

Summary of Challenges to the Authenticity of the Shroud of Turin

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A. Introduction

The Shroud of Turin is purported to be the literal burial shroud of Jesus Christ, and its authenticity has thus aroused intense debate and sometimes hostile rhetoric between those who believe that the Shroud is authentic (or at least believe that it is the actual burial shroud of a crucified man who may or may not have been Jesus), and those who do not. Many attempts have been made by skeptics to challenge its authenticity on various grounds, as well as to develop alternative theories to explain how the images on the Shroud could have been faked or generated by a variety of mechanisms. The Shroud of Turin is therefore the most highly studied relic in the history of the world.

The history of religious artifacts is filled with fraudulent attempts to make money at the expense of naïve worshippers, and many fake shrouds have been produced. In 1902 François de Mely claimed that there were forty-two medieval shrouds of Christ around Europe, and he even named the towns whose inventories mentioned them (these were either simply pieces of cloth or artistic copies, and a number of these “shrouds” still exist).¹ Even though many of these fake shrouds were not done with the intent to deceive (i.e., they were meant simply as artistic representations of Christ, and as an aid to worship, rather than as a means of raising money), nevertheless, it is very appropriate that the Shroud of Turin be approached with an attitude of skepticism. However, the evidence for the Shroud’s authenticity is so comprehensive and compelling that if it were an object with no religious overtones, there would be little serious doubt as to its veracity. But being the purported burial cloth of Jesus Christ and a possible witness to his resurrection, and hence to the alleged truth of Christianity, the Shroud raises powerful passions. Accepting or rejecting the authenticity of the Shroud is to many thus an issue of religious or anti-religious conviction. However, those who seriously seek to study the Shroud should approach it with an open mind and lay aside their religious persuasions as they examine the evidence, both pro and con.

Because challenges to the Shroud have been made and refuted in many forums, an interested reader must search in a number of places to find the desired information. The purpose of this paper is not to present any new theories or evidence, but rather to gather all of the known challenges to the Shroud’s authenticity along with answers to each challenge. These will be stated in summary form, and in (hopefully) clear English for a non-technical audience. References are also provided so that such a reader can easily investigate each issue in more detail. However, it should be noted that web pages may be taken down or relocated by the web masters of the associated sites, creating a dead link. That eventuality is beyond the control of any author.

¹ Daniel Scavone, *Deconstructing the “Debunking of the Shroud”*, www.shroud.com/bar.htm

B. Nature of the Challenges to the Shroud

The first general type of challenge to the Shroud concerns its historical veracity—that is not a genuine historical relic dating from circa 33 AD. There is no way of definitively proving that the Shroud is authentic, as by its very nature a historical artifact cannot be proven true, especially one that is supposedly 2,000 years old. The best that one can do is to cite documentary evidence that argues for or against its existence at various points in the past.

The second general type of challenge to the Shroud is in regard to issues of forgery and science—a historical artifact can be disproven or cast into serious doubt by demonstrating that it either was or could have been made in another era. This approach assumes that the Shroud was somehow produced by a medieval forger (the documented history of the Shroud goes back to the fourteenth century), and seeks to explain how a technology available to an artist at that time could have been used to produce a fake shroud.

Both historical and scientific challenges are considered below.

C. Characteristics of the Shroud

Historical research, as well as the intensive scientific studies that have been done on the Shroud, have shown that it has a number of properties that must be considered and answered by any skeptic who seeks to challenge the Shroud's authenticity. These characteristics are as follows:

- **First Recorded Showing.** The first recorded showing of the Shroud was in the period 1355-57, and it was publicly displayed many times after that, so if it were a painting or other type of forgery, it must have been done prior to or during that period, and with the technology available in that era. Leonardo DaVinci, who some have alleged to be the artist, was born in 1452.
- **Body Characteristics.** The Shroud image is highly realistic and detailed, and depicts many bodily wounds that are completely consistent with Biblical accounts of the crucifixion, such as whipping, lacerations, contusions, scalp punctures, wound in the side, etc. Detailed examinations of the image by medical investigators have uniformly confirmed its accuracy.
- **Lack of Clothing.** The Shroud figure is naked, which would have been repugnant and unacceptable for a medieval artist in depicting Christ.
- **Nails through the Wrists rather than the Hands.** The plethora of artistic depictions of Jesus from the first through the sixteenth centuries all show him as being nailed to the cross through the hands, whereas in the Shroud image he is nailed through the wrists (the Shroud only shows the exit wounds and does not depict at what point the nails entered). As indicated below, nailing through the hands would not have supported a man's weight, and the purported artist would have had to have both knowledge of that fact, and gone against all artistic

precedent.

- **Image Characteristics.** The Shroud is linen, and raw unprepared linen repels water and is a difficult medium to work on. Furthermore, there are no pigments or brushstrokes. The image is without substance, and is made up of “lines” of darker coloration imprinted into the surface fibers of the cloth. These lines are approximately 1/100 the width of a human hair, making it impossible for the image to have been painted or manually created by an artist. Also, the depth of the actual Shroud image is very thin.²
- **Foreshortening.** Because the man’s head and knees are slightly bent, the image has foreshortening in it. The concept of foreshortening was first discovered and used by the Renaissance painters some time after the Shroud was first shown.³
- **Photographic Nature.** The image is “photographic” in nature rather than “artistic,” and there is no artistic “style.”⁴ However, it lacks the sharp edging and outline of a photograph or a painting, and also lacks color differentiation—the entire image is a fairly-uniform sepia-yellow tone.
- **Negative Image.** The picture on the Shroud is actually a negative image, and must be photographically inverted to see the positive image. Concepts of negative images were certainly known in the past; for example, the mold that is used to cast a statue is a “negative image.” But no true negative images were seen until the invention of photography around 1826. In fact, this aspect of the Shroud was not noticed until the Shroud was first photographed in 1898.⁵
- **3D Image.** The image has three-dimensional qualities, as the darkness of the image is proportionate to the distance between the cloth and the associated body part. For example, the nose area is shown very strongly, but the eyes less so. Three-dimensional “maps” have been created using several image analyzing systems that show the face and other parts of the body of the Shroud man in bas-relief.⁶
- **Blood.** A number of researchers have demonstrated the presence of blood on the Shroud in various places, and some have done DNA testing, but the blood has proved to be too old and degraded to obtain any useful DNA test results.⁷ It has also been shown that there is no image in the areas where the blood exists; the

² Alan D. Adler, *The Nature of the Body Images on the Shroud of Turin*, www.shroud.com/pdfs/adler.pdf

³ Isabel Piczek, *Is the Shroud of Turin a Painting?*, www.shroud.com/piczek.htm

⁴ Isabel Piczek, *The Concept of Negativity Through the Ages vs The Negative Image on the Shroud*, www.shroud.com/piczek3.htm

⁵ Isabel Piczek, *The Concept of Negativity Through the Ages vs The Negative Image on the Shroud*, www.shroud.com/piczek3.htm

⁶ Peter M. Schumacher, *Photogrammetric Responses from the Shroud of Turin*, www.shroud.com/pdfs/schumchr.pdf

⁷ Raymond Rogers, *Frequently Asked Questions*, www.shroud.com/pdfs/rogers5faqs.pdf

blood was apparently deposited on the Shroud first, and acted to inhibit the image formation mechanism.

- **Secondary Image.** It was recently discovered that there is another faint facial image on the back side of the cloth matching the main facial image, making it very hard for the Shroud to be a fake.⁸ This was not detected previously because of the backing material that had been sewn on to the Shroud.

