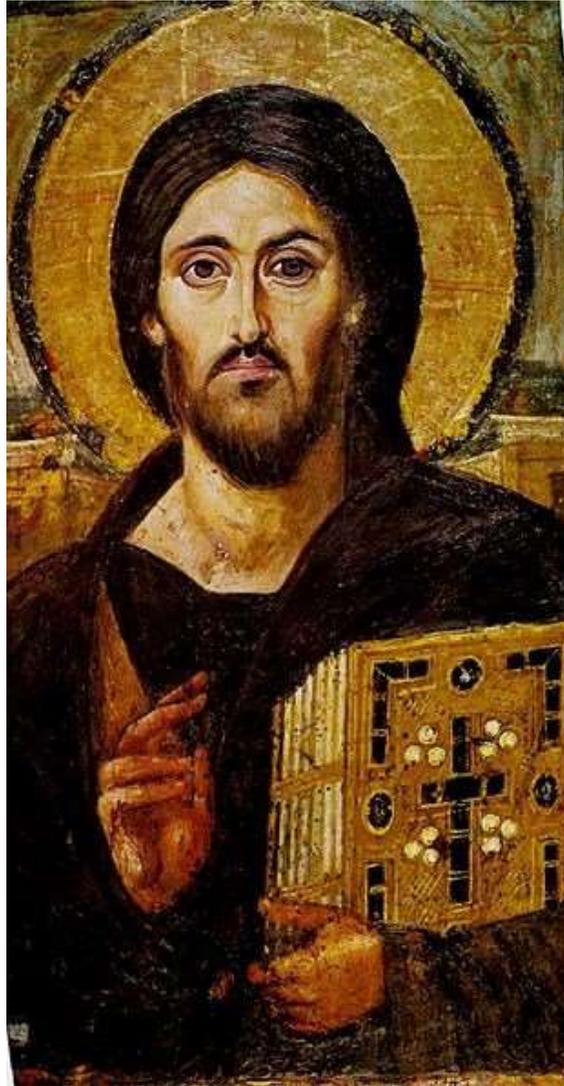


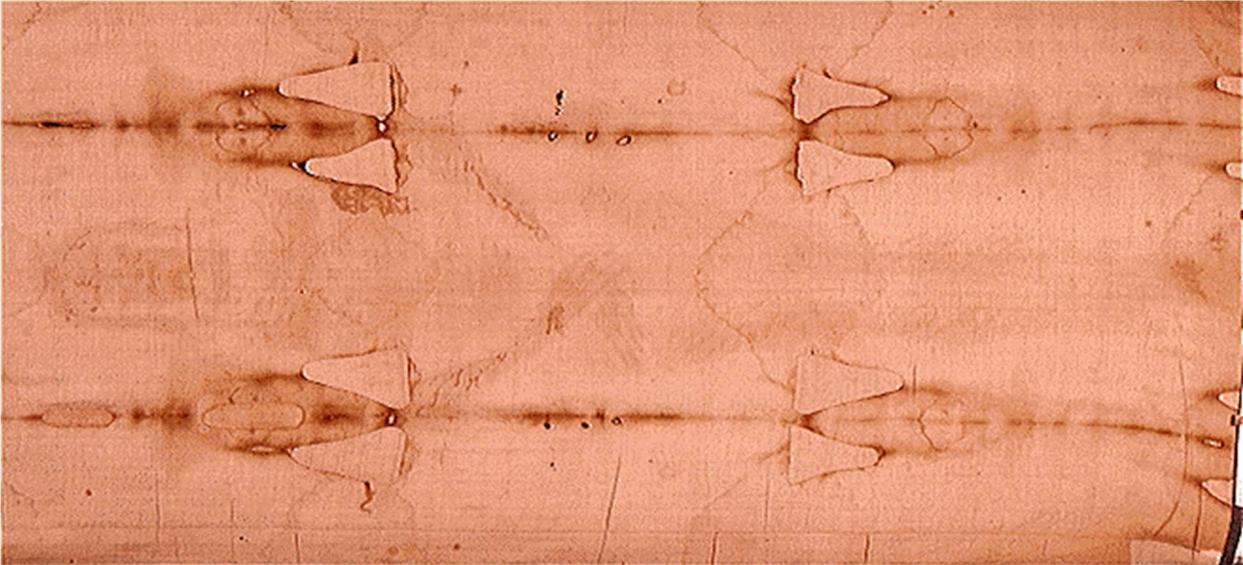
The Shroud of Turin:
Compelling Evidence for the
Resurrection of Jesus Christ



The Shroud of Turin

Genuine artifact or manufactured relic?

