.<sup>111</sup> Ian Wilson, arguably one of the world's leading Shroud historians, tried valiantly during the 1998 Turin Symposium to calm the waters created by the C-14 storm by carefully reiterating where the procedures may have gone awry. He considered it inappropriate and unwarranted to suspect any form of deliberate deceit since he felt that the radiocarbon dating scientists were "basically honest individuals who conducted an honest test using the best possible scientific methods."<sup>112</sup> He listed three possible scenarios, dismissing all but one.

The first scenario was isotope exchange in which carbon-14 was added to the cloth during the intense heat experienced

111. See Ian Wilson, "The Blood and the Shroud." Weidenfeld & Nicolson London, UK, 1998. p.186.

112. Ian Wilson, An appraisal of the mistakes made regarding the Shroud samples taken in 1988-and a suggested way of putting these behind us, Proceedings of the 1998 Turin Symposium, Science and the Shroud, accessed May 2014 at: [www.shroud.com](http://www.shroud.com)

during the 1532 fire. Radiocarbon laboratories tested the effect of heat on the chemical makeup of elements and found no effect. The second possibility was just being raised informally in 1998, and it claimed that the piece taken for C-14 dating was not representative of the original cloth. This piece was part of the cloth that had been repaired with new material in the Middle Ages. Hence, the C-14 dating was accurate, but the date of the sample did not represent the rest of the cloth. Wilson was dead-set against this explanation stating:

If you go down that road, you are asking for the Middle Ages to have been able to perfectly duplicate the Shroud's weave, dubious ground in itself, and in my estimation extremely unlikely. For had such a match been anything but perfect I would have been bound to spot it when I minutely examined the Shroud back in 1973, and I saw nothing of this kind. So please simply don't believe it."<sup>113</sup>

Finally, Wilson settled for the best explanation being the presence of a biofilm created by living microbes that got on the Shroud as a result of human handling and added new carbon-14 to the cloth. This explanation came from the work of Dr. Garza-Valdes, a physician and microbiology enthusiast, who found evidence for this biofilm on snippets of Shroud fibres that were removed during the 1988 C-14 dating procedure, and retained by Giovanni Riggi who was responsible for cutting the piece off the cloth. Since these fibres were collected and kept without the approval of the Shroud authorities, Wilson could only lament that the "whole credibility of Dr. Garza-Valdes's findings lacks the appropriate accompanying validation."<sup>114</sup>

---

113. Wilson, *ibid.*

114. Wilson, *ibid.*

Eventually, after Ian Wilson penned these options, the C-14 dating anomaly was resolved. And of the three possibilities he noted, it was the one scenario he said, “simply don’t believe” that became the best explanation. As it turned out, the piece tested for C-14 dating was not a true representation of the rest of the Shroud.

At first, this explanation seemed incredulous to most people because it implied that the selection of this region was done by those who were incompetent. How could this mistake be made when there were months of planning before the section was taken? And after the decision was made, was not the entire procedure recorded on film? Were not representatives of all the C-14 dating laboratories present to receive the sample they were to measure? The events leading up to the removal of the sample give the strong impression of a carefully planned and well-orchestrated event. How could a simple oversight, that of choosing an inappropriate piece, have occurred? Quite easily, if you take human nature into account.

Consider yourself a devout believer in the authenticity of the Shroud, and that you venerate it as the actual cloth that touched the body of Jesus Christ, your risen Lord. Then consider how much of this irreplaceable and priceless piece of material you would be willing to destroy? Probably none at all! For an art connoisseur, cutting the Shroud would be equivalent to putting an unnecessary hole in the Mona Lisa. It is little wonder that Riggi and Gonella argued for about two hours before Riggi removed any piece at all. And this piece came from an already damaged area of the Shroud, right beside the piece that was removed in 1973 for textile analysis by Professor Raes. Riggi probably believed that this region was still a good representation of the rest of the cloth, but a region that was already marred. Little did he realize what this region was really composed of.

*Benford and Marino:*

For many scientists who were looking for any proof to disavow the authenticity of the Shroud, the carbon-14 dating results were enough for them to set the Shroud aside and to turn their attention to other things. However, the Shroud continued to generate interest, both inside and outside science, and it took another set of eyes to look at the Shroud in a different way to find the answer to this conundrum. It was an unlikely person by the name of Sue Benford, who became convinced that the carbon-14 samples were part of a repaired area that was re-woven in the Middle Ages. She along with her second husband, Joe Marino, struggled to get Shroud scientists to take them seriously.

Part of the reason why Shroud experts ignored Benford and Marino was their total lack of any scientific credentials. Marino was a former benedictine monk with training from St. Louis, Missouri, and Benford had been a registered nurse educated and working in Dublin, Ohio. They met through the internet because of their common interest in the Shroud, and by this time, Benford had already been a noted figure in the press. She was a cancer survivor from her childhood, became a three-time world champion weight lifter for the 97 lb class, was a divorced mother with two children, and she had patented and sold a diaper rash therapy for infants. She was also interested in mysticism, and felt that she was gifted with spiritual insight. Her book, *Strong woman: unshrouding the secrets of the soul*,<sup>115</sup> documents her life story and how she came about communicating with the spiritual world. She claimed to have received insight about the Shroud by talking directly with Jesus. Not quite the credentials to make the Shroud enthusiasts stand up and take notice.

Marino gave up the priesthood to marry Benford and together they tried to promote the view that the carbon-14 dating was done on a repaired patch of the Shroud. Eventually they captured

---

115. M. Sue Benford (2011) "Strong Woman, Unshrouding the Secrets of the Soul." Cradle Press LLC

the attention of Raymond Rogers (1927-2005), the chemist who was a leading expert in thermal analysis, and the Director of Chemical Research for the 1978 STURP investigation. He was not particularly happy with their theory.

Raymond Rogers and Barrie Schwartz worked together on STURP and remained in contact over the years. Rogers became disillusioned with the Shroud after the C-14 dating, and for many years, he gave it up entirely, whereas Barrie continued to promote it. Rogers considered these new reports to explain the young age of the cloth as wild guesses from the lunatic fringe who were simply trying to find ways to maintain their belief in the Shroud.

When Rogers first heard of the re-weaving hypothesis, this was the last straw and he called up Barrie to complain about yet another crazy idea to invalidate the C-14 dating.

"This is nonsense," he told Barrie. "I can prove these people wrong in five minutes."

Barrie challenged him. "Well, Ray, go for it."<sup>116</sup>

Barrie reports that two hours later, Ray phoned him to say, "They are right!"

Being a key figure for the 1978 STURP team, Rogers had samples of the cloth from the 1978 investigation, as well as pieces from Raes' 1973 textile study. He would later obtain samples retained by the carbon-14 dating laboratories to confirm his findings, and his observations left no doubt in his mind that the portion removed from the cloth showed signs of being re-woven.

When challenged by Barrie Schwartz, Rogers examined under the microscope fibres he had stored in his safe. He immediately saw that the fibres were not uniformly pure linen, but were made up of linen intertwined with cotton. Cotton was not used to make the original cloth, but had been used to mend the cloth. Linen does not take up dye well, and any new linen could not be stained

---

116. Shroud of Turin, The new evidence. Youtube at: [http://www.youtube.com/watch?v=0FRU92fJO\\_g](http://www.youtube.com/watch?v=0FRU92fJO_g)

to look old. However, cotton does take up dye, and can be stained to appear like it is part of the original cloth.

The type of weaving used to mend the area is called French invisible re-weaving which was used extensively in the Middle Ages to repair valuable fabric. As Ian Wilson can attest to, this patch was totally invisible to him when he had direct access to the cloth, which was exactly what the weavers intended.

After the 1988 C-14 dating, there have been no further scientific tests done directly on the Shroud,<sup>117</sup> although many were called for, especially to test the biofilm hypothesis by Garza-Valdes. Within a few weeks of his death from cancer, Roger's paper was published in a well-respected peer-reviewed chemical journal, the results verifying the repaired patch hypothesis. Besides containing cotton, which the rest of the cloth does not, this portion of the cloth also has dye and mordant used to make the patch indistinguishable from the rest of the cloth. These chemicals are found no where else on the Shroud. In addition, the UV microscopy done in 1978 clearly indicates that this repaired patch region shows up differently to the rest of the cloth, again demonstrating that it is not a true representation of the cloth. Sceptics may still question Benford and Marino based on their lack of scientific credentials and the manner by which

---

117. Since the 2002 preservation and restoration project, the cloth cannot be accessed for direct study, although fibres obtained prior to 2002 can be examined as was done by Raymond Rogers. The fibres used by Rogers were obtained with official approval, but Riggi also kept fibres without approval when he cut the C-14 dating sample. These fibres have since been used by Giulio Fanti, a professor of mechanical engineering at Padua University, to run mechanical tests which show the fibres to be much older than the C-14 dating results. As reported by Doug Stranglin in USA Today, March 30, 2013, "The new test, by scientists at the University of Padua in northern Italy, used the same fibers from the 1988 tests but disputes the findings [of the C-14 dating]. The new examination dates the shroud to between 300 BC and 400 AD, which would put it in the era of Christ." The tests done by Giulio Fanti, have not been published in a peer-reviewed scientific journal. Also, because of the manner Fanti received these fibres from Riggi, his findings are not considered relevant.

Benford came up with the idea, but they cannot discredit the reproducible scientific facts that have since been reported. Benford eventually died of cancer in 2009 at the age of 51, but Marino continues to carry on her legacy.

Ironically, the C-14 dating was accurate, for it dated the patch to the time when it was likely added to the Shroud. But as for the true date of the Shroud, any further direct testing would be at best ambiguous. In 2002, the Shroud secretly underwent restoration and preservation approved by the Vatican, and although everything was videotape, and every piece taken from the cloth categorized and stored, this procedure effectively took the Shroud out of the reach of scientific testing. The textile experts who restored the Shroud may have kept all discarded material for future forensic analysis, but this material is no longer directly associated with the cloth, and as such, will forever be suspect. Also the preservation procedure which now stores the Shroud in an air-tight, climate controlled container filled with inert gas may have skewed its carbon-14 content. This is unlikely, but the cleaning and preservation process could be used by Shroud supporters to explain the presence of too much carbon-14, or by Shroud skeptics to explain too little carbon-14. Direct study of the present state of the Shroud is no longer meaningful for Science.

It was an exciting time, from 1898 and the first photograph of the Shroud to 2005 and Rogers' verification of the repaired patch hypothesis. Now that direct examination of the cloth is no longer a viable option for scientists, and the carbon-14 dating anomaly has been resolved, attention is being focussed on the image and how it may have been created. This work extends beyond what we currently know about our physical world, and explores the interaction between the natural and supernatural. It may be beyond the horizon of everyday science, which concerns itself only with the natural, but this should not stop us from peeking over this horizon to take a look.