The above known characteristics create a high standard for all would-be Shroud debunkers. In the words of the Shroud researcher John Walsh,

The Shroud of Turin is either the most awesome and instructive relic of Jesus Christ in existence... 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.⁹

Donald Lynn, a member of the STURP team in considering the incredibly difficult task of artistically creating the Shroud image, concluded, “It would be miraculous if it were a forgery.”

D. Challenges to the Shroud’s Authenticity

Following are the significant challenges that have been made to the Shroud of Turin’s authenticity.

1. The Shroud was missing for much of its purported history

There are gaps in the historical record for various periods, and the early evidence is especially weak. That fact, in itself, does not disprove the Shroud, but does raise questions about its authenticity. Following is the historical and documentary evidence for the existence of the Shroud that has been discovered by scholars. The history is divided into periods, each of which represents a movement of the Shroud from one location or holder to another.

- a. **The period from c. 33 to 544**—Shroud location not known, possibly Edessa, Antioch, and/or Jerusalem.

There is a complete lack of any known documentary evidence for the Shroud’s existence in Biblical times. The first known record of its possible existence was in the fourth century.¹⁰ However, it must be remembered that Christians were persecuted and repressed during this time, first by the Jewish authorities and later by the Romans. Persecution began immediately (c. 33 AD) and continued in fits and starts until the Emperor Constantine’s Edict of

⁸ Giulio Fanti and Roberto Maggiolo, *A New Shroud Image Discovered in 2004*, www.skepticalspectacle.com/images11.htm

⁹ William Meacham, *The Authentication of the Turin Shroud: An Issue in Archaeological Epistemology*, www.shroud.com/meacham2.htm

¹⁰ Jack Markwardt, *The Fire and the Portrait*, www.shroud.com/markwar2.htm

Milan in 313. Christians often met in secret and did not generally have public places of worship during the first three centuries. Therefore, any important relics would have been kept hidden.

There is a fourth-century Syrian story from Edessa about a religious object known as the “Mandylicon cloth” which reappears at various times.¹¹ King Abgar, a ruler of Edessa from 177 to 212, was reputed to have become a Christian. He made a request to the Pope to send religious emissaries to Edessa, which was recorded in the *Liber Pontificalis*, the records of papal actions. There is a later iconic picture of King Abgar holding the Shroud with the face of Christ displayed.¹²

b. **The period from 544 to 944**—Shroud is in Edessa.

In 544 a religious object known as the “Mandylicon cloth” was presented to the ruler of Edessa and kept in the city for four hundred years. It was said to be a “holy palladium” with protective properties and it supposedly protected the city of Edessa from attack by the Persians.¹³ According to some stories, the Shroud was hidden inside one of the city walls of Edessa, perhaps for most of the time of its existence there, and possibly forgotten.

There are several references to the Shroud during this period; in 730, St. John Damascene, in his anti-iconoclastic thesis, *On Holy Images*, describes the cloth as a *himation*, which is translated as an oblong cloth or grave cloth.¹⁴ Pope Stephen II (752—757) described the Shroud as follows: “Christ spread out his entire body on a linen cloth that was white as snow. On this cloth, marvelous as it is to see... the glorious image of the Lord's face, and the length of his entire and most noble body, has been divinely transferred.”¹⁵

c. **The period from 944 to 1204**—Shroud is in Constantinople.

The Shroud was thought to have been kept in Edessa until 944 when Byzantine troops besieged the city. The general of the Byzantine forces offered the city's Moslem Emir a huge sum of money, the freeing of 200 Moslem captives, and the promise of perpetual immunity, all for just one thing—the “Mandylicon cloth.”¹⁶ It was then brought to Constantinople on 15 August 944 for the purpose of “obtaining a new and powerful force of divine protection.”¹⁷ The Shroud's arrival was celebrated with processions and it was placed in the Pharos Chapel, the imperial treasury for relics located in the palace of the emperor. There are several surviving eyewitness accounts of that day—the *Narratio de Imagine Edessena*, the *Teaching of Addai*, and the *Acts of Thaddeus*, which—among other subjects—retold the story of King

¹¹ Jack Markwardt, *Antioch and the Shroud*, www.shroud.com/pdfs/markward.pdf

¹² Barrie M. Schwartz, *The Shroud of Turin*, www.shroud.it/events.htm

¹³ Jack Markwardt, *The Cathar Crucifix: New Evidence of the Shroud's Missing History*, www.shroud.com/pdfs/markwar3.pdf

¹⁴ *Mozarabic Rite, a Clue to the Shroud of Turin?*, www.shroudstory.com/faq-mozarabic.htm

¹⁵ *Mozarabic Rite, a Clue to the Shroud of Turin?*, www.shroudstory.com/faq-mozarabic.htm

¹⁶ John Ritchie, *The Templars, The Shroud, The Veil and the Mandylicon*, www.templarhistory.com/mandylion.html

¹⁷ Jack Markwardt, *Antioch and the Shroud*, www.shroud.com/pdfs/markward.pdf

Abgar and related that the facial image on the Shroud was extremely faint, like a “moist secretion without pigments or the painter’s art.”¹⁸ Gregory Referendarius, archdeacon of Hagia Sophia in Constantinople, was apparently a member of the clerical committee that arranged for the reception of the Shroud. In a sermon dated 16 August 944, he mentioned that it was a full-length image of Christ and carried his bloodstains.¹⁹ Nicholas Mesarites, the overseer of the imperial relic treasury in Constantinople, described the Shroud in 1201, indicating that “in this place the naked Lord rises again, and the burial sindons can prove it.” Mesarites’ description is particularly vivid and true-to-life because of his indication of the nudity of the Shroud figure, which was never done in artistic renderings of Christ. Thereafter the Shroud was regularly shown in Constantinople, although it was typically folded and kept in a reliquary so that only the face was visible.

In 1147, Louis VII, King of France, visited the city and venerated the Shroud, and it first appears in the lists of relics held at Constantinople in 1093 as “the linens found in the tomb after the resurrection.” The Shroud was also seen and reported on by various crusaders when they visited during the crusader period of 1098 to 1204.

- d. **The period from 1204 to 1355**—Shroud is probably in Greece, then France. The fourth crusade brought knights from Europe to Constantinople in 1204, and there were several written testimonies of crusaders who saw the Shroud in Constantinople. These included the knight Robert de Clari who noted the following:

There was a Church which was called of My Lady Saint Mary of Blachernae, where there was the shroud in which Our Lord had been wrapped, which every Friday, raised itself upright so that one could see the form of Our Lord on it, and no one either Greek or French, ever knew what became of this shroud when the city was taken.²⁰

The city of Constantinople was sacked by the crusaders on 12 April 1204, and according to tradition the Shroud was then brought to Greece or possibly France, but the date and the circumstances of the seizure are unknown. There is an inventory of the items in the Constantinople treasury, supposedly from 1207, which lists the Shroud the Christ and indicates that it still “smelled of myrrh.” However, in 1205 Theodore Ducas Angelos wrote in a letter to Pope Innocent III:

The Venetians partitioned the treasure of gold, silver and ivory, while the French did the same with the relics of saints and the most

¹⁸ Daniel Scavone, *Joseph of Arimathea, The Holy Grail, and the Edessa Icon*, www.shroud.it/scavone1.pdf

¹⁹ www.religionfacts.com/christianity/things/shroud_of_turin.htm

²⁰ www.religionfacts.com/christianity/things/shroud_of_turin.htm

sacred of all, the linen in which our Lord Jesus Christ was wrapped after His death and before the resurrection.²¹

Around the year 1211, the English lawyer and chronicler Gervase of Tilbury wrote his monumental *Otia Imperialia* and remarked in one passage:

The story is passed down from archives of ancient authority that the Lord prostrated himself with his entire body on whitest linen, and so by divine power there was impressed on the linen a most beautiful imprint of not only the face, but the entire body of the Lord.