Imprimatur: Archbishop Cyril S. Bustros, Eparch of Newton, 25 January 2011.



No single artifact of the past has so exemplified the interface between science and religion as the Shroud of Turin. What are the facts and how do we separate the facts from both religious and scientific bias and agenda-based conclusions? First, we must separate the shroud from that which is responsible for bias, namely that it is the burial shroud of Jesus of Nazareth and investigate it instead as a putative artifact of a first century crucifixion and burial. The shroud has been subjected to numerous scientific tests over the years culminating in 1988 with a radiocarbon measurement and dating procedure. The testing of the shroud and the conclusions reached lie basically in two areas, the physical shroud itself and the very unique image on the shroud.

Image on the Shroud

The shadowy image on the shroud is, of course, its most unique and enigmatic feature. It displays the complete dorsal and frontal image of a severely abused and crucified individual of Semitic characteristics who was laid on the proximal portion of the cloth with the distal portion folded over the head and extended over the body thus creating, through some as yet unexplained chemical or physical process, two “head to head” images of the back and front. The ghostly, sepia colored image is nearly imperceptible close-up but discernable at a distance. It was not until the first photographs were taken of the shroud in 1898 by Turin Councilor Secondo Pia that the negative plates revealed the startling “positive” of the clear picture of the “man in the shroud.” The image is of a male, almost 6’ tall, bearded, severely abused and scourged with the distinctive “dumbbell” markings of a Roman flagrum. Bloodstains are evident from wounds in the wrists, feet, about the head and brow, and the left thoracic area with pooling under the small of the back and under the feet. The image of the “man in the shroud” also displays signs of beating about the face, swelling under the eye and shocks of his beard having been ripped from his face (a common form of abuse to Jews by Romans). The debate on the authenticity of the shroud focuses on whether this image

was transferred to the linen by some means from a real corpse or whether it was artficed by a clever forger.

Chief among the proponents of the image as a “painting” was W. C. McCrone, one of the most respected names in particle analysis. McCrone reliably detected iron-oxide particles throughout the shroud using only optical technique and attributed it to the base of artist’s paint. (McCrone, W. C., *The Microscope*, 29, 1981, p. 19-38; McCrone, W. C., Skirius, C., *The Microscope*, 28, 1980, pp 1-13.) Particular attention in this regard was given to the purported “bloodstains” of the image.

FACT: The shroud linen contains particles of iron-oxide.

The debate on the authenticity of the shroud became centered on whether the reliable presence of iron oxide was relevant to the shroud image and the “bloodstains” on the cloth and the precise nature and origin of the iron oxide. A part of the answer to this was provided by x-ray fluorescent analysis performed by STURP (Shroud of Turin Research Project) scientists R. A. Morris, L. A. Schwalbe and J. R. London which determined there was no relevance between concentrations of iron oxide particles and the varying densities of the image. (Morris, R. A., Schwalbe, L. A., London, R. J., *X-Ray Spectrometry*, Vol 9, no. 2, 1980, pp 40-47; Schwalbe, L. A., Rogers, R. N., *Analytica Chimica Acta* 135, 1982, pp 3-19)

FACT: Iron Oxide is not responsible for the image on the cloth.

These findings stimulated additional attention to the bloodstains on the cloth. Were these genuine bloodstains or were they “painted” with some form of iron-oxide containing red pigment? This issue was addressed by experts in blood analysis, Dr. John Heller of the New England Institute and Dr. Alan Adler of Western Connecticut State University. Drs. Heller and Adler went far beyond the mere optical examination of McCrone. Applying pleochroism, birefringence and chemical analysis, they determined that, unlike artist’s pigment which contains iron oxide contaminated with manganese, nickel and cobalt, the iron oxide on the shroud was relatively pure. They discovered, through research into the procedures of flax preparation and linen manufacture, that pure iron oxide is normal to the process of fermenting (retting) the flax in large outdoor vats of water.