*Despite the general consensus that science needs to be confined to the physical world of time, space and matter, the study of the Shroud has the potential to expand the value of science into the realm of the supernatural.*

For many of us raised in a technologically advanced secular society which views scientific knowledge and theories as holding absolute truth, the invisible world of the supernatural remains not only invisible, but non-existent. It is not easy to overcome this bias, and to believe that a reality exists beyond the limits of the natural world. Only at times of extreme distress does a person or nation turn its heart towards an invisible supreme being who gives us comfort for today and hope for the future.

From the evidence provided in this book, some of us will be at ease in concluding that the Holy Shroud of Turin provides solid, reproducible scientific evidence that the supernatural world does exist, and with the Holy Shroud we stand at the brink of expanding our understanding of reality. But the facts alone are not enough to assuage unbelief, and a number of theories to rebut the Shroud's authenticity are adhered to by many intelligent people.

As we complete the journey this book has navigated the reader through, it is appropriate to address some of the more popular theories that oppose the Shroud's authenticity. It is not my intention to criticise or malign anyone who approaches the Holy Shroud from a very different world view to mine. We all see reality, including myself, through our own set of theologically tinted glasses. What I hope to convey is that biases are often more important than the facts themselves when it comes to deciding if the Holy Shroud of Turin is a genuine artifact of the resurrection of Jesus Christ.



## Chapter 16

### The Shroud and Forgery

In 1858, Abraham Lincoln said, "You can fool all the people some of the time, and some of the people all the time, but you cannot fool all the people all the time."

In response to being duped by his rival showman, P.T. Barnum, David Hannum lamented in 1869, "There is a sucker born every minute."

It seems that part of being human is to seek the sensational, to indulge in the mystical, and to somehow connect with the eternal. And many of us are willing to put aside logic and intelligence to believe in something that gives meaning to life. Religious relics remain relevant because it is our human nature to place an importance on objects which somehow bring us closer to knowing who we are, and why we really exist. And when we become so closely linked to an object or idea that it touches our hearts, it becomes almost impossible to see the facts as they really are. All of us have been willing to believe in a fantasy at one time or another; some of us can be fooled all of the time; and each of us can, at any moment, become conned into believing a hoax or a lie. Having been disillusioned once, we believe we are wiser and are less likely to fall into the same trap. As the familiar adage goes, "Fool me once, shame on you. Fool me twice, shame on me." Our

reaction to a hoax, or even something as insignificant as a practical joke, is often quite predictable.

There may be many more examples when dealing with the Shroud, but I have been involved in one instance where a person's personal reaction to the Shroud affected their assessment of a piece of academic work which was quite tangential to what was being done.

Several years ago, I helped organize a scholarship contest in which university students wrote a critique of a book on faith and science. There were over 30 independent judges involved, and after narrowing the field to ten entries, all the judges were asked to rank these ten. After the winners were announced one judge was quite perturbed that what he considered to be the best critique of all, bar none, was ranked the lowest of the ten. The book used for the contest commented briefly on the Shroud, and concluded that, based on the scientific evidence, there was no reason to reject its authenticity. That was the red flag that swayed this judge's opinion. The one critique he thought was the best was the only one of the ten which commented negatively on the Shroud.

What caused this one judge to pick a critique as the best when all the other independent judges disagreed with him?

Prior to the C-14 dating in 1988, which was said to prove the Shroud to be a fake, this gentleman was thoroughly convinced that the Shroud was authentic. Whether he used the Shroud to help support the claims of the Gospel is not known, but when the C-14 dating results were announced to show that the Shroud was a medieval forgery, he became embittered, believing he had been the victim of a hoax all along. When he read a critique which commented negatively on the Shroud, that comment was magnified in importance, totally overshadowing the rest of the content in the critique. It was as if the Shroud, which he had loved, jilted him, and he was unaware that his emotions now affected his judgement. And because he turned away from the

Shroud so completely, he never heard of the report that the C-14 dating was conducted on a patch of the Shroud that was repaired. He had been fooled once by this hoax; it was never going to happen again.

How the Shroud can be viewed ranges from total rejection, as for this judge in the scholarship contest, to total acceptance that the image was created as a consequence of the resurrection of Jesus Christ. The same polarization of opinions has occurred in the creation/evolution debate. At the one extreme, evolution is a natural process and God does not exist, and on the other, the world was created by God in six literal days as described in Genesis 1. The theory of evolution permeates all of academia, and since it challenges a literal interpretation of Scripture, Christians have paid special attention to it. Many have come up with ways to incorporate some, or all, of this theory into their theology. This has resulted in a number of positions on origins which compromise either evolution or young-earth creationism.<sup>118</sup>

A similar attention, however, has not been paid to the Shroud. It is not a subject for academic study; no one is forced either by the church or educational system to seriously consider it; and for those who do find it irritating, it is simply a minor annoyance or a conundrum they need to settle for themselves. To most people, the Shroud either is real or fake, or they simply do not care to voice an opinion, and few positions of compromise have had to be developed. Nonetheless, these positions do exist and will be described in the following chapter. This chapter is devoted to the one extreme which sees the Shroud as a forgery, a hoax not worthy of any serious thought.

---

118. Origin theories can be categorized into Atheistic Evolution, Deistic Evolution, Theistic Evolution, Old Earth Creationism (the Day/Age Theory and the Gap Theory) and Young-earth Creationism. See chapter 9 in R.G. Chiang, *Rescuing Science from Preconceived Beliefs*, Doorway Publications, Ancaster, ON, Canada. 2011.

*The image viewed as a painting:*

I have been told that virtually all the American scientists who went to Turin in 1978 to study the Shroud first hand were challenged by what they found, and many of them had what can best be described as a spiritual experience.<sup>119</sup> Unfortunately, the number whose faith was kindled, or rekindled, cannot be verified for no official record was ever kept. The American investigation was purely scientific, and members were encouraged to keep their feelings to themselves. We do know from the official concluding statement that not a single scientist who went to Turin could say the Shroud was a forgery. Yet one prominent scientist associated with the team, who was given samples from the cloth to examine but did not accompany the rest to Turin, reported that he found evidence that the Shroud was a medieval painting. That was Walter McCrone (1916-2002).

In 1978, McCrone was already considered the world's leading expert in detecting artistic fraud, and he also gained considerable notoriety when he declared, in 1979, that the image on the Shroud was a medieval painting created by a clever artist to fool the gullible. Being a well-respected scientist, and describing himself as an official member of the American team, his findings were taken very seriously, and until the C-14 dating results in 1988, they were the only piece of scientific data which contested the Shroud's authenticity. However, McCrone was not your typical STURP scientist.

Unlike the other members of the American team who spent months preparing for the actual investigation and who were involved in dry-runs to ensure there would be no time wasted with the Shroud in their hands, McCrone became an official part of STURP *after* the Turin event. When Rogers returned to the US from Turin in 1978, he lent McCrone 32 of the sticky tape samples of fibres for microscopic examination. When asked by John Heller, the blood expert on the team, why Rogers would lend *ALL*

---

119. Personal communication with Thaddeus Trenn, 1992.

the Shroud samples to McCrone, Rogers is reported to have said, "Walter's a good man. I've known him for about thirty years."<sup>120</sup>

After McCrone was given the fibres, Jackson and Jumper asked the board of trustees of STURP to extend an invitation to McCrone, who accepted. However, this association was short-lived. After submitting two papers of his study on the fibres, and having both papers rejected by peer-review, McCrone withdrew from STURP.<sup>121</sup>

It is a wonder how McCrone could be persuaded, based on his findings, that this image was, in fact, the product of a medieval artist. In reexamining how McCrone became involved with the Shroud project, his own personal interest in promoting his scientific company, and the fame he gained over the relatively short time his claims were being promoted by the media, a plausible answer can be formulated. Regardless of the evidence, the circumstances were rife for him to reject the authenticity of the Shroud. In other words, the evidence he obtained against the Shroud, although quite meagre, could have persuaded him that the image was created by paint. Indeed, McCrone may have already developed the inclination to undermine the whole STURP enterprise even before the team went to Turin.

The McCrone affair is somewhat murky, but circumstances did transpire which made him hostile to STURP, prior to receiving the fibre samples from Rogers. What can be verified is that McCrone had a long standing interest in the Shroud and had already been in conversation with the US Holy Shroud Guild in New York to do work on the fibres collected in 1973 for Professor Raes in Belgium. McCrone and the Guild waited for 18 months before the 1973 Turin commission made their findings public, at which time, they knew that Raes had enough samples for McCrone to work on. McCrone flew to Belgium to present his

---

120. John H Heller, *Report on the Shroud of Turin*, 1983, p. 122.

121. John H. Heller, "Report on the Shroud of Turin," Houghton Mifflin Co., USA, 1983, p.184.

plans to Raes directly. Unfortunately for McCrone, Professor Apers, a colleague of Raes, rejected these plans and McCrone left empty handed. At the same time, Turin demanded that the samples should be returned to them, all this occurring before STURP was officially formed.<sup>122</sup>

Then, as STURP was being formed, another curious event occurred. Apparently McCrone was introduced to the American STURP project and signed their agreement that all their findings, including his, were to be reported collectively. But McCrone continued to seek samples from the Shroud independent of STURP and in April, 1977, he asked Rev. David Sox to speak directly with ex-King Umberto for permission to do work on the Shroud. The ex-King expressed no objections to McCrone's plans.<sup>123</sup> But this approach by McCrone is described in 1998 by Ian Wilson, to be "most ill-advised." For reasons not provided by Wilson, Wilson went on to conclude that McCrone's actions:

resulted in his [McCrone's] peremptory dropping from the 'hands-on' STURP team of 1978 and consequent failure to gain close access to the Shroud that he would otherwise have had.<sup>124</sup>

This was not a good start for McCrone's interaction with STURP.

Besides his independent interactions with Shroud authorities, and his bumpy ride with STURP, another complicating factor was McCrone's personal involvement with a company he founded, a company that promotes the use of microscopic techniques in scientific research and education. If he were able to show that the Shroud was a medieval painting by using the microscopic techniques provided by his company, then both he and his company would greatly benefit from the publicity. And the

---

122. Ian Wilson, 1978, p. 203.

123. Ian Wilson, 1978, p.205.

124. Ian Wilson, 1998, p. 78.

publicity generated by this type of sensationalism was not new to McCrone, since he had done the very same thing once before, in 1973, with his analysis of Yale University's Vinland Map.