It is uncertain what became of the Shroud in the aftermath of the destruction of Constantinople during the fourth crusade. However, the explanation with the most documentary evidence, was that the Shroud was given to Othon de la Roche, a knight from the Burgundy region of France. He commanded the district of Blachernae where the Shroud had been kept, and after the sack of Constantinople by the crusaders, he is said to have been given the Shroud as well as the duchy of Athens in Greece for his leading role in the crusade. Othon then became the Duke of Athens and Sparta and supposedly took the cloth with him to Greece. The Shroud was seen there according to two eyewitness accounts, by a letter of Theodore of Epirus dated 1 August 1205, and indirectly by Nicholas of Otranto, abbot of the monastery of Casole in 1208.

In 1219 an agent of the Byzantine emperor and ally of Othon went on a mission to Burgundy with a safe conduct pass and an armed guard, and it is possible that he carried the Shroud with him and gave it to Ponce de la Roche, Othon's father. Alternatively, it could have been brought to France by Othon himself when he returned to Burgundy in 1224. The Shroud was then likely given to the Archbishop of Besançon and placed in the Cathedral of St. Etienne in Besançon, where it is said to have been displayed each year on Easter until 1349. There are no records of it being displayed, but in 1349 a fire destroyed the cathedral and all of its records, but the Shroud was removed and saved from the flames. At some point a painting was made of the frontal image of the Shroud and this painting was shown in the Besançon Cathedral starting in 1356. But the real cloth was said to have been removed and given to Jeanne de Vergy, the great-great-granddaughter of Othon de la Roche and therefore probably the legal owner of the Shroud.

Jeanne de Vergy married the French knight Geoffrey de Charny sometime in 1352-1353, and she supposedly gave him the cloth as a type of dowry or wedding gift. De Charny has been attested through much documentation as the first definitely known owner of the Shroud, and he then made it available for public display beginning around 1355. There are also other possible explanations for the Shroud's whereabouts during the period of

²¹ *The Mozarabic Rite, a Clue to the Shroud of Turin?*, www.shroudstory.com/faq-mozarabic.htm

1204-1355, but with less documentary support.²²

- e. **The period from 1355 to 1464**—Shroud is in France and Italy. Historical evidence suggests that Geoffrey de Charny acquired the Shroud at some point between April 1349 and January 1354, and that either he or his wife arranged for it to be shown for the first time in Europe, beginning around 1355.

De Charny was a man of honor and great influence in France—a counselor to King Phillip VI and his son, King John II the Good. De Charny was captured by the English after the Battle of Calais in 1349 and ransomed by King John II in 1351. Upon returning to France and marrying Jeanne de Vergy, he built a church in his home town of Lirey, a small town near Troyes in France, and named it the Annunciation of St. Mary, in praise to God for his rescue from the English. The first display of the Shroud in Europe was in this church. De Charny was given the highest honor of carrying the *Oriflamme*, the banner of the king, into battle. He died at the Battle of Poitiers in 1356, shielding King John II from the attack of the English, and his widow continued the Shroud displays at Lirey for an unknown period. As in the case of other relics, a fee was charged to view the Shroud, possibly because Jeanne was in financial straits after the death of her husband. Many pilgrims came to see it, but the displays eventually were stopped for reasons unknown.

Jeanne de Vergy remarried in 1389, and her new husband, Aymon of Geneva, was the uncle of the Avignon Pope Clement VII. At this point Jeanne and her son Geoffrey II decided to exhibit the Shroud again. Displaying a relic required ecclesiastic approval which would normally have been sought through the local bishop, who at the time was Pierre d’Arcis, the Bishop of Troyes. But due to her husband’s influence with the Pope, Jeanne and her son circumvented D’Arcis and appealed directly to the papal legate, Cardinal Pierre de Thury. Papal endorsement was duly given, and the Shroud was again put on display. Special souvenir medallions were struck to commemorate this Shroud exhibition (a surviving specimen can be seen at the Cluny Museum in Paris), and it is at this point that the documented history of the Shroud begins, ironically with a complaint about its authenticity.

Bishop D’Arcis of Troyes strenuously objected to this exhibition and after writing to King Charles II and getting nowhere, he wrote the now-famous *D’Arcis Memorandum* to Pope Clement VII. In his memorandum Bishop D’Arcis referred to the Archbishop Henri de Poitiers, who had supposedly come to the conclusion that the Shroud was a forgery some “thirty-four years or thereabouts” previously (i.e., in 1355) and had supposedly conducted an inquest into the Shroud at that time. This memo is often used to “prove” that the Shroud was not genuine—it indicates that an artist had confessed to painting the Shroud. But the artist was never identified, no confession has ever been found, and it is not clear that D’Arcis ever examined the Shroud himself. Furthermore, D’Arcis’ motives have been questioned for several reasons: in addition to his pique about not being

²² Richard B. Sorensen, *The True Holy Grail*, www.unholygrailbook.com/docs/the_true_holy_grail.pdf

consulted, D’Arcis apparently wanted the revenues from the Shroud flowing to him in Troyes. The roof of the Troyes Cathedral collapsed around the same time that he wrote his Memorandum, and many of the relics were damaged or destroyed; D’Arcis needed cash for repairs and to compensate for the loss of his relics revenue. Also, the only known correspondence from Henri de Poitiers to Geoffrey de Charny, which is dated 1356, praises De Charny for his piety and chivalry, and for helping to develop the “divine cult.” It is unclear what Poitiers means by this, but it may have been a reference to the Shroud displays.

In any case, a series of correspondences ensued between Clement VII, the churchmen of Lirey, and the De Charnys. The final result was a papal order to D’Arcis requiring him to be silent and refrain from any further attacks under pain of excommunication, and another to the De Charnys and the Lirey church allowing them to display the Shroud but with the stipulation that it could not be claimed as the true Shroud of Christ. The next year Clement reversed himself and issued a papal order granting new indulgences to those who visited the Lirey church and its relics, indicating that he then probably believed the cloth to be genuine. During this period the Shroud remained with the De Charny family.²³

f. **The period from 1464 to present**—Shroud is in Italy.

After the death of Geoffrey II, the Shroud came into the possession of Margaret de Charny, his daughter, who allowed it to be publicly viewed on a number of occasions during the period of 1400-53. In 1453-54 she sold the Shroud to the Duke Louis I of Savoy and received the castle of Varambon and revenues of the estate of Miribel near Lyon for “valuable services” from him. Meanwhile the Lirey churchmen, missing the income that had been generated by the Shroud, were attempting to get it returned to them. In 1464 Duke Louis I of Savoy agreed to pay them an annual rent, to be drawn from the revenues of the castle of Gaillard, near Geneva, as compensation for their loss of Shroud revenues. This agreement was drawn up in Paris and is the first known document indicating that the Shroud had become the property of the Savoys. The agreement specifically noted that the Shroud had been on display at the church in Lirey; that it had been owned by Geoffrey de Charny, lord of Savoisy and Lirey; and that it had then been transferred to Duke Louis I by Margaret de Charny, Geoffrey’s granddaughter. Around twenty years later a history of the Savoy family recorded that Louis’ acquisition of the Shroud was his greatest achievement.

Later generations of the Savoys periodically displayed the Shroud, built churches to house it, and often took the Shroud with them when they traveled. It was shown in public many times in various places, and was finally moved to Turin, Italy in 1578. In 1694 the Shroud was placed in the Guarini

²³ For the texts of the D’Arcis Memorandum and the letter of Henri Poitiers, as well as more information on Geoffrey de Charny, see Richard B. Sorensen, *The True Holy Grail*, www.unholygrailbook.com/docs/the_true_holy_grail.pdf.

