

# Facts on The Shroud of Turin

## What is the Shroud?

The Shroud of Turin is a long linen cloth made of out flax and measures 14 feet long and 3.5 feet wide. It bears the faint image of a bearded, crucified man with bloodstains that match the wounds of crucifixion suffered by Jesus of Nazareth as recorded in all four gospel narratives. It has been in Turin, Italy since 1578, over 400 years. Prior to that it was in France for another 200 years beginning in 1356.

It has been preserved and revered for centuries as the actual burial shroud that wrapped Jesus as recorded in the bible. It was owned from 1450 to 1982 by the royal Savoy family until the former King of Italy, Humberto II passed away and willed it to the Catholic Church.

The Shroud has been displayed for numerous public exhibitions over the past 650 years.

## The History

The history prior to its arrival in France is not continuous and therefore critics have alleged it is the work of a medieval artist. However the discovery of a key document in 1993 (Hungarian Pray Manuscript dated from 1192) confirms that the Shroud was in Constantinople and was stolen by Crusaders during the 4th Crusade. This bridges the gap between 1204 and 1356 when the Shroud's whereabouts was in question. Some say it was in possession of the Knights Templar who participated in the 4th Crusade and were said to venerate a mysterious image.

This finding is monumental because it validates a historical trail to at least to the year 544 when the "Image Not Made By Hands" was discovered in Edessa (southern Turkey) and became the genesis for all Byzantine and Orthodox icon images of Christ that followed. Many scholars now believe the Shroud and the Edessa Image are one and the same.

Two coins were minted in 692 under the reign of Emperor Justinian II. They were the first coins ever minted with an image of Christ and appear to be based on the Shroud image as indicated by 180 matching points of congruence between the Shroud image and the coin image.

In 944 the cloth was taken from Edessa to Constantinople. The sermon delivered by Gregory the archdeacon of the Hagia Sophia clearly describes a full body image on the linen.

In the 11th century, Greek chronicler John of Skylitzes painted a picture of the same event as part of an illustrated manuscript. It clearly shows the General of the Army presenting a long linen cloth with an image on it to Emperor Romanus I.

Following the 4th Crusade when troops from Venice and France looted and burned the city, a letter of protest was written to Pope Innocent III. The letter documents this horrific event and what was stolen including, "Most sacred of all, the linen in which our Lord Jesus Christ was wrapped after his death and before his resurrection". These and other historical clues provide a history stretching nearly 1500 years.

There is also the Legend of King Abgar that may stretch the history all the way back to First Century. It is a story of how a cloth with an image on it was sent to Edessa from Israel at the time of Christ. Jude Thaddeus, one of the 70 Apostles was said to have taken it to him after Abgar's request for Jesus himself to come. Abgar was dying of leprosy and upon beholding a mysterious image he was healed, became a Christian and commanded that all pagan idols be burned.

## The Science

**1898:** The Shroud was photographed for the first time. These first pictures led to the discovery that the image on the cloth is actually a negative. The image becomes positive in a photographic negative. This discovery startled the scientific community.

**1931:** Guiseppe Enrie photographed the Shroud again with more advanced film technology confirming that the Shroud is indeed a negative image. Copies of Enrie's photos were circulated throughout the world prompting more scientific inquiry and interest.

**1950:** Dr. Pierre Barbet, a prominent French Surgeon, published *A Doctor at Calvary* documenting 15 years of medical research on the Shroud image. He described the physiology and pathology of the man on the Shroud as "anatomically perfect".

**1973:** Max Frei, a noted Swiss criminologist, was given permission to take dust samples from the Shroud that contained much pollen. He discovered 22 pollen species from plants that are unique to areas around Constantinople and Edessa, and 7 pollen species from plants common only in Israel. The pollen trail appears to corroborate the historical trail.

**1975:** Air Force scientists John Jackson and Eric Jumper, using a VP-8 Image Analyzer designed for the space program, discovered the Shroud image contained encoded 3-D data not found in ordinary reflected light photographs. This discovery indicated that the cloth must have wrapped a real human figure at the time the image was formed.

**1978:** The Shroud was on public exhibit for the first time since 1933 and was displayed for six weeks. At the close of the exhibition, 24 scientists comprising the Shroud of Turin Research Project (STURP) analyzed the Shroud for five continuous days (122 hours) working in shifts 24/7.

**1980:** National Geographic magazine published a landmark article on the Shroud further propelling the cloth into the science limelight calling it "One of the most perplexing enigmas of modern times".

This same year, microscopist Walter McCrone who was not part of the Shroud Project was given several fibers to analyze. After finding iron oxide particles and a single particle of vermilion paint, he broke ranks with the Shroud scientists who had agreed to make all findings public the following year. McCrone proposed that the Shroud was a painting of red ochre paint created from iron oxide particles suspended in a thin binder solution. However McCrone's findings in no way agreed with any of the highly sophisticated tests conducted by two dozen other scientists. His claims have all been dismissed. It turns out the iron oxide is a natural result of soaking the linen for days (retting) where iron ions from the water attach to the fibers and oxidize. The particles are randomly distributed over the entire cloth.

**1981:** After three years analyzing the data The Shroud of Turn Research Project (STURP) made their findings public at an international conference in New London, CT. All the scientists agreed upon the following statement: "We can conclude for now that the Shroud image is that of a real human form of a scourged, crucified man. It is not the product of an artist. The blood stains are composed of hemoglobin and give a positive test for serum albumin."