The Vinland Map, on a parchment thought to be from 1440, was obtained by Yale University in 1957, and shows the outline of eastern part of North America (a.k.a., Vinland) even before Christopher Columbus sailed across the Atlantic. If dated before 1492, the map indicates that the Americas were discovered by the Vikings before Columbus made his historic expeditions. The map would be almost priceless. But if dated long after 1492, it merely copies what Columbus discovered, and would be valued considerably less. Based on the appearance of particles observed under high magnification, McCrone claimed to find the presence of a pigment that was not invented until the 1900's. Hence, he declared the map a modern artifact made to look old.<sup>125</sup>

After receiving the fibre samples from Rogers, McCrone set to work to see if there was anything that could be seen with the microscope which would show that the image on the Shroud was not created at the time of Christ. He was in luck. He reported in 1979 that polarized light microscopy identified the presence of a pigment that only became available long after the resurrection, and with the use of electron microscopy and x-ray diffraction for studying the fibres in 1980, he found evidence on these fibres that the image was painted at least twice. As with Yale's Vinland Map, he declared the Shroud a fake; it was created by a clever artist in the 1300's when the Shroud is alleged to have first appeared in written history.

How certain is this evidence?

Even if one were generous and were to give McCrone the benefit of the doubt, the evidence is not certain at all. The most serious criticism is that his findings have not been duplicated by any other independent researcher. His findings were also

---

125. See website at <http://www.mcricri.org/v/66/The-Vinland-Map>. Accessed July 2015.

reported in a journal that McCrone, himself, published, so his work has never been properly peer reviewed, if reviewed at all. He also claims to have examined thousands of fibres of the Shroud when, in fact, he received from Rogers only a precious few collected on 32 of the sticky tape samples.<sup>126</sup> Moreover, his findings contradict the wealth of evidence obtained by all the other scientists on the American team who clearly found no evidence that the image was any sort of a painting. Were this not the Shroud, McCrone's results would have simply been treated as an aberration from the norm.

In addition to lacking any reproducible scientific evidence to back him up, McCrone did not behave as one convinced of his own results. After his only direct interaction with the team during their first post-Turin meeting,<sup>127</sup> whenever the opportunity arose for him to discuss his work with these other scientists, he failed to appear sending instead an assistant who did not do the work.<sup>128</sup> He distanced himself from STURP and spoke to the media and at conferences as the lone dissenter to the authenticity of the Shroud. Since finding scientific evidence to prove the Shroud a fake was far more newsworthy than simply saying, "science cannot tell us," (as STURP correctly maintained), the media had a field day reporting on McCrone's negative opinions of the Shroud, regardless of his failure to provide any convincing scientific evidence.

Irrespective of these red flags warning us to treat McCrone's opinions with some degree of skepticism, his report is claimed by

---

126. Ian Wilson, *The Blood and the Shroud*, Weidenfeld and Nicolson, London, UK, 1998, p. 304.

127 This meeting occurred on March 24-25 in Santa Barbara, Ca, during which time McCrone claimed he found evidence that the image was painted. After being confronted with a stream of questions for which he had no convincing reply, McCrone left the conference directly after his presentation. See Heller, 1983, p. 141.

128. See John H. Heller, *Report on the Shroud of Turin*, Houghton Hifflin Co., Boston, USA, 1983, p. 213.

many to provide the only true unbiased scientific investigation of this cloth. If the adage is applicable that truth can stand the test of time, then McCrone's claims appear to lack this quality. His negative opinions of both Yale's Vinland Map and the Holy Shroud of Turin may have received considerable media coverage, but they have been generally dismissed by the scientific and academic communities interested in these items. Yet his company, the McCrone Institute which has become a not-for-profit institution after his passing, continues to promote his claims. Even though the enigma of C-14 dating was finally resolved in 2005, their website still maintains that the medieval date is correct and the C-14 dating provides collaborative evidence for the image being painted.<sup>129</sup> In light of the present scientific knowledge on the Shroud, one is left to wonder how much those associated with the McCrone Institute really support McCrone's claims, or are they simply showing a respect to their founder on a matter that is really of little concern to them.

In spite of the fact that McCrone's evidence against the authenticity of the Shroud is woefully misconstrued, there are still Shroud skeptics, not directly connected to the McCrone Institute, who rely heavily on McCrone's negative opinions. One such person is Steven D. Schafersman, the Science Consultant and Administrator of the Skeptical Shroud of Turin Website.<sup>130</sup> In response to the Rogers paper showing that the C-14 dating was carried out on a repaired patch of the cloth, he wrote on February 8, 2005:

As it is, educated, informed, and rational individuals don't believe the Shroud is authentic, tend to look on the controversy with either disgust or boredom (as I certainly do), and wish to get on with their lives. The Shroud of Turin is, after all, a

---

129. Accessed July 2015. <http://mcri.org/v/64/The-Shroud-of-Turin>

130. Website is found at <http://www.skeptic.ws/shroud>

notorious religious relic of the Catholic Church, and thus should be regarded with the same skepticism and contempt as other such relics (deciduous teeth, nail cuttings, and foreskins of Jesus and the bones of saints). If any competent person were to examine the Shroud sticky tape fiber samples – and there must be many thousands of such individuals in this country – it would be elementary to confirm that the fibers are covered by millions of tiny red ochre pigment particles. I challenge STURP to let me, or someone else equally competent, or best, several individuals who have the knowledge to identify red ochre/iron oxide/hematite particles, examine the STURP and Frei sticky tape sample fibers mounted on slides, perhaps at a public joint conference devoted to the microscopic investigation of the Shroud of Turin.<sup>131</sup>

Schafersman, in this emotionally charged comment, is providing a rebuttal to the Rogers paper on the chemical nature of the Shroud fibres used in the 1988 C-14 dating tests. Rogers, using the best analytical techniques available, obtained highly precise and reproducible results on the Shroud fibres, and published these results in a well-respected independently peer-reviewed scientific journal. Rogers has shown that the C-14 tests were done on one very small portion of the Shroud that is physically different to the rest of the linen that makes up the Shroud. In other words, Rogers concludes that the radiocarbon dating is accurate for the patch of material taken from the Shroud, but this patch, which was from a single location in one corner, is not typical of the rest of the linen cloth.

---

131. <http://cybercomputing.com/freeinquiry//skeptic/shroud/articles/rogers-ta-response.htm> (accessed April 16, 2012)

In reviewing the protocol followed to obtain the fibres for radiocarbon dating, the test strip was taken from the very portion of the Shroud that should have been avoided at all costs. As Barrie Schwartz has commented, had the photographs he took during the 1978 STURP study been taken into account, the test strip would never have come from this region of the cloth.

The re-weaving theory does not question the ability to measure radioactive carbon; it questions the patch on which the radiocarbon was performed. Furthermore, Rogers is not concluding that his findings testify that the linen of the Shroud is old enough to be the burial cloth of Christ. Instead, it explains why of all the hundreds of scientific tests done on this ancient cloth, the C-14 dating stands out on its own as being the only result that is not in keeping with the cloth's authenticity. It is because the test was done on cloth that had been added during the medieval period.

Yet Schafersman maintains that the image was created by a painter, and challenges people like Rogers to allow others to examine the evidence. As he states, any competent person would be able to attest to the presence of paint pigments on the cloth. This challenge gives the impression that no one competent enough has ever done such a test; the scientific literature tells another story. It is possible that Schafersman is not aware of this scientific literature since he, himself, is not a scientist. However published results in peer-reviewed scientific journals have already verified that paint pigments are present on some of the fibres on the Shroud, but very few are associated with the image, and the image is not the result of any paint pigments. The image is simply not a painting. Challenging the Shroud supporters to provide fibres for analysis may give the impression that doing so will show the Shroud a fake, but this challenge masks the fact that even a casual examination of the cloth renders the painting hypothesis meaningless. It is not necessary to take a look at any of the fibres at the microscopic level. The negative image created

by the slight distortions of the surface of individual fibres could never have been made by any paint used by any medieval painter. In fact, we have yet to develop the technology to recreate such an image even today!

I am reluctant to malign a well-respected scientist like Walter McCrone especially since he can no longer speak for himself. But by his own admission, McCrone did not have a good working relationship with the STURP scientists, and the historical facts show that he did not consider his signed agreement with STURP as binding. Moreover, his claim that his microscopic techniques could verify the chemical nature of particles without carrying out any chemical analysis would be questioned by anyone with any experience with forensic science. Indeed, salt and sugar may *look* the same, but for many of us who have made the mistake, they are certainly *chemically* different.

In the light of these facts, it is easy to believe that Walter McCrone was either mentally incapable of an objective scientific opinion, or was being maliciously dishonest. In hindsight, however, McCrone may have been shrewder than anyone could have imagined. By taking a stand challenging the STURP findings, regardless of what those findings were, McCrone played the press well. Only his name became well-known in the media whereas the other personalities seemed to fade into obscurity; he and his company benefited greatly from the publicity; and his negative opinion, in spite of the evidence to the contrary, is still deemed among many skeptics as solid scientific proof against the Shroud. The proof might be very, very, weak, but in this case, the evidence is merely secondary information. Opinions on the Holy Shroud are often formed long before the facts are known—a human trait that McCrone was clever enough to take full advantage of.

When the C-14 dating was reported to show the Shroud a medieval forgery, many skeptics tossed aside the questionable forged-by-a-medieval-painter theory in favour of it being created

by primitive photography. Going against McCrone's opinion and admitting that the image is not a painting, is quite a concession by some of the skeptics who had been vehement that the image was painted based on the validity of McCrone's work. It is possible that the 1988 C-14 dating provided at that time so much irrefutable proof that the cloth did not cover Christ that it was no longer necessary to declare it a medieval painting. Instead, it now became, of all things, a photograph done hundreds of years before the science of photography was even thought of! For this theory to become accepted, it was only a matter of weaving a tale that incorporated some form of rudimentary photography. Such was accomplished in 1994 by Lynn Picknett and Clive Prince in their book entitled *The Shroud: in whose image?*<sup>132</sup>

*The image viewed as a photograph:*

It may appear rather harsh and possibly narrow-minded to say this, but of all the outlandish, foolish, and completely bogus claims about the Shroud, the theory proposed by Picknett and Prince has to be ranked the most absurd. Considering the wealth of scientific information that supports the authenticity of the Shroud, their theory has gained support because it serves as the only life-line left for many skeptics to cling to. Gone now are the C-14 dating results and the Chevalier/McCrone painting theories; what remains is the primitive-photography theory, the theory that Picknett and Prince have cashed in on.