Chapel in Turin where it remains to this day.²⁴ In 1983 Umberto II, the ex-king of Italy and legal owner of the Shroud, died. In his will he bequeathed it to the Pope and his successors, with the stipulation that the relic must remain in Turin.

The above is a summary account of known Shroud history; other sources provide much more detail on various periods of its history.²⁵ Again, historical evidence by its very nature cannot prove or disprove the Shroud, and can only serve to argue for or against it.

2. The Radioactive dating results of 1988 prove the Shroud is a forgery

The carbon dating tests done on the Shroud in 1988 indicate that the cloth should be dated to the Middle Ages (1260-1390), which is the main reason that many believe that the Shroud is not genuine. Following is an extract from the report:

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

The results of radiocarbon measurements from the three laboratories on four textile samples, a total of twelve data sets, show that none of the measurements differs from its appropriate mean value by more than two standard deviations. The results for the three control samples agree well with previous radiocarbon measurements and/or historical dates.²⁶

When the above dating results were published secularists breathed a sigh of relief and concluded that the Shroud was a fake and could be safely ignored. However, the dating procedures used were questioned even before the results were announced:²⁷

²⁴ Jack Markwardt, *Antioch and the Shroud*, www.shroud.com/pdfs/markward.pdf

²⁵ References include the following: Ian Wilson, *Highlights of the Undisputed History*,

www.shroud.com/history.htm,

John Ritchie, *The Templars, The Shroud, The Veil and the Mandylion*,

www.templarhistory.com/mandylion.html,

Daniel Scavone, *Evidence of the Shroud in Constantinople Prior to 1204*,

www.shroud.com/pdfs/scavone.pdf,

Daniel Scavone, *Joseph of Arimathea, The Holy Grail, and the Edessa Icon*, www.shroud.it/scavone1.pdf,

Jack Markwardt, *Antioch and the Shroud*, www.shroud.com/pdfs/markward.pdf,

Jack Markwardt, *Was The Shroud In Languedoc During The Missing Years?*,

www.shroud.com/markward.htm,

Jack Markwardt, *The Cathar Crucifix: New Evidence of the Shroud's Missing history*,

www.shroud.com/pdfs/markwar3.pdf

²⁶ *Radiocarbon Dating of the Shroud of Turin*, www.shroud.com/nature.htm

²⁷ William Meacham, *Radiocarbon Measurement and the Age of the Turin Shroud: Possibilities and Uncertainties*, www.shroud.com/meacham.htm,

Joseph G. Marino, *Evidence for the Skewing of the C-14 Dating of The Shroud of Turin due to Repairs*,

In 1986, a group of about twenty experts in various aspects of carbon dating met in Turin for the sole purpose of setting up the protocol for the procedure, knowing that this would be the most complicated and controversial carbon dating ever done. Among the group's recommendations were the taking of seven samples from seven different places, the use of seven laboratories and two techniques, the careful analysis of the samples to determine their characteristics and contents before the carbon dating itself, the use of careful controls, and the collating and tabulation of the test results before releasing the information to the public.

For reasons that remain very unclear but are suspicious to many of us, shortly before the taking of the sample in 1988, the protocol was completely discarded by the then scientific advisor to the then Cardinal, the Archbishop of Turin, who is custodian of the Shroud. The advisor allowed only one sample to be taken, he (instead of the recommended textile expert) determined where the sample would be removed, and he used only three of the laboratories and one of the test methods. Many objected to this violation of the protocol but were told basically to get lost if they didn't like it.

When we heard where the single specimen was taken from, we were appalled, as he chose the worst possible site on the Shroud, even though he had been advised to stay away from such areas. The specimen was taken from the lower edge of the Shroud on the side that has the seam running its full length (the anterior aspect), next to the missing corner. This is visibly the dirtiest area on the Shroud (having been handled by this corner on numerous occasions over the centuries), and it is also at the edge of burn marks and a water stain from 1532. The sample taken included the seam which was added at an unknown date probably to help reinforce the Shroud fabric. The seam and some extraneous fibers were trimmed from the specimen. Contrary to the common idea that three different specimens were tested, three pieces were cut from the one specimen, one piece being given to each of the three laboratories so that the single specimen was tested three times, and only by a single technique (AMS).

Subsequent testing of a piece of the single specimen showed bacteria and fungi growing inside the linen fibers and a biogenic varnish on some of the threads, none of which would have been removed by the usual cleaning techniques. The specimen was also shown to be chemically radically different from the fibers in the rest of the Shroud. The effects of the fire of 1532 on the carbon 14 content of the fabric are also not clear.

www.shroud.com/pdfs/marben.pdf,

Sue Benford, *Historical Support of a 16th Century Restoration in the Shroud C-14 Sample Area*,

www.shroud.com/pdfs/histsupt.pdf,

Sue Benford, *Textile Evidence Supports Skewed Radiocarbon Date of Shroud of Turin*,

www.shroud.com/pdfs/textevid.pdf

Gilbert Raes, *Rapport d'Analyse, La S. Sindone*, Rivista Diocesana Torinese, 79-83

Ian Wilson, *An Appraisal of the Mistakes Made Regarding the Shroud Samples Taken in 1988 - and a Suggested Way of Putting These Behind Us*, www.shroud.com/wilson.htm

We do not argue that the three laboratories did not precisely measure the carbon 14 in the samples they were given, but anyone with even a faint understanding of archaeology knows that a specimen contaminated with additional carbon 14 from any source will give an incorrect date younger than the actual date of the specimen. With only one specimen tested, especially with its known multiple problems of contamination, no valid statement about such a complex object as the Shroud can be made.²⁸

But the *coup de grace* for the dating process came from a study released on 20 January 2005, in which Raymond Rogers, a scientist from the Los Alamos National Laboratory and one of the original members of the STURP team, conclusively demonstrated that the samples used for the original radiocarbon tests were taken from a rewoven area of the Shroud, and therefore did not represent the original fabric.²⁹ The 1988 Shroud dating tests and results have thus been completely discredited. Dr. Rogers work was independently corroborated by others, notably by John Brown, a Principal Research Scientist from the Georgia Institute of Technology.³⁰ No new dating processes have, as yet, been proposed or scheduled.

3. The Shroud image was a man other than Jesus Christ

One aspect of the Shroud for which there is little challenge is the accuracy and lifelike quality of the graphically depicted wounds suffered by the man in the image. There is general agreement that the image is of a naked, tortured, and crucified man, and that the wounds correspond to the description of Jesus' crucifixion in the Gospels.³¹ There are blood stains on his scalp, feet, wrists, and right side, and lacerations over the entire body, particularly on his back.³²

However, there is no way of definitively proving that Shroud man was Jesus Christ, and some have claimed the image is that of someone else. One contemporary author stated that the man in the image is actually Jacques de Molay, the last official Grand Master of the Knights Templar. De Molay was burned at the stake in Paris in 1314 by the French King Philip IV, Le Bel, when the king succeeded in having the Templar order disbanded by Pope Clement V, and attempted to seize all of the Templar assets. However, this hypothesis is pure wishful thinking—there is no evidence whatsoever that de Molay was whipped with a flagellum, that a crown of thorns was placed on his head, or that his side was pierced after death. Furthermore, de Molay was burned at the stake, with fire

²⁸ Alan D. Whanger, MD, *A Letter to Hershel Shanks, Editor of BAR*, www.shroud.com/bar.htm

²⁹ Raymond N. Rogers, *Prominent Los Alamos Scientist Proves 1988 Carbon-14 Dating of the Shroud Used Invalid Rewoven Sample*, www.shroud.com/late05.htm#rogersc14, Raymond N. Rogers, *Studies on the Radiocarbon Sample from the Shroud of Turin*, [dx.doi.org/10.1016/j.tca.2004.09.029](https://doi.org/10.1016/j.tca.2004.09.029)

³⁰ John L. Brown, *Microscopical Investigation of Selected Raes Threads From the Shroud of Turin*, www.shroud.com/pdfs/brown1.pdf

³¹ Robert Bucklin, M.D., J.D., *An Autopsy on the Man of the Shroud*, www.shroud.com/bucklin.htm

³² Barrie M. Schwartz, *The Shroud of Turin*, www.shroud.com

consuming his body, and there is no indication of how an image could have been formed from his body on a linen Shroud.