FACT: The iron oxide, abundant on the linen of the shroud is not the remnant of artist’s pigment.

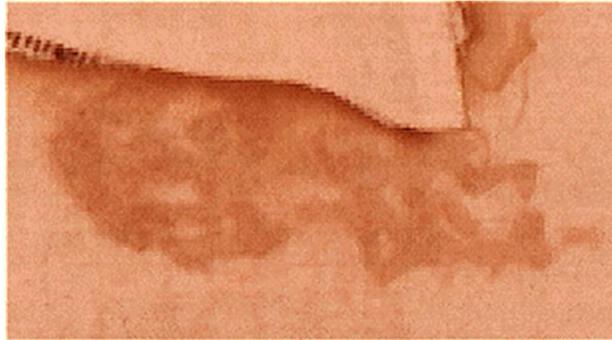
Dr. Adler then proceeded to apply microspectrophotometric analysis of a “blood particle” from one of the fibrils of the shroud and unmistakably identified hemoglobin in the acid methemoglobin form due to great age and denaturation. Further tests by Heller and Adler established, within scientific certainty, the presence of porphyrin, bilirubin, albumin and protein. In fact, when proteases were applied to the fibril containing the “blood,” the blood dissolved from the fibril leaving an imageless fibril. (Heller, J. H., Adler, A. D., *Applied Optics*, 19, 1980, pp 2742-4; Heller, J. H., and Adler, A. D., *Canadian Forensic Society Sci, Journal* 14, 1981, pp 81-103)

FACT: The bloodstains on the cloth are not artist’s pigment but are real blood.

FACT: The bloodstains were applied to the cloth prior to the formation of the image.

Working independently with a larger sample of blood containing fibrils, pathologist Pier Baima Bollone, using immunochemistry, confirms Heller and Adler's findings and identifies the blood of the AB blood group. (Baima Bollone, P., *La Sindone-Scienza e Fide* 1981, 169-179; Baima Bollone, P., Jorio, M., Massaro, A. L., *Sindon* 23, 5, 1981; Baima Bollone, Jorio, M., Massaro, A. L., *Sindon* 24, 31, 1982, pp 5-9; Baima Bollone, P., Gaglio, A. *Sindon* 26, 33, 1984, pp 9-13; Baima Bollone, P., Massaro, A. L. *Shroud Spectrum* 6, 1983, pp 3-6.)

(c)1978 Barrie M. Schwartz Collection, STERA, Inc.



It is significant that analysis of the blood of the cloth demonstrated high levels of bilirubin consistent with the severe concussive beating suggested by the image of the “man of the shroud.”

The 1988 Radiocarbon Dating of the Shroud

Radiocarbon dating is the use of accelerator mass spectrometry (AMS) to measure the amount of C14, a radioactive isotope of carbon. Plants take up carbon dioxide from the atmosphere as part of the process of photosynthesis and incorporate the carbon in the plant tissues. Animals absorb C14 into their tissues by eating plants. When the plant dies, no further C14 is absorbed and the C14 that accumulated in life begins to decay at a known rate. The half life of C14 is calculated at 5,730 years. Measurement of the C14 present in the remains of the plant or animal is a method of determining when the plant or animal died. The procedure is valuable for dating organic material later than 50,000 years before the present time. When first used, the procedure required larger samples of the test material; consequently the custodians of the Shroud of Turin were unwilling to permit the destruction of large portions of the shroud. The advances in the procedure have gradually decreased the amount of sample required and permission was finally obtained to test 12 small samples of the non-image bearing portion of the shroud linen. Linen is made from flax; therefore an assessment could be made on when the linen was manufactured. Samples of the shroud were excised and given to three different radiocarbon dating laboratories in Zurich, Oxford and Arizona. The results of the tests were published in the prestigious scientific journal *Nature*, 1988, titled “Radiocarbon Dating of the Shroud of Turin.” The following results were published on the samples tested. The figures are uncalibrated “before present,” i.e. 1950 CE. (P. E. Damon, et al., *Radiocarbon Dating of the Shroud of Turin*, *Nature* 337:6208, 16 February 1989, pp 611-615)