The Picknett and Prince theory has been modified and enhanced since it was first published in 1994, especially with the addition of the work of Nicholas Allen who was able to create a shroud-like image on cloth using a rudimentary photographic technique.<sup>133</sup> Their theory can now be summarized as follows:

132. Lynn Picknett & Clive Prince, "The Turin Shroud: in whose image?" New York, Harper Collins, 1994.

133. Nicholas Allen, "Verification of the Nature and Causes of the Photonegative Images on the Shroud of Lirey-Chambery-Turin, *De Arte* [Journal of the Department of Art History and Fine Arts, University of South Africa]. April

- In the mid 1300's a linen cloth, on which was painted the image of Christ, was displayed in Lirey, France, by the de Charny family who claimed it to be the death shroud of Christ.
- The claim that the Lirey Shroud was a painting is supported by the memo written by Bishop Pierre D'Arcis of Troyes in 1389 to Pope Clement VII.
- Despite it being a painting created by human hands, the Lirey Shroud was sold as the authentic death cloth of Christ by the de Charny family in 1464 to Duke Louis I of Savoy for a considerable sum of money and investments.
- After several years of revering the Lirey Shroud, the Savoys realized that it was a fake.
- During the 1490's, when Leonardo da Vinci was in his 40's and his reputation as an eccentric inventor, gifted artist, and anti-church sympathizer were well known, the Savoys approached him secretly to create a more realistic fake that would replace their less convincing fake.
- To complete this task and to create the present Turin Shroud, da Vinci likely used a photographic technique similar to that described recently by Nicholas Allen.
- The Savoys then replaced the less convincing Lirey Shroud with the da Vinci Shroud (having no brush marks), and although many people had already viewed the Lirey Shroud (even making representations of it in various ways), no one realized that a substitution was made. Or, conversely, the

Savoys had the resources to ensure that a substitution did not become known.

For this scenario to be credible it is important that the Allen rudimentary photographic technique can produce the type of image found on the Holy Shroud. In following this method da Vinci would have constructed a large pin-hole camera (the size of a small room), in which was hung in the dark a linen cloth treated with a light-sensitive solution of silver salts. He then hung a dead recently scourged and crucified body outside the room, in the bright sun, and its image was focussed onto the cloth in the room by a quartz lens positioned in the wall.

Since the creation of the image required hours of exposure, da Vinci carefully moved the dead body as the sun moved so that the image it created on the cloth remained in perfect focus. Then, when one side of the body was done, he flipped the cloth, rotated the body, and repeated the procedure to create the image of the back. This procedure would have been necessary to produce along the full length of the cloth an image of the front and back of the body with the head in the centre. This Allen technique does seem to have possibilities, but then Picknett and Prince weave into their story a far less believable scenario.

To play a practical joke on the church, these authors suggest that da Vinci somehow superimposed a photo negative of his own face onto the image so that pilgrims would be venerating da Vinci himself, and not Christ. As proof that da Vinci carried out this hoax, Picknett and Prince compared the shape of the Holy Face to that of a self-portrait of da Vinci, and have found some similarities. But to accomplish this feat using the Allen primitive photograph technique, da Vinci's face would have required a similar length of exposure time as did the body of the crucified man. Possibly da Vinci chopped off the head of the crucified man and placed a bust of himself there, but the image of the body on the Holy Shroud shows absolutely no evidence of the

body being severed from the head. The head clearly belongs to the body.

Finally, da Vinci treated the entire cloth with an ammonia solution (possibly urine) in order that the cloth no longer reacted to light, then he applied real human blood to depict the blood stains. However, scientists were amazed to find that the image on the Holy Shroud does not exist *under* the blood stains. This one scientifically verifiable fact renders the entire da Vinci scenario meaningless.

It is unbelievable, in this day and age of science and technology, that this theory has gained any following at all. Fortunately for Picknett and Prince, Nicholas Allen was able to produce a shroud-like image using primitive photographic technology,<sup>134</sup> and these authors could modify their theory to incorporate his findings. But they fail to mention that the Allen technique produces poor images at best, and could not explain how da Vinci got his own face on the cloth. In addition, few people who hear of this theory have any idea who Picknett and Prince are, and what form of writing they are involved in. It is assumed that they are reliable experts who have developed a feasible hypothesis to explain the formation of the image by natural means. But as experts, they fall far short of the mark.

As noted on their official web site,<sup>135</sup> these authors are deep into fictitious conspiracy theories especially those involving the Knights Templars, Freemasonry, the Roman Catholic Church, UFO's and the like. Indeed, much of Dan Brown's best seller, *The Da Vinci Code* was based on the work of Picknett and Prince for which they are given credit in the movie version of Brown's novel. Other books written by Picknett, or by Picknett and Prince, are described on their website as follows:

---

134. Allen's technique may use materials that were available to da Vinci, but the knowledge of photography that would have been needed to use these materials in the proper way, would have been quite substantial.

135. <http://www.picknettprince.com/>

- *The Stargate Conspiracy* (1999) which reveals the intricate relationship between the gods of ancient Egypt, New Age prophets, channelling cults and serious parapsychological researchers, all presided over like puppetmasters by the west's intelligence agencies.
- *The Mammoth Book of UFOs* (2001) in which Picknett gives an intensive overview of the entire UFO-related phenomenon—including crop circles, cattle mutilation and Men In Black—weighed against a background of cultural and psychological expectations.
- *The Masks of Christ: behind the lies and cover-ups about the man believed to be god* (2008) in which Picknett and Prince peel back the layers of "Paularisation" which have camouflaged Jesus and his relationship with John the Baptist, his family, resurrection, and pagan influences in Second Temple Roman times. They give us a fascinating insight into the reality of earliest Christianity [...]. The authors' treatment of the Dead Sea Scrolls, and the connections of John and Jesus to this secretive sect, adds spice to an already heady mixture of highly informative reading.
- *The Forbidden Universe* (2011), which uncovers a story that has been suppressed for centuries: that an ancient magical tradition holds the key to the true origins of science.

To consider these authors serious Shroud investigators is to make a mockery of all others, including the naysayer, McCrone. And there are so many flaws in their da Vinci theory that it would be meaningless to take it seriously. As already noted, one fact that completely renders the da Vinci primitive-photograph theory useless is that the STURP scientists were unable to find any evidence of the image *under* the blood stains meaning that the

blood had to be placed on the cloth in exactly the right locations even *before* the image was imprinted on the cloth. It may have been possible for da Vinci to apply the blood stains to the body image after it was placed on the cloth, as proposed by Picknett and Prince, and Nicholas Allen, but certainly not before. That would have been an engineering feat beyond belief.

Much to the delight of Picknett and Prince, their theory has gained a following, has made their books best-sellers and has brought them considerable fame. They were even able to add support for their theory by showing that the recently restored portrait of Christ, the *Salvator Mundi* (Saviour of the World), which was declared a da Vinci in 2011,<sup>136</sup> has the facial features that are identical to that of the face on the Shroud and also to the self-portrait of da Vinci. Although considered supporting evidence by the naive, many experts deny their claims and reject their logic.

In all honesty, Picknett and Prince are duping some people in the Shroud community, but they are certainly not doing so in any intelligent way. Their explanation of the image is filled with scientific and historical errors, and they even attribute words to Ian Wilson, a well respected Shroud historian, which he denies ever having said.<sup>137</sup> The only real deception being carried out is self-generated for their story is clearly fictitious, as seen in the other topics they have dealt with from the occult nature of science to the existence of UFOs.

---

136. Leonardo da Vinci painted a portrait of Jesus Christ for Louis XII of France sometime between 1506 and 1513. This painting was owned by Charles I of England (recorded as part of his collection in 1649), auctioned off in 1763, and appeared again in 1900 belonging to Francis Cook, 1st Viscount of Monserrate. By this time the painting had been badly damaged, and its authorship unknown. In 1958, it was sold at auction for £45. It was recognized as a da Vinci in 2011 only following its restoration after being purchased by a group of art collectors. In 2013 the Russian art collector Dmitry Rybolovlev paid \$127.5 million for the painting.

137. Ian Wilson, *The Blood and the Shroud*, p. 211.

With respect to the da Vinci hypothesis, their writing belongs to the genre of historical science fiction, and their so-called informers who have provided this information for them are nothing more than made up names, like characters in a theatrical performance. Conveniently, these informers cannot be identified since their anonymity was a condition for the information they provided.<sup>138</sup> Picknett and Prince verge on the occult, not science, and they completely ignore some salient historical facts. They are probably best considered as entertainers in the literary world, not experts, and I applaud their merchandising talents. Their books can be great fun; just do not take them seriously. Addressing the silliness in their writing only suggests that their ideas may have some validity, a mistake that too many Shroud enthusiasts have made.



---

138. In particular, one informant does not even need anonymity since he is not of this world. Picknett, a spiritualist, conjured up a correspondent named "Giovanni," who first put her on to her ideas.



The author (to left in each picture) with fellow 'shroudies', who give presentations on the Shroud. Top left: Russ Breault has spent over 25 years studying the Shroud and devotes his time presenting the Shroud Encounter. Top right; Phillip Wiebe, Professor Emeritus of Philosophy, Trinity Western University, saw the Shroud in person in 2000 at which time he had a spiritual experience. Bottom left: John Ianonne owns a film studio but has studied the Shroud since 1978. On a special invitation to Turin, he has seen the Shroud first hand. Bottom right: Barrie Schwartz signing a life-size replica which Gary purchased from Barrie's Shroud of Turin Education and Research Association, Inc. As noted in the text, Barrie has become a leading figure among 'shroudies.'

## Chapter 17

# The Shroud and Compromise

Over the ages, skeptics have resorted to discrediting the Shroud in at least three different ways. The first is to claim that the image was painted. The painting theory was supported first by Chevalier's discovery of the infamous 1398 memo in which Pierre D'Arcis asked Pope Clement VII to stop this fake from being shown by the church in Lirey, and by Walter McCrone who claimed to have observed paint pigments on fibres removed from the cloth.

The second way to discredit the cloth is to consider it too young to have covered the body of Christ. This was promoted by the C-14 dating data which not only showed the cloth too young, but also to have appeared in the Middle Ages when the black market for relics was at its peak. If a fake shroud were to be promoted as the death shroud of Christ, this would have been the time to do it.

The third way to discredit the Shroud was invented after the C-14 dating allowed skeptics to reduce their dependence on the painting theory, and to admit that the image was a form of photography. If so, why not create an elaborate story accusing Leonardo da Vinci of being the most probable hoaxer?

These three ways to discredit the Shroud all deny that this cloth ever covered the body of Jesus as he lay dead in the tomb. It was a medieval painting; it was too young to have been present at the crucifixion; or it was an exceptionally good photograph of a crucified man taken in the Middle Ages by a forger using a rudimentary photographic technique. But the evidence is quite overwhelming that the cloth did cover the body of the historic Jesus, that the image is a true representation of a scourged and crucified man, and that some form of energy burst associated with the resurrection imprinted the image on this cloth. It is difficult to explain the image in any other way.

Christians may promote this explanation as proof that God exists and that Jesus rose from the dead, but there are two ways a person can accept the scientific facts that this cloth wrapped Christ, but reject the divinity of Jesus Christ. First, the image was created by an interaction between the chemicals on the shroud and on the body, and the resurrection did not take place. Second, the image was created by a resurrection event, but Jesus was an ordinary human and not the Christ. These are the positions of compromise.