**1988:** The Shroud was carbon dated by three laboratories in Oxford, Zurich and Arizona. They indicated a date range from between 1260

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to 1390 indicating the cloth to be only about 700 years old. This earth shattering news seemed to contradict the conclusions of STURP that gave support to the Shroud's possible authenticity.

**1997:** Avinoam Danin, prominent Israeli Botanist and a professor at Hebrew University confirmed the presence of flower images on the Shroud. He verified 28 different pollen species and/or plant images. Many are from plants that grow only around Jerusalem.

**2002:** The Shroud was restored to remove charred debris from the fire of 1532 to aid in the cloth's preservation. All the burns and patches from the 1532 fire were removed. A new backing cloth was attached to it as well.

**2004:** Textile expert Mechthild Flury-Lemberg, revealed that the stitching of a seam on the Shroud that runs the entire length known as the side strip is typical of Jewish burial shrouds found in Masada, Israel.

**2004:** Chemical research on image fibers offers clues as to how the image was formed. The entire cloth is covered with a razor thin layer of carbohydrates that adhered to the linen after being soaked in a soapweed detergent as part of an ancient manufacturing process. Something has interacted with this carbo-layer resulting in discoloration of the cloth near or in direct contact with the body. Is it a "maillard reaction" from amine gases emanating from a decomposing body? This alone is not sufficient to explain the photo-like quality of the image. There are no stains of decomposition on the cloth. More is involved but not understood.

**2005:** Thermal Chemist, Ray Rogers, followed up on new spectroscopic data showing the material of the corner cut for carbon dating may be different from the rest of the Shroud. He obtained thread samples from the C-14 corner and thread samples from the interior of the Shroud. Additional micro-chemical and spectroscopic tests showed the samples were not the same. Results published in a peer-reviewed journal confirmed initial concerns. The sample cut for C-14 dating is from a medieval reweaving and not part of the original shroud.

"The radiocarbon sample was not part of the original cloth of the Shroud of Turin. The radiocarbon date was thus not valid for determining the true age of the shroud." Rogers also determined the evidence of a madder root dye used to blend in the color of newer threads with the more yellowed threads of the original cloth. He also found cotton and starch in the C-14 sample but not from the main body of the Shroud. Starch was used to stiffen the cotton in order to make the repair.

The carbon dating tests of 1988 are now considered by many to be a complete debacle. The carbon labs violated the sampling protocol established for the tests in 1985. Three different samples were to be cut; instead only one sample was used. Ignoring caution from archaeologists, they cut the sample from the most handled area of the cloth, the outside corner edge exactly where it had been grabbed and held by Church authorities for numerous public exhibitions. It was an area that had the most potential for contamination, damage and repair.

## Summary of Key Facts

### Tests performed by STURP:

- Particle analysis
- Chemical analysis
- Blood analysis
- Photo microscopy
- Spectroscopy
- X-ray radiography
- Infra-red thermography
- X-ray fluorescence spectrometry
- Photo scans from infrared to ultra-violet. And more

### Results:

- No inorganic pigments present
- No substances manually applied to cloth
- No artistic substances are on the cloth
- No collagen binder as would be used with paint
- Blood tests positive for heme, bile, serum albumin and other blood components.
- The blood is AB positive with human DNA.

*"The blood marks seen on the shroud are consistent with a contact transfer to the cloth of blood clot exudates that would have resulted from major wounds inflicted on a man who died in the position of crucifixion."*  
— Dr. Al Adler

### Image Characteristics:

- Purely superficial — penetrates only top 2 micro-fibers. Does not penetrate the cloth.
- Yellowing of image is uniform in intensity
- No capillary action apparent
- No cementing of fibers to each other
- No substances between threads
- No directionality to image
- No outline to image
- The image is a negative
- Contains distance information similar to a topographical map.

### STURP Conclusion:

"It is clear that there has been a direct contact of the Shroud with the body, which explains certain features such as the scourge marks, as well as the blood. However, while this type of contact might explain some features of the torso, it is totally incapable of explaining the image. There are no chemical or physical methods known which can account for the totality of the image, nor can any combination of physical, chemical, biological, or medical circumstances explain the image adequately."

## Burial Shroud of Jesus?

The Shroud of Turin conforms to what is known about First Century Jewish burial practices of using a single linen shroud. Strips of linen were only used to tie the hands and feet.

Textile analysis indicates an ancient origin. Threads were hand-spun. The cloth is pieced together in narrow bands with each hank of yarn individually bleached. All indicate an origin earlier than the Middle Ages.

If the shroud wrapped a human corpse as several medical forensic specialists believe, and if it originated in Israel, as many botanists believe, can it ever be proven to be Jesus? Only by inference:

- Blood on head from crown of thorns?
- Abrasions and bruises on face.
- Wound in the side.
- Over 120 scourge (whip) marks.
- Blood on the arms.
- Nail wound in the wrists.
- Nail wound in the feet.
- Legs not broken.
- Post mortem blood flow from side wound and on the back (not pictured).
- Legs are pulled up due to rigor mortis.
- Blood is from actual wounds and show evidence of gravity from a vertical position.
- No stains of decomposition.

**Fact or Fiction?** *"It is either the most awesome and instructive relic of 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 either one or the other, there is no middle ground."*— Historian John Walsh