The wounds seen in the Shroud image correspond perfectly with those of Christ recorded in the Gospel accounts: beating with fists and blow to the face with a club, flogging, “crown of thorns,” nailing in hands (Aramaic *yad*, including wrists and base of forearm) and feet, lance thrust to the side (the right side, according to tradition) after death, issue of “blood and water” from the side wound, legs unbroken, McNair (1978:23) contends that such an exact concordance could hardly be coincidental: “it seems to me otiose, if not ridiculous, to spend time arguing... about the identity of the man represented in the Turin Shroud. Whether genuine or fake, the representation is obviously Jesus Christ.”³³

Scientific scrutiny of the Shroud image began in 1900 at the Sorbonne. Under the direction of Yves Delage, professor of comparative anatomy, a study was undertaken of the physiology and pathology of the apparent body imprint and of the possible manner of its formation. The image was found to be anatomically flawless down to minor details: the characteristic features of rigor mortis, wounds, and blood flows provided conclusive evidence to the anatomists that the image was formed by direct or indirect contact with a corpse... On this point all medical opinion since the time of Delage has been unanimous.

Of greatest interest and importance are the wounds. As with the general anatomy of the image, the wounds, blood flows, and the stains themselves appear to forensic pathologists flawless and unfakeable. “Each of the different wounds acted in a characteristic fashion. Each bled in a manner which corresponded to the nature of the injury. The blood followed gravity in every instance” (Bucklin 1961:5). The bloodstains are perfect, bordered pictures of blood clots, with a concentration of red corpuscles around the edge of the clot and a tiny area of serum inside. Also discernible are a number of facial wounds, listed by Willis (cited in Wilson 1978:23) as swelling of both eyebrows, torn right eyelid, large swelling below right eye, swollen nose, bruise on right cheek, swelling in left cheek and left side of chin.

The body is peppered with marks of a severe flogging estimated at between 60 and 120 lashes of a whip with two or three studs at the thong end. Each contusion is about 3.7 cm long, and these are found on both sides of the body from the shoulders to the calves, with only the arms spared. Superimposed on the marks of flogging on the right shoulder and left scapular region are two broad excoriated areas, generally considered to have resulted from friction or pressure from a flat surface, as from carrying the crossbar or writhing on the cross. There are also contusions on both knees and cuts on the left kneecap, as from repeated falls.

The wounds of the crucifixion itself are seen in the blood flows from the wrists and feet. One of the most interesting features of the Shroud is that the nail wounds are in the wrists, not in the palm as

³³ William Meacham, *The Authentication of the Turin Shroud: An Issue in Archaeological Epistemology*, www.shroud.com/meacham2.htm

traditionally depicted in art. Experimenting with cadavers and amputated arms, Barbet (1953:102-20) demonstrated that nailing at the point indicated on the Shroud image, the so-called space of Destot between the bones of the wrist, allowed the body weight to be supported, whereas the palm would tear away from the nail under a fraction of the body weight. Sava (1957:440) holds that the wrist bones and tendons would be severely damaged by nailing and that the Shroud figure was nailed through the wrist end of the forearm, but most medical opinion concurs in siting the nailing at the wrist. Barbet also observed that the median nerve was invariably injured by the nail, causing the thumb to retract into the palm. Neither thumb is visible on the Shroud, their position in the palm presumably being retained by rigor mortis.

Between the fifth and sixth ribs on the right side is an oval puncture about 4.4 X 1.1 cm. Blood has flowed down from this wound and also onto the lower back, indicating a second outflow when the body was moved to a horizontal position. All authorities agree that this wound was inflicted after death, judging from the small quantity of blood issued, the separation of clot and serum, the lack of swelling, and the deeper color and more viscous consistency of the blood. Stains of a body fluid are intermingled with the blood, and numerous theories have been offered as to its origin: pericardial fluid (Judica, Barbet), fluid from the pleural sac (Moedder), or serous fluid from settled blood in the pleural cavity (Saval, Bucklin).

So convincing was the realism of these wounds and their association with the biblical accounts that Delage, an agnostic, declared them “a bundle of imposing probabilities” and he concluded that the Shroud figure was indeed Christ. His assistant, Vignon (1937), declared the Shroud's identification to be “as sure as a photograph or set of fingerprints.”³⁴

More recently, the conclusions of Barbet and Bucklin were reviewed and updated with new observations by Frederick T. Zugibe, M.D., Ph.D., the Senior Medical Examiner of Rockland County, NY, with over 35 years of experience dealing with corpses from New York City. He disagreed on some of the finer medical points and reached new conclusions regarding the Shroud man's cause of death based on extensive experiments, concluding that death was caused by traumatic shock rather than Barbet's claim of asphyxiation.

The large square iron nails driven through both hands into the cross would damage the sensory branches of the median nerve resulting in one of the most exquisite pains ever experienced by people and known medically as causalgia. The nails through the feet would also elicit a great deal of pain. Both of these would cause additional traumatic shock and hypovolemia. The hours on the cross, with pressure of the weight of the body on the nails through the hands and feet would cause episodes of excruciating agony every time the cruciarius moved. These episodes and the unrelenting pains of the chest wall from the scourging would greatly

³⁴ William Meacham, *The Authentication of the Turin Shroud: An Issue in Archaeological Epistemology*, www.shroud.com/meacham2.htm

worsen the state of traumatic shock and the excessive sweating induced by the ongoing trauma and by the hot sun, would cause an increasing degree of hypovolemic shock.³⁵

Regardless of these quibbles, Zugibe agreed with his predecessors that the image on the Shroud was an incredibly detailed depiction of an actual crucified body.

The expertise concerning blood flow patterns is in the area of forensic pathology. The forensic pathologist is frequently called in to court to provide expert testimony regarding blood flow patterns and wound characteristics and to render an opinion regarding the mechanism, manner and cause of death, concerning these circumstances. This applies to the Man of the Shroud who was apparently scourged, crowned with thorns, nailed through the hands and feet with large square nails and suspended by the hands for several hours.

Imprints depicting the various wounds that had been inflicted on the Man of the Shroud include numerous dumbbell-shaped scourge marks over the trunk, an exact pattern of rivulets of blood on the left arm, a single tortuous flow of blood on the forehead, a precise bifurcation pattern on the back of the hand and a small clump of blood on the heel. Studies of these patterns with ultraviolet light are even more vivid in terms of preciseness; the scourge marks show well defined borders and fine scratch-like markings appear to be mingled in-between.³⁶

The medical evidence stated above does not prove that the Shroud man was Jesus, but it is very strong evidence that the Shroud is the burial cloth of a real man who suffered in exactly the way that Jesus did in the Biblical accounts of the crucifixion. If the Shroud were not genuine, the above evidence would require that an artist duplicate all of the wounds in the lifelike manner in which they are shown on it, for both the dorsal and ventral sides of the body—an exceedingly difficult undertaking.³⁷

4. The blood on the Shroud is not actual blood

The STURP investigatory team of 1978 performed the most extensive series of scientific investigations that have ever been done on the Shroud. One of their consulting members was Walter McCrone, who was given a number of pieces of sticky tape that had been placed on the surface of the Shroud and then removed in order to analyze the surface material. Based on his analysis of the residue from the sticky tapes, he claimed that there is no blood whatsoever on the Shroud. Dr. McCrone's results are often quoted by skeptics, but his claim concerning the absence of blood has been thoroughly discredited by many other Shroud

³⁵ Frederick T. Zugibe, M.D., Ph.D., *Pierre Barbet Revisited*, www.shroud.com/zugibe.htm

³⁶ Frederick T. Zugibe, M.D., Ph.D., *The Man on the Shroud Was Washed*, www.shroud.com/zugibe2.htm

³⁷ Robert Bucklin, M.D., J.D., *The Legal and Medical Aspects of the Trial and Death of Christ*, www.shroud.com/bucklin2.htm

researchers.³⁸ He was the same researcher who claimed that the Shroud image was painted, as described below.