Sample dates from Arizona:

591 +/- 30 yrs

690 +/- 35 yrs

606 +/- 41 yrs

701 +/- 33 yrs

Sample dates from Oxford:

795 +/- 65 yrs

730 +/- 45 yrs

745 +/- 55 yrs

Sample dates from Zurich:

733 +/- 61 yrs

722 +/- 56 yrs

635 +/- 57 yrs

639 +/- 45 yrs

679 +/- 51 yrs

The linen of the shroud was manufactured, according to these results, **sometime between 1260 CE and 1390 CE** with the mean value placing the manufacture of the linen in the 14th century! The results were startling and fueled the opinion that the shroud is a forgery manufactured by a clever medieval artist. Are these results conclusive? A final conclusion on the authenticity of the shroud as an artifact of the first century should be based on a totality of the scientific evidence rather than on one procedure alone. That's just good science, yet the results of this one procedure is totally oppositional to the many other procedures conducted and the use of radiocarbon dating of textiles has been shown to be problematic in the past. (ACS, Advances in Chemistry #205, Archaeological Chemistry III, American Chemical Society, 1984, Radiocarbon Dating by Particle Accelerator, an Archaeological Perspective). Having said this, let me make it clear that this article is not an indictment of AMS measurement which is an extremely valuable tool for archaeology. Like any new discipline, however, there are still many things to learn about extrinsic factors that may alter accurate measurement. The science of dendrochronology has been invaluable in "calibrating" AMS results. There is still much to learn about natural processes that may incorporate extrinsic carbon into testable substrates.

The "margin of error" claimed by radiocarbonists (within 95% confidence limits) is based strictly on hypothetical statistics. This is reflected in variable results by different testing laboratories on samples of known date. Some examples have been:

Organic materials involved in the Akrotiri volcanic eruption has produced results ranging from 1100 +/- 190 yrs to 2590 +/- 80 yrs, a difference of 1400 years.

The “Lindow Man” body from a peat bog in Cheshire dated conventionally to 300 BCE produced results of 5th century CE (Harwell) to the 1st century CE (Oxford).

Highlighting the problematic results of radiocarbon dating of textiles is the dating of mummy 1770 in the British Museum where the bones of the mummy dated 800 to 1,000 years *earlier* than the textile in which the mummy was originally wrapped.

Three areas of continuing research may explain how the radiocarbon dating of the shroud linen may have been affected by factors other than the true age of the artifact.

On December 4, 1532 the chapel at Chambéry, France, where the shroud was housed, caught fire which raged around the silver reliquary where the shroud was kept. The heat was so intense that some of the silver melted and dripped onto the folded shroud. The shroud was rescued from the fire and doused with water but the burn holes are still visible.

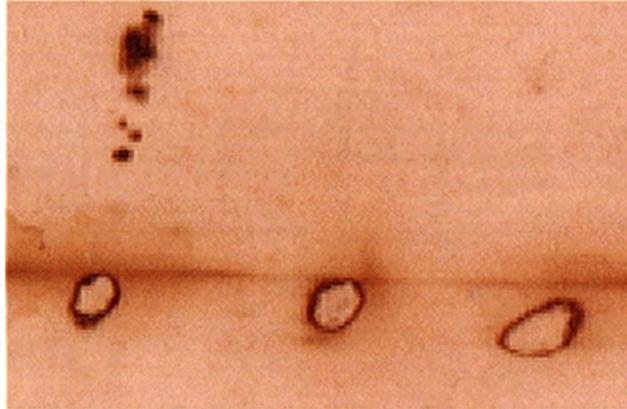
FACT: The shroud was subjected to intense heat at low oxygen in 1532.

Is there other evidence for the shroud being older than the radiocarbonists dating of the 14th century?