*The Shroud without the resurrection:*

There were at least two members of the American team who believed that the Shroud covered the body of Jesus, but that Jesus was not the Messiah and that the resurrection did not take place. These are the afore-mentioned Raymond Rogers (1927-2005), and Barrie Schwartz.

Rogers served on STURP as the Director of Chemical Research, and applied his expertise in thermal methods to the study of this relic. None of his results could falsify the Shroud, and by examining the chemistry of the cloth, he showed it to be old enough to have covered the body of Jesus. It was his preconceived belief that Jesus was an ordinary man, and that he did not rise from the dead which drove Rogers to study the

Shroud. He was hoping to find a result that would either falsify this claim, or at least, provide a natural explanation for the appearance of the image on the cloth. Then, in 1988, when the C-14 dating results were announced with certainty that the cloth was medieval, he no longer had the drive to continue with this work. His quest had been reached by other scientists.

But Rogers did return to Shroud studies years later, and with Anna Arnoldi in 2003, reported that the image on the Shroud resembles in colour what can be created with the Maillard reaction between carbohydrates on the cloth and ammonia vapour released by the decaying body.<sup>139</sup> In this respect, he resurrected the Vignon vapour theory to explain how an image was imprinted on the cloth without the body having contact with it. But like Vignon's vapour theory, a negative image can be created, but at best, it only, "gave a distribution of colour on the thread fibres in good agreement with the Shroud features."<sup>140</sup> This method could discolour the fibres at a distance, but it could not create the detail and the focus of the image on the Shroud that only radiant energy would be able to produce.

Rogers could not believe that the image was created by radiant energy for such an explanation would confirm a resurrection event and he did not believe in the resurrection. Because this natural process could provide an explanation for the image on the cloth, and because he ruled out the resurrection *a priori*, Rogers felt the cloth could have covered the body of the historic Jesus and therefore the C-14 dating results were in error.

As noted in Chapter 15, Rogers also published the definitive paper showing that the C-14 dating was done on a part of the cloth that was repaired by weavers using cotton threads. This later effort gives the impression that Rogers believed that the

139. Raymond Rogers and Anna Arnoldi, "The Shroud of Turin: an amino-carbonyl reaction (Maillard reaction) may explain the image formation." Melonoidins vol. 4, Ames J.M. ed., Office for Official Publications of the European Communities, Luxembourg, 2003, pp.106-113.

140. Ibid, p. 1.

Shroud was authentic and that the Christ rose from the dead, but considering his preconceived beliefs, he was more concerned with vindicating his own work on the Shroud, which he believed in, rather than supporting the divinity of Jesus Christ, which he did not believe in.

Barrie Schwartz, the person who encouraged Rogers to reexamine the Shroud for evidence of repair, was not discouraged by the radiocarbon dating. Yet ironically, being raised an Orthodox Jew, Barrie does not believe Jesus to be the Christ, nor that he rose from the dead. Although a very popular, well-sought after Shroud presenter, he is probably the most unlikely person to be associated with this Christian relic. He admits that the only reason he had become involved with the Shroud is because God wanted him to be.

In the 1970's, Schwartz was a young technical photographer who ran a commercial photography studio that did work in the engineering, scientific, and medical fields. In 1976, Don Devan, a scientist for a local imaging company, asked Barrie to consult with them on a project for Los Alamos National Laboratory, a project that was completed in seven months. In 1976, Don Devan was also in conversation with John Jackson who was at the early stages of setting up the research team who would examine the Shroud. Don, who like Barrie was a Jew, phoned Barrie to ask if he would be interested in being involved in a scientific study of the Shroud.<sup>141</sup> But Barrie laughed off the invitation thus turning down this opportunity. Nonetheless, Don persisted and Barrie acquiesced, but he still wondered if he should remain involved.

When Don later mentioned to Barrie that a very well known and accomplished imaging expert, Paul Lynn, would be part of the team, Barrie felt reassured. Lynn worked with NASA on imaging for a number of space probes including Voyager, Viking,

---

141. Information that appears in a slide presentation at:  
<https://www.shroud.com/pdfs/schwartz2p.pdf>

Mariner and Galileo. To Barrie, Lynn was a role model. When Barrie spoke with Lynn, he asked why a person with no interest in religion, having abandoned Judaism when he was 13 years old, would have anything to do with what is unquestionably Christianity's most holy relic. Barrie considers Lynn's advice to be the best advice he has ever received:

Barrie, go to Turin. Do the best job you can do. God does not tell us in his answer what the plan is, but one day you will know.<sup>142</sup>

So Barrie did stay with the team, not anticipating any more than a free trip to Italy. As already noted, Barrie expected that once the team was able to examine the Shroud close up, they would photograph the brush marks, and go home. The aim of the team was to determine how the image was formed, and the evidence of brush marks was all that was needed to show it was really a painting.

Like many skeptics who have approached the Shroud, Barrie realized that the image could not be explained by any known technology. However, he remained sceptical because the blood stains were too red in colour for him to accept them as being real. Then in 1996, while speaking with Alan Alder who did the blood work on the Shroud, his final objection to the Shroud was removed, and in fact, it provided even more support for its authenticity. Barrie learned that a breakdown product of blood, bilirubin, will build up in a victim who has been severely beaten and scourged as Jesus was, and that the blood on the cloth had an abnormally high bilirubin content. Moreover, blood with high bilirubin content does not turn black, but retains its red colour. Being raised a Jew, Barrie still cannot accept that Jesus is the Christ, but at that moment he fully believed that the cloth is the

---

142. As told by Barrie near the 4:30 mark in a TED talk youtube video at <https://www.youtube.com/watch?v=4G4sj8hUVaY>

actual burial cloth that covered the historic Jesus as he laid dead in the tomb.

Barrie rejected religion when he entered adulthood, but he admits that studying the Shroud has rekindled his spirituality. For Barrie it was a long journey from agnosticism to faith which started when he first examined the Shroud in the Royal Palace in Turin. What created the image on the cloth is simply unknown, and that is a mystery he is more than willing to live with. When pushed for an explanation, he tends to support Rogers' Maillard reaction theory in which chemicals emitted by the decaying corpse reacted with carbohydrates on the cloth to imprint the image. However, he is fully aware that this theory leaves many unanswered questions.

Barrie's contribution to the study of the Shroud is extremely significant. He started what is at this time the most visited web site for gathering and disseminating legitimate information about the Shroud ([www.shroud.com](http://www.shroud.com)), and because he is permitted to use the photographs he took of the Shroud in 1978, we have a resource by which to obtain high quality reproductions of this cloth. Now that the cloth may no longer serve in scientific studies, since it was cleaned and preserved in 2002, Barrie's contributions to Shroud science are immensely important. The unique way by which he became involved with the Shroud, and the service he provides for Christians world wide, although he is a Jew, has all the ear marks of a God-directed life, which he fully admits to.

Like Raymond Rogers and Barrie Schwartz, Thomas de Wesselow does not believe that the resurrection took place, but the Shroud did cover the body of Jesus, and the image was imprinted by a chemical reaction of the body with the cloth. In keeping with his academic training in art history, de Wesselow has devised a theory to explain why the disciples behaved as if Jesus did come back to life when, in reality, his body was discarded and decayed away. He builds his theory on the

speculation that the disciples belonged to a society steeped in animism.

Animism assumes that a soul or spirit can exist in various nonhuman objects, such as animals, plants, geologic formations, and celestial bodies like the moon and the sun. The ancient Egyptians practised animism, and offered prayers, dances or other forms of worship to what Jews (and Christians) would refer to as idols. This form of worship was expressly prohibited in Judaism, and the Jews were taught that, as a nation, they suffered the consequences whenever they wandered into idol worshipping. The first two of the ten commandments teaches that there is only one God and that we are not to make and worship idols, which are dead, lifeless, objects that possess no power to influence life. Many aboriginal societies may still practice animism, but Judaism has never been described as encouraging this particular view of the world. Since de Wesselow rests his entire argument on the one stipulation that the disciples considered inanimate objects to be living, his theory is built on very shaky grounds indeed. The disciples would have been anything but animists; they would have been quite the opposite.

Assuming that the first century Christians were animists, who believed that the soul or spirit can exist in inanimate objects, de Wesselow claims that they believed the image on the cloth was not just the image of Jesus, but was Jesus himself giving life to the image. Thus, his body was disposed of according to Jewish tradition, yet the disciples held on to the unclean cloth that was supposed to have been buried with him. And the "risen" image on the cloth is what kept him alive in the minds and hearts of his followers.<sup>143</sup> Christ did not rise from the dead, his image did.

De Wesselow then proposes that the different appearances of the risen Christ described in the Gospels can be explained by the disciples displaying the image on the Shroud to others. The

---

143. Thomas de Wesselow, "The Sign", Dutton, The Penguin Group (USA) Inc., 2012, p.334.

gospel accounts have been modified in retrospect to give a body of flesh and bone to the image on the Shroud. In this fashion, the Gospels were written by Matthew, Mark, Luke and John so that the miracles associated with Jesus and his claim to be the Messiah (or Christ) are attributed to him posthumously.<sup>144</sup> Jesus was an ordinary man dying as any mortal, but he came to be viewed as being immortal and the Christ because of the discovery of the image on the Shroud. When the Apostle Paul describes his encounter with Christ on the Road to Damascus, de Wesselow believes that Paul was shown the image on the Shroud by the disciples, and then he converted to Christianity. Paul's description of this encounter is worded as a supernatural event, even if it were not, because Paul was overwhelmed by the image on the Shroud.

In his theory, de Wesselow claims that the appearance of this image was so powerful that its viewing altered the minds and hearts of those who saw it, making them believe that Jesus himself rose from the dead. Thus, the image on the Shroud provides a naturalistic explanation for the belief in the resurrection. The Gospels do not represent historical accounts, but are reinterpretations of these historical accounts by people who believed, after seeing the Shroud, that Jesus rose from the dead.

De Wesselow's book, *The Sign*, has the by-line, "The Shroud of Turin and the Secret of the Resurrection." The secret that he has uncovered certainly is an imaginative rendering of what may have happened to explain why the disciples so firmly believed in Christ, but it falters on three very important points. First, he is asking the reader to believe that a very highly developed culture with a system of rules and regulations that forbade idol worshipping, would encourage the disciples to believe that inanimate objects, like the picture on the Shroud, possessed the soul or spirit of Jesus. Second, he dismisses outright the Gospel accounts as being imaginary renderings to make Jesus appear to

---

144. Ibid., p. 336

be the Messiah. Yet he cannot readily connect the imaginary accounts to the actual events from which they were derived. And third, he places a tremendous amount of faith on the vapour theory for the generation of the image, a theory that leaves many questions unanswered and has few followers. But before I dismiss, as a strikeout, his three swings at providing a logical naturalistic explanation for the image on the Shroud, let's briefly examine each of them.