McCrone states that he used standard forensic tests to check for blood, and he found none. The standard tests he used are not adequate for testing this material. Later extensive chemical and other tests by blood experts on the same material show conclusively that it is human blood from a severely traumatized individual. McCrone, and those who would believe him, choose to ignore a veritable mountain of scientific evidence and data published in peer-reviewed major journals.³⁹

5. The Shroud was a Painting

As indicated in the previous paragraph, the STURP team of 1978 retained Dr. Walter McCrone as a consulting member to analyze the surface materials of the Shroud. In the course of his work, Dr. McCrone discovered that the sticky tape samples given to him contained paint pigments. He was not in Turin with the other team members and never saw or examined the Shroud directly, but based on his analysis of the sticky tape residue, he concluded that that the Shroud was a painting done sometime in the 1300s, and published his results before the official report of the team could be prepared.

According to Dr. Walter McCrone and his colleagues, the 3+ by 14+ foot cloth depicting Christ's crucified body is an inspired painting produced by a Medieval artist just before its first appearance in recorded history in 1356. The faint sepia image is made up of billions of submicron pigment particles (red ochre and vermilion) in a collagen tempera medium. Dr. McCrone determined this by polarized light microscopy in 1979... Forensic tests for blood were uniformly negative on fibers from the blood-image tapes. There is no blood in any image area, only red ochre and vermilion in a collagen tempera medium.

In 1980, using electron microscopy and x-ray diffraction, McCrone found red ochre (iron oxide, hematite) and vermilion (mercuric sulfide); their electron microprobe analyzer found iron, mercury, and sulfur on a dozen of the blood-image area samples. The results fully confirmed Dr. McCrone's results and further proved the image was painted twice-once with red ochre, followed by vermilion to enhance the blood-image areas. Conclusion: the "Shroud" is a beautiful painting created about 1355 for a new church in need of a pilgrim-attracting relic.⁴⁰

However, what McCrone failed to consider was the more than fifty documented occasions where artists through the centuries had apparently used the Shroud as a template in order to make painted copies of it. The copies were then laid on the Shroud to "sanctify" them and some of the pigment from the painted copies was

³⁸ David Ford, *The Shroud of Turin's 'Blood' Images: Blood, or Paint? A History of Science Inquiry*, www.shroud.com/pdfs/ford1.pdf

³⁹ Daniel Scavone, *Deconstructing the "Debunking of the Shroud"*, www.shroud.com/bar.htm

⁴⁰ Walter McCrone, *Conclusions on the Shroud of Turin*, www.mcri.org/Shroud.html

transferred to the surface of the cloth. The most recent of these was discovered in 1999 and included a signed and dated letter from the Archbishop of Turin, testifying to its authenticity.⁴¹ Furthermore, it has been conclusively shown that the actual image on the Shroud was not produced by paint or pigment.

Much publicity has been generated by the assertions of McCrone (1980), a former STURP consultant, that the image is a painting, judging from the microscopic identification of traces of iron oxide and a protein (i.e., possible pigment and binder) in image areas. The STURP analysis of the Shroud's surface yielded much particulate matter of possible artists' pigments such as alizarin, charcoal, and ultramarine, as well as iron, calcium, strontium (possibly from the soaking process for early linen), tiny bits of wire, insect remains, wax droplets, a thread of lady's panty hose, etc. (Wilson 1981). However, this matter was distributed randomly or inconsistently over the cloth and had no relationship to the image, which was found to be substanceless, according to the combined results of photomicroscopy, X-radiography, electron microscopy, chemical analyses, and mass spectrometry. McCrone's claims have been convincingly refuted in several STURP technical reports (Pellicori and Evans 1980:42; Pellicori 1980:1918; Heller and Adler 1981:91-94; Schwalbe and Rogers 1982:11-24). The results of previous work by the Italian commission also run totally counter to those claims (Filogamo and Zina 1976:35-37; Brandone and Borroni 1978:205-14; Frei 1982:5). Undaunted, McCrone... continues to stake his reputation on the interpretation of the Shroud image as a painting.⁴²

McCrone has publicly stated that he stakes his professional reputation on the Shroud being a fake. This position scarcely encourages objective research. His conclusions are largely based on his examination of material obtained from the Shroud on Mylar sticky tapes by the STURP group in 1978. There are, indeed, linen fibers with paint pigments on them on these tapes, but it has apparently eluded McCrone that these are fibers which translocated to the Shroud from the some fifty-five medieval painted "true copies" which were laid by the artist directly on top of the Shroud as a "brandum." These pigmented fibers have nothing to do with the images on the Shroud other than their proximity to some of the body images, which one would expect considering their origin.⁴³

Consequently, the Image properties outlined above make it impossible for the Shroud image to be a painting, especially one by a medieval artist.

6. The Shroud was a Photograph

Given the photographic nature of the Shroud image, the best possible method of producing a fake would seem to be photography, especially because the Shroud

⁴¹ Leo Bazant, *Report on the Czechia Shroud Copy*, www.shroud.com/bazant.htm

⁴² William Meacham, *The Authentication of the Turin Shroud: An Issue in Archaeological Epistemology*, www.shroud.com/meacham2.htm

⁴³ Daniel Scavone, *Deconstructing the "Debunking of the Shroud"*, www.shroud.com/bar.htm

images are actually negatives. In 1993, Dr. Nicholas Allen, professor of art at a university in South Africa, proposed a method of creating a negative image on linen via a photographic process using elements of technology and chemistry that were possibly available in medieval times. This method employed a photographic technique written about by Leonardo DaVinci called the *camera obscura*. Dr. Allen actually produced images similar to the Shroud of Turin in 1995 by hanging a sculpture of Christ in a room (i.e., in a *camera obscura*) that projected an image onto a piece of cloth soaked in silver sulphate. After the image had been properly exposed and the cloth washed with an ammonia solution to remove all of the silver compounds, an image was produced that is similar to the one on the Shroud of Turin.⁴⁴ However, there are a number of insurmountable problems with this hypothesis:

- a. Photography works on the basis of reflected light; a camera takes in light that is reflected from the subject being photographed, focuses it through a lens and then applies it to the film inside the camera. It is the contrast between the brighter and the darker shadowed areas on the subject that makes a photographic image visible. However, the “light source” for the image on the Shroud of Turin seems to be internal, coming from within the body that the Shroud covered, rather than from an external source. In other words, the image seems to be created by internally generated light and/or a chemical reaction rather than externally reflected light. The photographic process produces an image with strong “edges” as in a typical photograph if the lens is in focus. Despite being in focus, the Shroud image does not have any such sharp edges, and seems to “melt away” as the image is approached.
- b. The directionality of light in a photograph is critical, as it will create directional shadows, as is the case with the Shroud images created by Dr. Allen. However, the Shroud of Turin does not contain any such shadows. In order to create a purely frontal photographic image with minimal directional shadows, the artist would have had to have understood this potential image formation problem, and operated the *camera obscura* at only certain times of the year when the sun was low on the horizon and shone continuously on the image in a completely frontal manner.
- c. There are also problems with areas such as the feet becoming overexposed in a photograph, which is not a characteristic of the Shroud. In addition, there is the fact that the Shroud image contains darkened areas both above and below the hands, which would seem to be very hard if not impossible to generate photographically. Yet another problem is that there is no image in the bloodstained areas of the Shroud, and it is unclear how this aspect could have been photographically produced.