It is very suggestive that the face of the “man of the shroud” and its unique features has been depicted on iconography dating as early as the 6th century CE. Superimposition of the shroud face with the 6th century icon from St. Catherine’s monastery in the Sinai shows 170 points of congruity (Whanger, A. Applied Optics 24, no. 16, 1985, pp 766-772) as does the shroud face with the gold solidus of Justinian II (692 CE). Although this is very suggestive, one could pose that much of the iconography of the Byzantine period had some, now unknown, model and if the shroud was an artifice of 14th century Europe, an icon could have been used as a model. This would be a valid scientific counter-point. What would be required would be a depiction of what would be unmistakably the shroud in a document or icon that pre-dates the 14th century date offered by the radiocarbon results. Such a representation would have to feature some unique characteristic of the shroud. Such a representation does indeed exist.

Sometime in the distant past, holes were burned in the folded shroud. When folded, the four burn holes are arranged in an “L” shaped pattern. The unfolded shroud displays four sets of these four burn holes symmetrically on both the dorsal and frontal halves of the shroud. These burn holes are unique to the Shroud of Turin. In the Byzantine Christian era, the “gamma” and notched bands of Jewish talitot were used as decorations on tunics and altar cloths. The Christians who adopted these patterns apparently were unaware that the band and the gamma were used on tunics of men (band) and women (gamma) respectively. (See Yigael Yadin, Bar Kochba, 1971, Random House, Chapter 7, “The Wardrobe,” pp. 66-86.) During the Byzantine period, around the 5th and 6th centuries, just at the time the “Image of Edessa” was rediscovered in the city wall, the “gamma” marking was used on altar cloths which were called “Gammadia.”

(c) 1978 Barrie M. Schwartz Collection, STERA, Inc



Burn holes in the Shroud

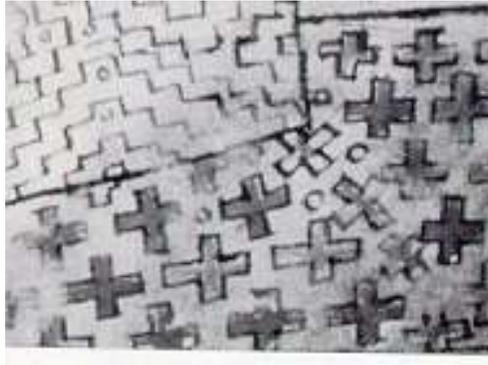
An illustration of the entombed and enshrouded Jesus of Nazareth is found in a prayer book from Budapest known as the “Pray Manuscript.” The illustration not only depicts the unique “L” pattern of burn holes but also the unique weave pattern of the shroud. There can be no mistake that the Pray Manuscript of 1192 was modeled on the Shroud of Turin.

(c) National Szechenyi Library, Budapest, Hungary



1192 Pray Manuscript showing burn holes

(c) National Szechenyi Library, Budapest, Hungary



Close up of burn holes depicted on Pray manuscript matching exactly those on shroud.

Conclusion. The Pray Manuscript of 1192 illustrates what can only be the Shroud of Turin, predating the earliest possible date of manufacture calculated by the AMS testing.

All of what I have explained above can be found in the voluminous scientific and popular literature on the shroud of Turin. At this point, I would like to offer a different paradigm for assessing the accuracy of the 14th century date and the resulting claim that the shroud is the work of a 14th century forger. Again, this article is not addressing the issue of whether or not the Shroud of Turin was the burial cloth of Jesus of Nazareth and its value as a “relic” of Christianity. It addresses only whether the shroud is a genuine archaeological artifact of a 1st century crucifixion. This paradigm assumes that the radiocarbonists’ claim that the Shroud of Turin is a 14th century forgery is correct. It is based on what that conclusion tells us about the forger. It tells us that:

- 1. The forger first painted the bloodstains before he painted the image.**
- 2. The forger integrated forensic qualities to his image that would only be known 20th century science.**
- 3. The forger duplicated blood flow patterns in perfect forensic agreement to blood flow from the wrists at 65° from vertical to suggest the exact crucifixion position of the arms.**
- 4. The forger “painted” the blood flows with genuine group AB blood that he had “spiked” with excessive amounts of bilirubin since the forger knew that severe concussive scourging with a Roman flagrum would cause erythrocyte hemolysis and jaundice.**
- 5. The forger “plotted” the scourge marks on the body of the “man in the shroud” to be consistent under forensic examination with two scourgers of varying height.**