*Disciples were superstitious animists:*

The disciples of Jesus were following the Messiah, God-on-earth, the one true God who created the universe. There is none other. Their first reaction to seeing the image on the Shroud would have been anything but falling down in front of it to worship, of all things, the picture itself. Even today, Shroud supporters do not worship the Shroud at all, even though de Wesselow interprets this veneration as worship.<sup>145</sup> With his apparently limited experience with a vibrant Christian faith, de Wesselow does not realize that venerating is not worshipping.

To weaken his theory even further, the picture the disciples would have seen on the Shroud is not the negative aspect of the image that we are so familiar with. From my experience in displaying a life-size replica of the Shroud, it takes a concentrated effort to recognize where the face is on the cloth. Some in the audience never do see the face on the life-size replica even when it is directly pointed out to them. It only becomes recognizable to many when they see the image in the negative. Since the disciples were raised in a culture that rejected animism in the first place, and since the picture of Christ on the cloth is hardly recognizable

---

145. Ibid, p.301, "Anyone who has stood before the cloth in Turin Cathedral, accompanied by several hundred others, has an inkling, I believe, of the kind of experience the More-than-500 must have had. Modern displays of the Shroud effectively re-enact the first Nazarene assembly, the moment when the Church, as a great community of believers, was born."

as the face of the person they knew, de Wesselow's scenario is unlikely to the extreme.

*Why describe disciples speaking-in-tongues?*

De Wesselow dismisses the Gospels as made up accounts to make Jesus appear as the Messiah.<sup>146</sup> To get reliable historical information, he refers to what is called the "First Creed" which he defines as "the original Christian proclamation; it is how the apostles themselves reported the Resurrection."<sup>147</sup> He believes the Apostle Paul's description that Jesus appeared to over 500 brethren at one time (1 Cor. 15:6) is part of this First Creed, but that this appearance was not of Jesus, himself, but of the Shroud shown by the disciples to more than 500 people. This event needed to occur in a large public place like the temple. He does not believe that Christ's appearance to more than 500 brethren at one time refers to the Day of Pentecost, and he describes, as an "unlikely tale," the Holy Spirit descending with the sound of a rushing mighty wind accompanied by appearance of flames and by speaking-in-tongues.<sup>148</sup>

De Wesselow completely dismisses the entire account of Pentecost and speaking-in-tongues as pure fabrication, and in doing so fails to answer a very important question. Why would the disciples describe such an unusual event in which their babbling was recognized by those visiting Jerusalem as being one

---

146. That the four gospel accounts written by completely different individuals for different audiences are virtually in complete agreement with respect to the actions and teachings of Christ, is very strong proof that these accounts reflect real events, and are not metaphors or allegories used to make Jesus appear divine.

147. Ibid, p.53.

148. Ibid, p.301. "According to Acts 2, the Twelve and their companions were assembled together in a house in Jerusalem on the day of Pentecost [...] when the Holy Spirit came upon them and gave them the power to speak in tongues. [...] The idea that this *unlikely tale* represents the historical appearance to more than 500 brethren has little to recommend it." (Emphasis mine)

of several different foreign languages? As the writer of Acts reported:

Now there were staying in Jerusalem God-fearing Jews from every nation under heaven. When they heard this sound, a crowd came together in bewilderment, because each one heard their own language being spoken. Utterly amazed, they asked: "Aren't all these who are speaking Galileans? Then how is it that each of us hears them in our native language? (Acts 2: 5-8, NIV)

There is nothing in the history of any religion, let alone Judaism, that would warrant describing such a strange phenomenon. Speaking-in-tongues has no basis prior to the Day of Pentecost. Some Christians may believe that this form of expression does not occur to day,<sup>149</sup> but the disciples would have never fabricated the Baptism of the Holy Spirit with speaking-in-tongues when it was completely unknown to them. They reported it because that is exactly what happened to them.

*Problems with the vapour theory:*

The vapour theory, as noted earlier, was proposed by Paul Vignon to explain his observation that some of the image on the cloth could not be attributed to direct contact, therefore, it must have been generated by something that travelled from the body to the cloth in one way or another. And before his last work with the Shroud fibres in 2005, Raymond Rogers teamed up with Anna Arnoldi to show that a chemical reaction called the Maillard reaction can involve vapours to produce a brownish colouring on

149. For those Christians uncomfortable with speaking-in-tongues, this God-given ability is considered to have been initially necessary to spread the Gospel, but it no longer occurs today. However, the evidence does not support this belief. I speak in tongues, and from my experience, at least 1 in 10 Christians I have met also speak in tongues. We might all be hallucinating, but what was described in Acts still occurs today.

a cloth, which resembles properties of the image on the Shroud.<sup>150</sup> Although Rogers attempted to create a clear image using this technique, he was not successful. Yet de Wesselow attributes to him a success he never admitted to. And having claimed that Rogers was able to create a good negative image via the Maillard technique (which is not the case), de Wesselow derides Shroud proponents by stating:

[...] that, although they pay lip-service to the scientific method, many of those involved in studying the Shroud have come to believe, ahead of any scientific evidence, that it is the material trace of a miracle, that its image represents the bright flash of the Resurrection. They do not want to believe that it is a purely natural phenomenon; they prefer to think of it as the result of some sort of divinely induced radiation.<sup>151</sup>

But the problem with the vapour theory is not the belief in the resurrection; it is the fact that the molecules in a vapour of gas released from one point of origin will immediately start to spread out by the forces of diffusion. The vapour method might be able to produce an image with some of the properties of the image on the Shroud, but it will never be able to produce the details seen in the image on the Shroud. The technique is more akin to airbrushing, or spray painting, not photography.

De Wesselow's theory raises other serious concerns regarding the Shroud and how the disciples reacted to it, and to my knowledge, this secret of his has not been well received. It might be a curiosity for some Shroud skeptics, but it fails to provide any

150. Raymond Rogers and Anna Arnoldi, "The Shroud of Turin: an amino-carbonyl reaction (Maillard reaction) may explain the image formation." *Melanoïdins* vol. 4, Ames J.M. ed., Office for Official Publications of the European Communities, Luxembourg, 2003, pp.106-113.

151. *Ibid*, p.158.

information that can be used to challenge the authenticity of the Shroud. Nonetheless, it does provide a different way of denying the resurrection, while accepting the scientific and historical evidence that the Shroud did wrap the dead body of a man named Jesus.

*The Resurrection without the Christ:*

Andrew Silverman is a medical doctor and assumes that the cloth did cover the body of Jesus, that Jesus also rose from the dead, and that the resurrection event left an imprint on the cloth. These assumptions do not suggest compromise at all. Rather, they are indicative of a firm belief that the Shroud is authentic and that Jesus rose from the dead. Why am I categorizing Silverman's stance as a position of compromise?

The two extremes of the Shroud spectrum are, on the one hand, total disbelief, and on the other, full acceptance of the Shroud and the Gospel story. In his position of compromise, Silverman leans towards the Gospel story, but does not accept it entirely. He believes in a resurrection, but not from a Christian perspective. Although his position lies close to believing the Shroud is authentic, he rejects the divinity of Christ.

Andrew Silverman may have gone into medicine, but he is well versed in physics, and he is certainly gifted intellectually. It is his understanding of physics that he brings into his study of the Shroud. He authors a web site called, "Light of the Shroud" ([www.lightoftheshroud.com](http://www.lightoftheshroud.com)), and he concentrates on the physics which resulted in an image being projected onto the cloth from the body during the resurrection. On this web site, he provides the papers that he has presented at Shroud conferences, although it appears that none have been published in peer-reviewed scientific journals.

Silverman assumes that the image was created by a resurrection event, and he focusses his attention on explaining why the body of Christ would have generated a burst of energy

when life returned to this body. As he and his co-presenter, Nigel Kerner, have written:

We do not appeal to the concept of “miracle” nor to the platitudes of “mystery” but intend to demonstrate through reasoned argument and scientific evidence that the possibility of such a phenomenon [the burst of energy created at the resurrection] is not merely plausible but self-evident from the fundamental axioms which describe what we humans call reality such as it is.<sup>152</sup>

I confess that despite obtaining the highest degree awarded for scholastic achievement, I am somewhat mystified by this New Age philosophy being applied to scientific method. It is in my view, disingenuous. They then proceed to provide something I could grasp by stating that our concept of reality is misguided and that we need to realize that our minds and our ability to feel and reason are not the result of the “emergent properties of atoms” but the atoms in this physical world are the result of the “emergent property of mind.”<sup>153</sup>

By this reasoning they mean that our consciousness and who each individual is has existed since time began, and will continue to exist after our mortal bodies die. Rather than Christian theology, Silverman is applying the concept of reincarnation as found in Eastern mystic religions to the resurrection of Jesus. He considers Jesus an ordinary man, not divine, but one who was able to come into contact with the ‘singularity’ or energy that has bound all of the physical universe together ever since the Big Bang. Silverman argues that physical life is a lower energy state

---

152. Andrew Silverman and Nigel Kerner (2010) *The Brightest Light of All*. Proceedings of the International Workshop on the Scientific Approach to the Archeiropoietos Images, ENEA Frascati, Italy, 4-6 May 2010.

153. *Ibid*

than the mind or consciousness which was all one (a singularity) at the moment of the Big Bang.

Ever since the Big Bang, reality is drifting toward randomness according to the Second Law of Thermodynamics, and biological life evolved as one of the consequences of this process of falling into a lower energy state. What we see emerging in an individual at this lower energy state is the person's mind or consciousness which makes us sentient beings.<sup>154</sup> Then, Silverman reasons, when we live like Christ, we can approach this singularity and become pure energy again, and shine like the sun. Jesus is not God who gave up his life to save us from sin, but is an ordinary man who showed us how to become pure consciousness.

Jesus was able to resurrect his own body because he used the energy in the singularity to will his body back to life. In order to do so, he instilled into his consciousness an enormous love which saw him go to the cross for his concern for humankind. As Silverman argues:

[...] all sentient beings must have been one in the initial singularity which gave rise to the "big bang." Since separation is the hallmark of limit it would follow that the exhortation to "love your neighbour as thyself" is simply a 'route map' for returning to our original status.<sup>155</sup>

Jesus' love for his neighbour allowed him to get in touch with the energy in the Big Bang, and Silverman suggests that Jesus' ability to shine like the sun during the Transfiguration or at the

---

154. 'Sentient' is not a term familiar to Christianity, but is used in Eastern religions including Hinduism, Buddhism, Sikhism, and Jainism. Silverman uses it to describe our ability to feel, perceive, or experience subjectively. Animals are also considered to be sentient beings and this designation has been used to promote animal rights.