⁴⁴ Nicolas Allen, *Verification of the Nature and Causes for the Photo-Negative Images on the Shroud of Lirey-Chambéry-Turin*, www.petech.ac.za/shroud/nature.htm

- d. As mentioned above, the Shroud of Turin has three-dimensional aspects in the image that cannot be accurately duplicated via photography, because a photograph shows light reflected from the surface of a body rather than energy and/or chemical reactions created from within a body and applied to the cloth.⁴⁵
- e. The production of a photographic image via a *camera obscura* would require an unknown number of crucified cadavers, as they rot fairly quickly (refrigeration was not invented until the 1800s). It must certainly have taken a number of attempts to get an image in focus with the correct exposure and with the lifelike accuracy of the image on the Shroud of Turin. It is uncertain where such crucified cadavers could have been obtained. An alternative is that a super-accurate sculpture of a crucified Christ was carved and used for this, which included all of the whip marks, contusions, and lacerations as described above.
- f. Although Leonardo described a *camera obscura* in his notes, there is no mention of it being used as a photographic device. Rather, by projecting an image on a wall or a piece of canvas, Leonardo used it as an aid in visualizing scenes in order to paint them. Furthermore, there is no hint of him using or experimenting with any type of photographic process involving light-sensitive silver compounds; the invention of photography and film took place over three hundred years later. Dr. Allen has produced some evidence that the properties of silvering were known in medieval times, but there is no record of anyone employing them to produce a photograph until the 1800s. Just because the raw materials for these advanced technologies existed, does not mean that someone actually developed and employed them, particularly before human knowledge had advanced enough to make this type of work truly possible.

Leonardo or another artist would therefore have had to invent the concept of photography, use the correct silver compounds (Dr. Allen points out that only silver sulphate will really work), build and use a darkroom for preparing the cloth (the linen must be soaked in a solution of diluted silver sulphate and then air-dried in a light-proof environment prior to being exposed), and understand that the image could only be retained and set by washing the cloth with an ammonia solution. The last step of washing the Shroud to remove the silver sulphate is critical because there are no silver-related compounds on the Shroud of Turin. In other words, this work would have required several new inventions and developments in chemistry to be made before an image could have been successfully produced, and an unknown amount of trial and error. All of this was supposedly done with the technology available around 1500 that produced the highly accurate image

⁴⁵ Aldo Guerreschi, *The Turin Shroud: From the Photo to the Three-Dimensional*, www.shroud.com/pdfs/aldo1.pdf, and Aldo Guerreschi, *The Turin Shroud and Photo-Relief Technique*, www.shroud.com/pdfs/aldo2.pdf

that is present on the Shroud of Turin.

- g. Since there are no records of this type of artwork ever being produced, the artist would have had to destroy any notes he kept on this process, smash the sculpture of Christ, and never sell, use or claim this technology except to produce this one work of art. DaVinci died in 1519, so he certainly would have had the opportunity to employ this technology for other works of art if he were the one who had truly pioneered it.
- h. Dr. Allen has indicated that a photographic version of the Shroud would have involved the composite of at least three different exposures, with a different lens used for the head and face. How Leonardo or any other medieval/renaissance artist could have achieved these composite images and combined them on one piece of cloth with the technology available circa 1500 or earlier is completely unclear. Different sections of the cloth would have had to be soaked in silver sulphate solution, and the image produced in the correct place on the cloth.⁴⁶

Dr. Allen's work has been comprehensively critiqued,⁴⁷ and Dr. Allen himself has raised doubts about the possibility of Leonardo DaVinci using this method of producing a fake shroud.⁴⁸

7. The Shroud was a Bleaching

This image formation method proposes that the Shroud image was produced by taking a Shroud-sized piece of unbleached cloth and placing it under a large piece of glass, onto which was painted an image of a crucified man. After being exposed to sunlight for a period of time, an image similar to the Shroud is supposedly sun-bleached onto the cloth.⁴⁹ The painted picture on the glass acts as a mask, protecting some of the cloth from the natural bleaching action of the sun, and the resulting image is simply formed by unbleached, darker colored linen. No known samples of this method comparable to the Shroud of Turin have as yet been produced and made available to the public, but even if one were to be made, this proposed technique has several fatal flaws:

- a. This method requires a large flat piece of glass, at least 7' x 3.5'. Glass pieces of the necessary size and quality did not exist in the Middle Ages. The glass of that era could only be made in small sections, and contained many imperfections. Therefore, smaller glass pieces would have had to have been assembled into a larger whole, with the seams and imperfections in the glass

⁴⁶ For more information on the DaVinci theory, see Richard B. Sorensen, *Answering the Savoy/Leonardo DaVinci Hypothesis*, www.shroud.com/pdfs/sorensen.pdf

⁴⁷ Barrie M. Schwartz, *Is The Shroud of Turin a Medieval Photograph? A Critical Examination of the Theory*, www.shroud.com/pdfs/orvieto.pdf

⁴⁸ Nicolas Allen, *How Leonardo Did Not Fake the Shroud of Turin*, www.petech.ac.za/shroud/Leonard.htm

⁴⁹ Nathan Wilson, *Experiment: Turin Shroud An Easy Forgery*, dsc.discovery.com/news/briefs/20050228/shroud.html

being transferred to the image on the cloth.

- b. The chemistry of the Shroud image is completely different than an image produced by such a method, because it has been demonstrated that the Shroud image is deposited only on the surface of the fibers, whereas in this method, all of the unbleached fibers would simply be a darker color.⁵⁰
- c. The painting on glass would have had to been made by a medieval artist in a highly accurate manner that would meet the requirements outlined above in the body and image characteristic sections.
- d. This theory provides no explanation for the bloodstains on the Shroud, or for the 3D image property.

8. The Shroud was a Rubbing

In this proposed method, an initial drawing is made on paper using one of a variety of powdered pigments, such as iron oxide. The image is then transferred to the cloth either by hand rubbing or with a wooden burnishing instrument, and finally set with heat.

- a. This method again relies on an artistically created image, and all of the issues outlined above in the body and image characteristic sections have to be answered.⁵¹
- b. The Shroud image does not consist of iron oxide or other pigments.⁵²

9. The Shroud was a Scorching from a Hot Statue

This image formation method proposes that a statue of Christ was made, a linen cloth was laid over it, the statue was heated, and the image was scorched on to the cloth.