6. The forger also duplicated abrasion and compression marks on the scourge wounds of the shoulders to suggest to 20th century forensic examiners that the “man in the shroud” had carried a heavy weight following the scourging.
7. The forger, against all convention of medieval artistry, painted the body he was “hoaxing” as Jesus of Nazareth, nude to conform to genuine Roman crucifixions.
8. The forger, as the forensic genius he was, illustrated the nails of crucifixion accurately through the wrists rather than the hands as in all other conventional medieval representations. He also took into account that the thumbs of a crucified victim would rotate inward as a result of median nerve damage as the nails passed through the spaces of Destot.
9. The forger was clever enough to “salt” the linen with the pollens of plants indigenous only to the environs of Jerusalem in anticipation of 20th century palynological analysis.
10. The forger was an artist who surpassed the talents of all known artists to the present day, being able to “paint” an anatomically and photographically perfect human image in a photographic negative manner, centuries before photography, and be able to do so without being able to check his work, close up, as he progressed.
11. The forger was able to paint this image with some unknown medium using an unknown technique, 30-40 feet away in order to discern the shadowy image as he continued.
12. The forger was clever enough to depict an adult with an unplaited pony-tail, sidelocks and a beard style consistent with a Jewish male of the 1st century.
13. The forger thought of such minute details as incorporating dirt from the bare feet of the “man in the shroud” consistent with the calcium carbonate soil of the environs of Jerusalem.
14. This forger was such an expert in 20th century biochemistry, medicine, forensic pathology and anatomy, botany, photography and 3-D computer analysis that he has foiled all the efforts of modern science. His unknown and historically

unduplicated artistic technique surpasses all great historical artists, making the pale efforts of DaVinci, Michaelangelo, Raphael and Botticelli appear as infantile scribblings.

15. The forger somehow encoded three dimensional information into the image, without having any means to test this for accuracy, since the VP8 analyzer that can detect this 3D information – was not invented until the 1970's.¹¹

If the Shroud of Turin is a forgery of the 14th century, as the radiocarbonists claim, and not a genuine artifact of the 1st century, all of these qualities of the purported medieval “forger” must be accepted. If the Shroud was “forged” it would have to have been painted.

It is an irrefutable fact that there is NO paint or pigment on the Shroud of Turin leaving the only explanation of the technique of the forger to have used “photography” to manufacture the relic in the THIRTEENTH CENTURY!! Some authors have gone so far as to suggest exactly that. This is patently absurd!

SCIENTIFIC CONCLUSION

The Shroud of Turin is a genuine artifact of a first century Roman crucifixion of an adult Jewish male. The radiocarbon dating placing the manufacture of the linen in the 14th century was flawed by extrinsic C14 accumulated over centuries of fungal growth, candle smoke and the intense heat of the fire of 1532. There is NO paint on the linen of the shroud and it is not the artifice of a forger.

FURTHER REFLECTIONS

If you have read this far, good reader, it is obvious that you are a real Truth-seeker. So let us together evaluate the claim that the Shroud is the burial sheet of Jesus Christ and that it testifies to His Resurrection from the dead.

We have demonstrated that the shroud is best explained as the burial sheet of a first-century Jew who was beaten, abused, and crucified somewhere in the Middle East, and whose image was mysteriously imprinted on the shroud. We have seen that the image of the Face of the man of the Shroud was reverently preserved by the Christian community at least as far back as the middle of the first millennium, and that the tradition of venerating the Shroud itself in the Orthodox and Eastern Catholic Churches also goes back to the first millennium.

It is a well-documented historical fact that the Jewish people in early first-century Palestine were looking forward to the coming of a Messiah, or Savior, who had been predicted in their Holy Scriptures. This Messiah had been promised to the world at the beginning of human history, when

the first human beings disobeyed God and destroyed the original harmony of the first-created world. The Messiah was to take upon Himself the guilt and punishment for the sins of the whole world and to restore the universe to its original harmony. According to the Targums, or commentaries, on the Old Testament, in use in the first century, quite a few details were known about the Messiah:

He would be a descendant of King David.

He would be of the House of Judah.

He would be born in Bethlehem.

He would be born of a virgin.

He would perform miracles.

He would suffer for the sins of His people.