155. Andrew Silverman, *The Light that Shone in the Darkness*, found at <http://www.lightoftheshroud.com/>; accessed July 2015.

time when he rose from the dead, “can be logically derived to be a natural consequence of living a life which reflected this knowledge of neighbour and self as being one and the same.”<sup>156</sup>

These are not easy concepts to grasp, and although Silverman argues that he is providing a natural explanation, there are a number of leaps of faith between gaps of logic. If we move beyond his logic to his summary of what happened at the resurrection, we begin to see his point a bit clearer. In an interview, he summarized the resurrection event with the following points:<sup>157</sup>

- Jesus raised himself from the dead because of his consciousness in which he had instilled in himself an enormous love.
- physical life devolved from a continuous line leading right back to the singularity. This connection to this singularity makes us alive.
- Jesus Christ, his being or consciousness, came close enough to this singularity that he was also able to bring life to dead matter.
- if he decided to rejoin the physical world, then perhaps it would be this body, in which he experienced the physical world previously, he would bring back to life.
- the quantum jump down to a lesser energy state (changing pure energy or consciousness into matter) released a surge of

---

156. Ibid

157. New Physics and the Shroud of Turin; Dr. Andrew Silverman interviewed by filmmaker David Rolfe for Shroud TV, 30th of November 2011 <http://www.lightoftheshroud.com/New%20Physics%20and%20the%20Shroud%20of%20Turin.html> (accessed April 28, 2014)

energy which imprinted the negative image of the body onto the cloth.

Silverman concludes that Jesus brought his peace to the dead body, and thus enabled that body to come alive again. There was no miracle or mystery involved since this is a natural process that does not involve anything that would be considered supernatural or divine. The Man of the Shroud provides us with the evidence for the true potential of the human spirit that Jesus was able to obtain. All humans are empowered with this consciousness; we only need to realize that we can use it.

Silverman believes that his explanation of the image on the Shroud is based on natural processes in our physical world, but it is far from being purely natural. It is quite religious and depends on a belief system that many well-educated intelligent non-Christians adhere to—New Age. New Age philosophy is attractive since it appears to provide a modern naturalistic explanation for spirituality. Jesus is considered an ordinary human being who was able to harness the energy within nature and to channel it through himself to do good. And he has taught us to do the same thing. He was not born with any divine nature at all (there was no virgin birth), but through his life he obtained a particular natural and spiritual state to become pure energy, and hence, he really never died. In New Age philosophy, we do not thank Jesus for saving us from sin whereby we can obtain eternal life. No, we thank him for showing us the way. We need to do what Jesus did in order that we, too, can become pure energy and gods ourselves. In other words, we can save ourselves.

Since Silverman's New Age philosophy incorporates various components of scientific knowledge, it parallels Scientology which states that Man is:

[...] basically good, and that his spiritual salvation depends upon himself, his fellows and his attainment of brotherhood with the universe.<sup>158</sup>

New Age religions, as is Scientology, are only attractive to an elite set of people, so their lack of appeal to the general public may explain why Silverman's New Age explanation has not received much attention.

*Conclusion:*

With the passing of time, the scientific and historic evidence against the Shroud comes and goes leaving virtually nothing left for the skeptic to hold on to. It is very difficult to deny that this cloth covered the scourged and crucified body of a man named Jesus and that the image was created by a burst of energy associated with the resurrection event. Compromises are possible, but the scientific facts cannot be readily explained in any other way.

As for the position of compromise that suggests that the image was placed on the cloth by a chemical reaction, this possibility has never been tested in a real situation. Paul Vignon's experiment shows that zinc vapours can have an effect on a photographic emulsion over a very short distance. Yet the picture he produced falls far short of the clarity of the image on the Shroud. His picture may have some properties of a photographic negative, but as noted, vapours diffuse through space and the best image that can be obtained will always be somewhat fuzzy. In addition, it is questionable that a decaying body would produce enough chemical vapour distributed evenly over the entire body so that the image appears of equal contrast throughout. At present, a burst of radiant energy of one form or

---

158. From Scientology home page at:

[http://www.scientology.ca/what-is-scientology.html?link=side\\_wis](http://www.scientology.ca/what-is-scientology.html?link=side_wis), accessed July 2015.

another is the only natural explanation that fits the physical properties of the image.

From his New Age philosophical perspective, Silverman concedes that a burst of energy accompanied a resurrection event, but he believes that the resurrection was not supernatural. Yet in this position of compromise, Silverman's explanation for the resurrection is not entirely as 'natural' as he attests it to be. If Jesus, as a normal human being, were able to invoke the forces in the Big Bang to bring life back to his own body, then this event would be supernatural, not natural. It may have a naturalistic explanation derived from an evolutionary perspective of our origins, but this explanation is extrapolated from the natural world into the supernatural. In other words, Silverman's New Age approach is not really avoiding the supernatural. Instead, it avoids having to confess that we are all fallen creatures in need of redemption through the blood of Jesus Christ.

I believe that if a person were able put aside all bias and be as true to themselves as they could possibly be, then they will realize that the best explanation for the Holy Shroud of Turin is that it is a genuine artifact of the resurrection of Jesus Christ, the Messiah. And being such, the Holy Shroud does far more than establish the fact that a man named Jesus has an imprint of his body on it. It shatters the very foundations of disbelief and provides the scientific evidence that Jesus is who he said he was:

"I am the way and the truth and the life. No one comes to the Father except through me. If you really know me, you will know my Father as well. From now on, you do know him and have seen him." (John 14: 6,7, NIV)

If we have seen the Father in Jesus for Jesus and the Father can be considered the same person, then another truth follows suit. The man who left his imprint on a grave linen in the tomb is

none other than the LORD God himself who walked and talked with Adam and Eve in the Garden of Eden. He is also the one to drive Adam and Eve out of paradise placing:

...mighty angels at the east of the Garden of Eden, with a flaming sword to guard the entrance to the Tree of Life. (Gen. 3: 24, The Living Bible)

But He is also the one to design into the created order at the very beginning of creation a biological mechanism that would allow him to enter his creation as the Second Adam should such a need arise—and it did. There are many generations from Adam to Christ, but through all these generations passes a continuous thread of hope leading from the original sin of Adam in the Garden of Eden to redemption through the Lord Jesus Christ at Calvary.



## Chapter 18

### From Adam to Christ

For over 25 years, I have had the opportunity to teach biology in a university which officially upholds the Bible and the fundamental tenets of the Christian faith. Some people may consider this environment stifling and cult-ish, but for me, it has been liberating and enlightening. It allows me to challenge my students to think more critically about both their science and their theology, and to weave into the fabric of their education elements of truth that they will carry with them for a life time.

One practice that this setting has encouraged me to follow is to begin some of my lectures with a short devotional which incorporates the topic of biology I will be covering. Often the devotional poses a question to the students to get them to think beyond the Bible passage, and to consider what-if scenarios. As might be expected, I tend to emphasise the relationship between the physiology of the human body and the various miraculous events recorded in the Gospels. The healing of the blind, the healing of the paralytics, the healing of the woman with an issue of blood, the healing of the lepers, and those troubled with demons, have all been used in various ways to encourage students to consider how our bodies are so intricately designed.

Following a lecture in which I used one such devotional, a student was overjoyed to share with me a recent event in which a hearing loss that he had experienced since a child was suddenly restored following a prayer for healing. Being a scientist at heart, my initial reaction was to ask for the proof. It did not take long for this student to provide the medical records and testing that supported this modern-day miracle.

Another favourite topic of my devotionals centres around the biblical facts associated with the creation of Adam and Eve, and who they were as real human beings. The Bible gives us very little information – just the facts. Some Christians believe these facts were recorded by Moses under divine inspiration, something akin to automatic writing,<sup>159</sup> and are truths that relate specifically to faith. They are not considered to be historically accurate. But the authenticity of the Shroud, and the explanation that the energy burst corrected for the actions of two real human beings, suggest otherwise. Moses may have been inspired, but he could also have been recording accounts of real historical events, rather than being used by God to convey religious truths embedded in metaphors and allegories.

If we assume that the Bible provides a reasonably accurate list of genealogies from Adam to Moses,<sup>160</sup> it is not beyond reason to believe that Moses received this information in its complete form from the oral tradition of the people he led out of Egypt. These people were the direct descendants of Jacob, and this Jacob knew Abraham for about 20 years. Abraham, in turn, knew Shem, one of Noah's three sons, for over 100 years. And Noah, himself, knew Seth, the third son of Adam, for 35 years. What was told by

---

159. Automatic writing or psychography is an alleged psychic ability allowing a person to produce written words without consciously writing. The words are claimed to arise from a subconscious, spiritual or supernatural source.

160. For a complete genealogy from Adam to Jesus, see A. C. Custance, "The Seed of the Woman," 3<sup>rd</sup> edition, E.M. White and R.G. Chiang, editors, Doorway Publications, Ancaster, Ontario, Canada, 2014. pp. 432-434. Available at [www.custance.org](http://www.custance.org).

Adam and Eve to Seth could be faithfully passed on orally, over just a few generations, until God himself appointed Moses to pen the written record.<sup>161</sup>

The verity of the story of Adam and Eve is also evident in the content of the story itself. It lacks any form of detail, providing only the main points which set the foundations for the Gospel: God created; Adam and Eve rebelled; God in the form of Jesus Christ redeemed; and all of the creation will be renewed. Adam may have been more descriptive as he conveyed his stories to his children, grand children, and great grand children, but like many of the stories that have been passed down to us from our own ancestors, only the bare facts tend to remain.

Below, I have taken the opportunity to retell Adam's story in my own words, and have included some of the missing detail that can be inferred from our understanding of biology and the effects of original sin. As with the devotionals for my students, I am not suggesting that any this additional information should be considered inspired, sacred or even true. I am simply postulating an interesting what-if scenario that could have been possible based on the premise that the Holy Shroud is a genuine artifact of the resurrection of Jesus Christ.

*When the time became appropriate, and he knew that Adam could understand, Jehovah sat down with Adam to tell him why he had created this universe, the world about him and especially why he created him.*

*"Adam," Jehovah spoke, "Before you were formed, and even before the creatures of the land, the fish of the sea, and the birds of the air appeared, I was here. I made possible everything you see. What you have been delighting in has come from my hands. All this was made for my enjoyment."*

---

161. For the degree of overlap between individuals in this genealogy, see Agape Bible Study, Old Testament Generations Listed from Adam to Moses, at: <http://www.agapebiblestudy.com/charts/Generations%20Adam-Moses.htm>, accessed November 2015.