- a. A highly accurate negative-perspective statue of Christ would be necessary that took into account all of the problems outlined above in the body and image characteristic sections. The blood-stained areas which do not contain any image would have to have been excluded.
- b. The known chemistry and physics of the Shroud image demonstrates that it is impossible for it to have been produced by scorching.⁵³

10. The Shroud was a 3D Block Print

⁵⁰ Raymond N. Rogers and Anna Arnoldi, *An Amino-Carbonyl Reaction (Maillard Reaction) May Explain the Image Formation*, www.shroud.com/pdfs/rogers7.pdf

⁵¹ Isabel Piczek, *Alice in Wonderland and the Shroud of Turin*, www.shroud.com/piczek2.htm

⁵² Raymond N. Rogers, *Frequently Asked Questions*, www.shroud.com/pdfs/rogers5faqs.pdf

⁵³ Raymond N. Rogers, *Frequently Asked Questions*, www.shroud.com/pdfs/rogers5faqs.pdf, and Raymond N. Rogers, and Anna Arnoldi, *Scientific Method Applied To The Shroud Of Turin*, www.shroud.com/pdfs/rogers2.pdf

As with the scorching hypothesis, this image formation method proposes that a statue of Christ was made, covered with dye or ink, and a cloth was placed over it to obtain the image. This method is not seriously considered because of the manifold difficulties in producing an image like the Shroud with this method, as follows:

- a. It would be very hard to create a three dimensional block print that did not smear when the cloth was removed from the statue. Producing a negative image would also be very difficult.
- b. The chemistry of the Shroud image precludes dyes as the source of the image.⁵⁴

E. Unanswered Questions and Doubts

Despite the strong evidence for the veracity of the Shroud, there are a number of questions and doubts regarding it (in addition to the historical concerns mentioned above), for which no full answer has yet been provided:

1. The Shroud is one long piece of cloth (approximately 14' x 3'), which is at variance with the burial cloths typically used by first century Jews, and seemingly also in disagreement with some of the details in the Biblical accounts of Christ's crucifixion and resurrection.

The fact that the Shroud is not easily harmonized with the Gospel accounts has been taken as evidence both for and against authenticity. A number of biblical scholars (discussed in Bulst 1957 and O'Rahilly 1941) have rejected the Shroud because of a perceived conflict on two points: the washing of the body and the type of linen cloths used in wrapping it. Robinson (1978:69), on the other hand, suggests that "no forger starting, as he inevitably would, from the Gospel narratives, and especially that of the fourth, would have created the Shroud we have." The Shroud could of course be genuine and not necessarily agree in every detail with the biblical account: it could also have been forged by persons who were close to the early burial traditions and therefore based their work on a better understanding of the Johannine Gospel account than is possible today.

Greater difficulties are encountered in John's descriptions of the burial linens. The synoptic Gospels record that the body was wrapped or folded in a fine linen *sindon* or sheet. Although the traditional idea is that this sheet was wound around the body, there is no difficulty in reconciling it with the Shroud. John (20:5-8) describes the body as 'bound' with *othonia*, a word of uncertain meaning generally taken as 'cloth' or 'cloths.' In the empty tomb he relates seeing 'the *othonia* lying there, but the napkin (*soudarion*) which had been over the head not lying with the *othonia* but folded [or rolled up] in a place by itself.' To

⁵⁴ Raymond N. Rogers, *Frequently Asked Questions*, www.shroud.com/pdfs/rogers5faqs.pdf

elucidate this passage, almost as many theories as there are possibilities have been put forward. One which would exclude the Shroud is that the linen sheet was cut up into bands to wrap around the corpse, but most exegetes reject this notion. The fact that Luke describes the body as wrapped in a *sindon* and then relates that the *othonia* were seen in the empty tomb is taken by some as an equation of the two, by others as a distinction.

Most commentators identify the Shroud with the *sindon* and offer one of the following interpretations: (1) The *othonia* is the Shroud, the *soudarion* is a chin band tied around the head to hold up the lower jaw, and the hands and feet were bound with linen strips. In the account of Lazarus, a *soudarion* is mentioned ‘around his face,’ and his hands and feet are bound with *keiriai* (twisted rushes). Three-dimensional projections of the Shroud face have indicated a retraction of beard and hair where a chin band would have been tied. The Greek *soudarion* is clearly a kerchief or napkin. (2) The *soudarion* is the Shroud, and the *othonia* are bands used to tie up the body. In the vernacular Aramaic, *soudara* included larger cloths, and the phrases ‘over his head’ and ‘rolled up in a place by itself’ suggest an item more substantial than a mere kerchief.⁵⁵

There is another very old piece of bloodstained cloth which is alleged to have been the cloth used to cover the face of Christ after his crucifixion. It is known as the “Sudarium of Oviedo”; it was brought to Spain in the seventh century and has been kept in the Spanish town of Oviedo since the eighth century. The Sudarium was studied in 1999, and the team studying it concluded that the Sudarium and the Shroud both covered the same injured head.⁵⁶ The Sudarium may be the “napkin” or the cloth covering Christ’s head/face that was mentioned in the Gospel of John account (John 20:3-7) as well as being discussed in the above quote.

2. The Bible indicates that Joseph of Arimathea and Nicodemus buried the body of Jesus with a significant amount of myrrh and aloes, but neither of these substances could be detected on the Shroud, although at least one eyewitness historical account during the Constantinople period indicated that the cloth “smelled of myrrh.”⁵⁷ However, it has been alleged that the Shroud has at various times been washed and/or dipped in oil or other substances, which could possibly have washed out any myrrh or aloes residues.
3. Objections have been raised regarding the height of the Shroud man—between 5’11” and 6’1”—as most men of the time were much shorter. The Bible, as was typical of writings at that time, does not describe in detail the appearance of Jesus or any of the other people it portrays. Therefore, we are left with only a general

⁵⁵ William Meacham, *The Authentication of the Turin Shroud: An Issue in Archaeological Epistemology*, www.shroud.com/meacham2.htm

⁵⁶ *The Sudarium of Oviedo and what it Suggests about the Shroud of Turin*, www.shroudstory.com/faq-sudarium.htm

⁵⁷ Daniel Scavone, *Joseph of Arimathea, The Holy Grail, and the Edessa Icon*, www.shroud.it/scavone1.pdf

idea of what Jesus would have looked like based on what is generally known of his life and times.

4. Concern has been expressed about formation of the image in regard to the way that the body was wrapped in the cloth, for example, the lack of creases in various parts of the shroud image.⁵⁸ Also, there is no image on the sides of the cloth where it was presumably wrapped around the shoulders, arms, and legs of the dead body. This would seem to negate the possibility of the image being formed by some type of radiation from the corpse that could possibly have occurred during Christ's resurrection. Radiation would presumably have been emitted in all directions and would therefore have left images from the sides and shoulders, and not merely from the top and bottom of the body, as is the case in the Shroud image. Many members of the Shroud research team have concluded that radiation could not have generated the image.⁵⁹
5. Many have wondered how a piece of linen could have survived intact through so many centuries, and still bearing a visible image.

However, these questions are “arguments from silence” and therefore are not substantive enough to cause serious doubts about the Shroud's authenticity.

F. Conclusion

To date, the most scientifically reasonable theory on the mechanism that created the Shroud image is that it was made by a chemical reaction from an interaction between the cloth and the body fluids and/or vapors from the corpse.⁶⁰ Supporting this theory, the darkest portion of the Shroud image is the facial area around the nose, mouth, and beard, as more vapor would have been emitted from the corpse in the facial region.

As we have seen, no one has yet been able to *disprove* the Shroud of Turin, or to propose a method of image formation that could have been successfully used by a medieval artist to produce a forgery. By its very nature as a historical object, the Shroud's authenticity can never be definitively proved, but the evidence for its veracity is very strong and convincing.

⁵⁸ Mario Latendresse, *The Turin Shroud Was Not Flattened Before the Images Formed and no Major Image Distortions Necessarily Occur from a Real Body*, www.iro.umontreal.ca/~latendre/latImage.pdf

⁵⁹ Raymond Rogers, *Frequently Asked Questions*, www.shroud.com/pdfs/rogers5faqs.pdf, and *The Shroud of Turin: Radiation Effects, Aging & Image Formation*, www.shroud.com/pdfs/rogers8.pdf

⁶⁰ Raymond Rogers and Anna Arnoldi, *An Amino-Carbonyl Reaction (Maillard Reaction) May Explain the Image Formation*, www.shroud.com/pdfs/rogers7.pdf