His Body would be beaten and pierced; his beard plucked; His executioners would gamble for His clothes.

He would be buried in an unused tomb.

He would not undergo corruption.

Jesus clearly identified Himself as the promised Messiah. He performed extraordinary miracles before many witnesses, including raising the dead, healing lepers, and giving sight to the blind. Jesus told His disciples that He would suffer crucifixion and rise again from the dead on the third day. Thus, Jesus staked all of His credibility upon this prediction—unique in human history—that He would suffer, die and rise again from the dead by His own divine power.

The Gospels in the Christian Bible testify to the fact that Jesus Christ was crucified and buried in a tomb, guarded by Roman soldiers. On Easter morning, the Apostles found the tomb empty, saw the Shroud folded neatly next to where Jesus' Body had been, and "believed." The Bible also testifies to the fact that the Resurrected Jesus appeared to His Apostles and disciples many times during the 40 days after His Resurrection, to more than 500 people at once on one occasion.

History records that all but one of the Apostles died for their faith in the Resurrection of Jesus and that within three hundred years the Gospel of Jesus had been preached and accepted by millions of people throughout the Roman Empire and beyond. Jesus' commandment to "love others as I have loved you," to obey the Apostles and St. Peter and their successors, and to share His teaching with the whole world—all of these commands derived their credibility from the fact of His Resurrection.

How, then, does the Shroud fit in?

According to Russian scientist Alexander Belyakov:

[D]uring the resurrection of Jesus Christ his body was surrounded by a light-like energy. An intensity of this luminescence decreases with the distance from the body. Probably, this luminescence was similar to that “fire”, by means of which the power of God was usually appeared (we read about it in the Old Testament). When God appeared to Moses on Sinai mountain, Moses saw burning but the fire did not damage the bush. When Elijah was taken to havens, Elisha saw something like a fiery chariot, picking Elijah up and carrying him away. It should be noted, that the resurrection of Jesus Christ was not like other known cases of resurrections of people, described in Old and New Testaments. More likely this Resurrection was similar to that described by the apostle Paul: “it is sown a natural body; it is raised a spiritual body.” Maybe this fire was a direct action of God, creating something in our world. In front of God anything “melteth as wax before the fire,” but this fire does not expand or flow arbitrarily, and does not obey the laws of physics . . . Contact of this fire with the Shroud initiated chemical changes of the Shroud fabric and its opacity, similar to that which can take place from action of a strong radiation. The unique difference with external, traditional physical standpoint was that the radiation does not propagate according to known physical equations of physical light. However, it surrounds a body, reproducing its shape, and the intensity of this radiation (“firing body”) decreases versus the distance from the surface of the natural body. Therefore the Shroud got more opaque in the regions which were closer to the body.^[2]

We have seen that all of the scientific evidence from the Shroud is consistent with the hypothesis that it is the burial sheet of Jesus Christ. Moreover, we have seen that the image on the Shroud is consistent with a burst of radiation of an unknown type, such as must have occurred when Jesus resurrected His Body on Easter morning.

We have seen that if a medieval forger was responsible for producing the image on the Shroud, he would have had to know about scientific and technological developments that did not take place until the nineteenth and twentieth centuries!

Thus, the only logical explanation for the Shroud is that an all-knowing God, anticipating the skepticism and unbelief of our age, imprinted His own image upon it out of love for you and me. “Why out of love for *me*?” you ask.

The Shroud of Turin is God’s gift to a skeptical world, a powerful sign of His love for each and every human being. As you look into the eyes of the man of the Shroud on the cover of this booklet, allow yourself to hear Him saying these words to you:

My child, every human being longs for love, life, and meaning—and dreads death, hatred, and meaninglessness. I created this world in wisdom, beauty and goodness for mankind, but sin and selfishness brought evil, falsehood, and ugliness into the world I made for you. But I did not leave you orphans, and I promised, at the proper time, to assume a human nature like yours, to take all of your sins upon Myself, and to show you by My example, how to be holy as God Himself is holy. In the fullness of time, I became man in the womb of My Virgin Mother, Mary, and I fulfilled all that I had promised through the holy prophets.