*“See the animals,” the Lord continued, “how they joyfully play in this world of mine. They mate, reproduce after their own kind, and their offspring enjoy the bounty I provide. But Adam, I needed someone to share this with. Not an animal, but someone just like me. So I created you in my own image.”*

*As Adam took in this information, he may have wondered how he was made in the image of Jehovah. Like a pup is to the dog, or the foal is to the horse, Adam sensed that changes would be forthcoming if he were to grow into being like his creator. But this did not worry Adam. Life was wonderful. To feel the warmth of the sun and experience the aroma and taste of food was exceptionally satisfying. And to be in the presence of Jehovah, his creator and best friend, made life exciting and meaningful. Wherever Jehovah may have wandered off to every now and then was not a concern for Adam. Like a child experiencing newly discovered sensations, Adam was more than content to explore the wonders of his environment. He was alive!*

*Adam may not have recollected exactly when it happened, but his creator sat down with him on another occasion to tell him a new thing. It was now time for Adam to do something for Jehovah.*

*“Adam” then a pause.*

*“Yes, my Lord?” replied Adam.*

*“You are ready to step out into my world to be on your own. There you will discover the joy of working with your hands, making and constructing works of art, tools and implements. And you will have purpose in life. I am placing you in a beautiful garden I call Eden, and you will work to maintain this garden in a perfect state. Food will not be a problem for my trees will provide you with that. It will be a paradise.”*

*“But Adam,” Jehovah now directing his gaze on Adam more intently, “I also need you to learn what it means to be*

*independent. I am giving to you the responsibility of looking after yourself, and am asking that you learn to follow some simple rules. In this garden there will be two unusual trees that one day will make you like I am when the time is right. One will give you the knowledge of good and evil, and the other will give life. There are no barriers around these trees, but I ask you – no, I warn you – do not eat from the tree of the knowledge of good and evil. When you do, that day you will die.”*

*Adam remembers that Jehovah placed him within this marvellous garden, and left him to tend and care for it. Learning independence may be part of the maturing process, but this independence also left Adam alone. Jehovah may have chosen to visit at any moment, but Adam now needed a level of companionship that his creator was not able to give. So Jehovah brought to Adam all the animals he had formed to see which, if any, would make a suitable companion for Adam. Even though Adam named these animals, none were found suitable, because Adam was maturing. A cherished pet may meet the needs of a young boy, but a man requires an equal – not an animal, and not a God.*

*Many of us who are in our later years can remember when we first met our life-time mate. For me, I recall briefly exchanging smiles with Jennifer as we passed in the parking lot of the school we attended. It was a year later before we dated, but this eventful afternoon remains embedded in my mind and heart. Adam’s words of exclamation on first seeing Eve are often glossed over by the casual reader, but although they are few, they are deeply profound.*

*“Finally, after living with and talking to animals, I now have someone who is really who I am. She is wonderful; she is perfect!”*

*We are not sure how Adam came to know that Eve had been created from a piece taken out of him. Jehovah may have*

*warned him about the upcoming operation, or Adam may have derived this information from examining his own body. There was the scar showing that his side had been opened; and he could feel the space that the missing bone had left behind. Moreover, before him stood another human being with the same body plan, the same soft flesh, the same hair, and with a face that was beautiful yet still like his.<sup>162</sup>*

*Adam also recognized, as he did from the habits of animals which he knew well, that here was his mate. No longer alone, he had become one of a pair created to reproduce after their own kind. She was not only his companion, she was his wife. How long they lived in this paradise is not recorded – maybe days, months or even years. It was certainly long enough for them to have developed an emotionally charged personal relationship. What is recorded is that they “were both naked, and were not ashamed” (Genesis 2: 25). In today’s parlance, they were children living in a playground paradise. But this paradise was not to last.*

*Paradise ended when Eve did the one thing Jehovah asked that they not do. She ate from the tree of the knowledge of good and evil. Then she gave some of the fruit to Adam. The account of this interaction with Adam after Eve had consumed the fruit states only that “she gave some to her husband, and he ate” (Genesis 3: 6, RSV). And by eating of the fruit, Adam set the course for the rest of human history.*

---

162. Modern advances in genetic engineering have shown that a new individual can be created from a single cell of a donor, which provides another way to consider how Adam’s rib was used to form Eve. As I note in my book, “Rescuing Science from Preconceived Beliefs” (2<sup>nd</sup> Edition, Doorway Publications, Ancaster, Ontario, Canada, 2011, p. 281) “Cloning occurs when a cell from a donor organism is prompted to use its genetic information to make more cells, and eventually to reconstruct an entirely new organism. Interestingly enough, all you need is one cell, and the cell that tends to be best suited for producing more cells is that which is found in the bone, and the best bone tends to be the rib!”

*Why did Adam eat the fruit? What made him deliberately disobey Jehovah's one command, and willingly accept the consequences?*

*There before him stood his wife, Eve. Consuming the fruit would have altered her, and however that may have been perceived, Adam knew she was not like him. He could have turned her aside, but he didn't. He experienced an intangible but real attachment to his wife. Life would not be worth living without her, so he chose to follow his wife and to be like her. He asked no questions; he ate.*

*Adam knew that his action disobeyed Jehovah's command and would cause him to die. But he was not fully aware of how Jehovah would respond. If Jehovah loved Adam as Adam had grown to love Eve, Adam could hope that Jehovah would find a way to rescue both of them from their plight. Adam may have simply acted in faith, the first great test for humankind, and that faith was affirmed by Jehovah's own words to the serpent:*

*"Because you have done this[...]  
I will put enmity  
between you and the woman,  
and between your offspring and hers;  
he will crush your head,  
and you will strike his heel." (Gen. 3:14-15, NIV)*

*Thus, at the dawn of the human race Adam had the hope that they would be rescued or redeemed, and one of their offspring would restore them to their rightful place. And Adam passed this hope down to his descendants, and Jehovah used his prophets throughout the centuries to reaffirm this hope to humankind...until the angels declared:*

*“For unto you is born this day in the city of David a Saviour,  
which is Christ the Lord.” (Luke 2: 11, KJV)*



## Epilogue

Preconceived beliefs and biases play a major role in determining how one views historical and scientific facts. To appreciate the truth that any set of facts may hold, a person often needs to break through layers of prejudice. The overall aim of this book has been to navigate the reader through a jungle of misinformation, misconceptions and ignorance associated with the Holy Shroud, and to reaffirm its authenticity by showing that all the facts of the Shroud are fully explainable when it is considered a genuine artifact of the resurrection of Jesus Christ. When we strip away the multitude of opinions and inane theories related to this cloth, and consider only the biblical, historical and repeatable scientific facts, the Holy Shroud cannot be anything other than genuine. Whether the image was created unintentionally from a supernatural event that had an impact on matter in our physical universe, or was divinely prescribed to capture this event for the edification of believers, is a question that goes beyond the confines of science. Nevertheless, when we allow science to expand into the supernatural, as I have done so with the image on the Shroud, the scientific proof for the Shroud's authenticity is astronomical.

Skeptics will continue to ignore the logic which attests to the reality of this relic, and will devise imaginative theories to explain

it in natural terms. I do not expect every reader to accept my arguments. We all have developed our own bias when it comes to faith in the invisible world, and if this bias rejects the beliefs of Christianity and the resurrection, it is not only difficult, but impossible, to relate the existence of the Shroud to the god who created the universe and decided, for one short period of time in the history of humankind, to take on human form. This scenario resembles more the plot of a science fiction novel than a real life experience. It is exciting on the one hand, but hard to believe on the other.

Whether or not you allow yourself to believe in a supernatural reality that transcends our natural world, I hope I have conveyed at least one important possibility to the reader: *if we assume the Bible provides a true picture of reality, then the image on the Shroud is evidence for this reality. And although we have yet to understand the physical process by which the image was placed on this cloth, this reality also provides a compellingly logical reason that the resurrection created an energy burst as the physical components of the body were allowed to return to their original glory – a state untouched by sin.*

As noted in the previous chapter, this amazing story goes beyond the physical elements of matter at the time of the resurrection. It extends far back in time to that eventful day when Adam decided to reject God and to follow Eve into her folly. The Scriptures tell us very little of this event; the Shroud has provided some intriguing thoughts which, for me, have been mind-boggling. Skeptics and atheists alike may choose to reject the solid, scientific and undeniable proof that the Holy Shroud is a genuine artifact of the resurrection of Jesus Christ, but in spite of our unbelief, our Lord and Saviour will continue to invite all to come to him, where we can find rest (Matt. 11: 28).

Centuries ago, the Apostle Paul noted in his letter to the Romans that,

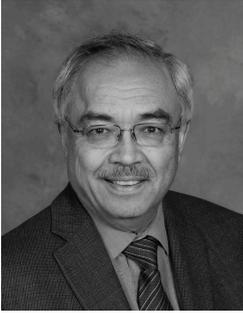
[...] since the creation of the world God's invisible qualities – his eternal power and divine nature – have been clearly seen, being understood from what has been made, so that people are without excuse. (Romans 1:20, NIV)

Paul's observation applies to God's *invisible* qualities, but the Shroud is *visible*. In this mysterious ancient cloth lies the Gospel message for the world to see. Our redeemer has come, and all of humankind has the privilege of basking in the love he has so generously shared with this world. Adam lived with the hope of a coming redeemer, and Job could state with certainty that,

I know that my redeemer lives,  
and that in the end he will stand on the earth.  
And after my skin has been destroyed,  
yet in my flesh I will see God;  
I myself will see him  
with my own eyes – I, and not another.  
(Job 19: 25-27)

How much more should our faith be reassured since we now have the scientific evidence to show that our Redeemer has stood on this earth, and that evidence is here for all of us to see with our very own eyes.

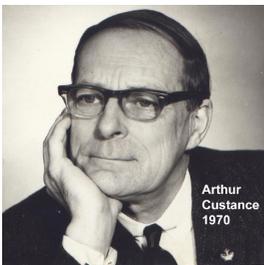




Gary Chiang received his M.Sc. (1979) and Ph.D. (1983) in the area of invertebrate neurobiology from the University of Toronto, then worked for eight years at York University, Toronto, studying the neuroendocrinology of crustaceans and insects. In 1990, he accepted a professorship at the newly formed Redeemer College, a privately-funded Christian liberal arts university where he has pursued research and teaching from a Christian perspective.

Dr. Chiang has made significant contributions to insect physiology as well as to the area of faith and science, publishing peer-reviewed academic articles in each. He specializes in the sexual physiology of *Rhodnius prolixus*, the insect vector of Chagas disease, and has been described as a world leading expert on faith and science as it applies to the Holy Shroud of Turin. In 2012, he became director of The Arthur Custance Centre for Science and Christianity.

**ARTHUR CUSTANCE CENTRE  
for  
SCIENCE AND CHRISTIANITY**



*Vision Statement:* This centre is a non-profit Christian ministry which seeks to preserve, promote, and republish the written works of Arthur Custance and to stimulate continued research of the Bible in the light it receives from and contributes to the whole field of knowledge by means of publications, electronic media, and education.

*Mission Statement:* This centre seeks to encourage an integrated World View which bridges natural (scientific) and revealed (theological) knowledge so as to foster a deeper understanding of the harmony between theology and science. Website: [www.custance.org](http://www.custance.org)