Throughout My life on earth, I allowed Myself to suffer the pain, the shame, and the guilt for all of your sins, and for the sins of the whole world. At the end of My life, I fulfilled the words of the Prophet Isaiah and of King David, when I allowed Myself to be abandoned, condemned, beaten, spat upon, and crucified for your sins. And I did all of this so that you would know how much you are loved by God, and so that you would repent of your sins, ask forgiveness, and receive the Gift of salvation and eternal life from Me.

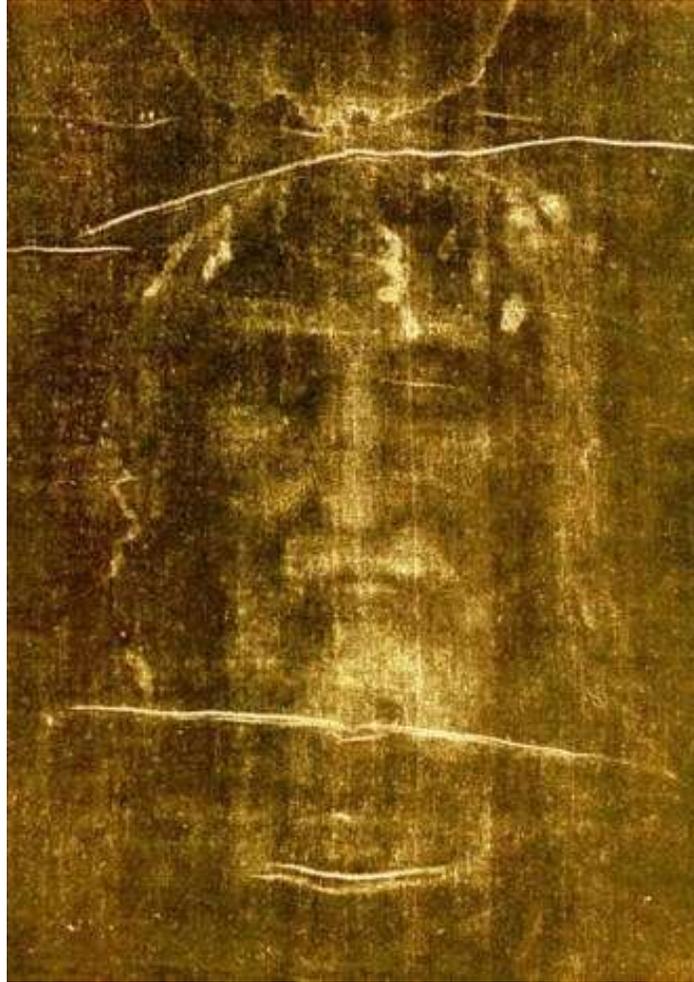
I foresaw that a time would come when men would become proud of their knowledge and technological achievements, and would try to explain life, master the world and find happiness without Me. And, knowing this, I left My image upon My Burial Sheet—a physical record of the sufferings that I endured for your sake, and a mysterious memorial of My glorious Resurrection.

I foresaw that your desire to know the Truth would lead you to reflect upon the meaning of My Shroud. And now, as I reveal this meaning to you, I invite you to repent of your sins, and to receive the forgiveness and eternal life that only I can give.

* * * * *

If you would like to contact a member of the Church that Jesus Christ founded two thousand years ago, please contact us at Melkite Greek Catholic Chapel of the Holy Innocents and the Holy Family in Exile, 1516 Northside Professional Building, Front Royal, VA 22630 or email us at howen@shentel.net and we will help you to find a church community in your area.

The first part of this article was published in 3 parts in *The Glyph*, the journal of The Archaeological Institute of America, San Diego, Vol 1, No. 10 (Sept 1997); No. 11 (Dec 1977); No. 12 (March 1998). The second part was written by an anonymous author.



**“Come to Me, all you who are weary and heavy laden, and I will give you rest”
(Matthew 11:28).**

^[1] The editor of this pamphlet is indebted to Shroud researcher Francis de Stefano for this information.

^[2] Alexander Belyakov, “Prospects of Research of the Turin Shroud in Russia,” Moscow Center of Shroud Study and the Museum of the Shroud, Sretenskii Monastery of Moscow <http://www.shroud.com/belyakov.htm>