

# Concerning the question of the authenticity of the Shroud of Turin: please, don't forget the evidence of the bloodstains!

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In one, if not the best Shroud of Turin documentary I've ever watched, *The Wonder of the Shroud*<sup>1</sup> (along with *Unfolding the Shroud* and *Secrets of the Dead*), Fr. Martin Haigh reported a very clever and true statement from professor James Cameron (British Home Office Pathologist), that anybody interested in the Shroud should always keep this in mind, simply because it is a proven fact (it's perhaps the most solid proven fact in all the scientific aspects regarding the Shroud). Here's what professor Cameron had to say about the Shroud: **"From the evidence of the bloodstains alone, this is clearly not a human forgery."** And you can be sure that this statement can be backed-up by a majority of medical or blood experts who have carefully studied the Shroud over the years, like Pierre Barbet, Rudolf W. Hynek, Giovanni Battista Judica-Cordiglia, Pierluigi Baima-Bollone, Sebastiano Rodante, Alan Adler, John Heller, Robert Bucklin, Frederick Zugibe, Gilbert Lavoie, Pierre Merat and many more!!! There's absolutely no doubt about the fact that, along with professor Cameron, all these experts could have testified in court that the bloodstains on the Shroud come from a real human body. And not only that, a human body who was dead at the time he was put in this burial cloth.

Even today... even after all the pioneer research done by some great French scientists like Barbet<sup>2</sup> and Vignon<sup>3</sup>, even after all the data published by STURP (Shroud of Turin Research Project) in peer-reviewed scientific journals<sup>4</sup>, we constantly find people who still forget, neglect and even deny that primordial fact about the Shroud!!! Those people still think that the Shroud can be something like a very brilliant artwork of some kind done by an anonymous forger (the use of a scorch technique or a rubbing technique involving some kind of pigments, like red ochre or sulfuric acid in water mixed with cobalt blue, are the most popular hypotheses today<sup>5</sup>).

I'm really amazed that we, who know the facts very well and understand that the Shroud of Turin is an authentic burial shroud of someone who suffered the same tortures as Jesus, are still debating the question of whether or not the bloodstains and the body image on the cloth were produced by some artistic technique! Really, I can't believe that we are still stuck at that point!

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<sup>1</sup>You can buy online a copy of this great documentary at this address: Sorry. This video is no longer available.

<sup>2</sup> Pierre Barbet, *La Passion de Jésus Christ selon le chirurgien* (A Doctor at Calvary), Éditions Dillen et Cie, Paris, 1950.

<sup>3</sup> Paul Vignon, *Le Saint Suaire de Turin : devant la science, l'archéologie, l'histoire, l'iconographie, la logique*, Éditions Masson, Paris, 1938.

<sup>4</sup> The two most important papers published by STURP concerning the question of the blood are: John H. Heller and Alan D. Adler, Blood on the Shroud of Turin, *Applied Optics*, 19 (16), 1980 and John H. Heller and Alan D. Adler, A chemical investigation of the Shroud of Turin, *Canadian Society of Forensic Science Journal*, 14 (3), 1981.

<sup>5</sup> A good example of that is the first full-size reproduction of the Shroud of Turin made recently by the Italian Luigi Garlasehelli. A description of this attempt to reproduce the Shroud can be found in the *Journal of Imaging Science and Technology*, 54 (4), 040301-01-04030114, 2010.



Shroud 32X microphotograph showing dense blood at the small of the back  
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First, to avoid any possible confusion, we must clearly state that it is a proven and confirmed fact that the blood on the Shroud is real human blood. Scientifically, there's absolutely no room for doubting this conclusion<sup>6</sup>. To be convinced, we simply have to note the fact that all the bloodstains on the Shroud possess a level of morphologic and physiologic detail so high that, from a forensic point of view, they cannot come from anything other than a bleeding

body. As Alan Adler indicates in his book *The Orphaned Manuscript*<sup>7</sup>: "The blood area... shows all the characteristics that would be expected for a clot retraction transfer to a fabric. As confirmed by the probing needle, the fibers are cemented together by the applied chromophore (note: Adler is referring to the red particles found in the blood area) and show capillarity in that they penetrate to the back of the cloth. They can also be seen under the crossing threads of the weave. There is evidence of abrasion of the chromophore

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<sup>6</sup> This scientific fact is one of the most solid that exists concerning the Shroud because it was confirmed by two series of independent chemical, microscopic and immunological investigations, done at the beginning of the 1980s by John Heller and Alan Adler from STURP in the US and by Pierluigi Baima Bollone in Italy on blood samples coming directly from the cloth. For a summary of Baima Bollone's findings concerning the Shroud, see: Pierluigi Baima Bollone, *Sindone 101 domande e risposte* (101 Questions on the Holy Shroud), Edizioni San Paolo s.r.l., Milano, Italy, 2000. The principal result of these two independent investigations was that the blood on the Shroud is really human (or at the very least, primate), confirming the opinion of the French surgeon Pierre Barbet, who was one of the first medical experts to analyze the Shroud in the 1930s. It's interesting to note that Baima Bollone was even able to determine that the blood group is AB. This conclusion has been subject to intense criticism over the years. Some scientists, like Alan Adler himself, thought that all ancient blood would give a "false positive" AB result. Nevertheless, in his book *Sindone 101 domande e risposte* (101 Questions on the Holy Shroud), Baima Bollone explained, with very good arguments, that it is highly unlikely that he could have obtained a "false positive" result in that case. Like he said himself, the fact that he was able to clearly determine the blood group is another very good indicator that the blood on the Shroud is real human blood. And even if he really got a "false positive" result for the group AB, the simple fact that he was able to get a clear blood typing result for a red-coated fiber and no result at all for a white fiber, while using the same chemical test for both fibers, is a very strong indicator that this red coating is composed of real human blood, whether it really belongs to group AB or not. This reasoning can also be applied to the Sudarium of Oviedo because Baima Bollone was able to determine, with the same kind of chemical test, that the blood group of the blood found on this other relic associated with the Passion of Jesus of Nazareth is also of type AB. This result gives a pretty good argument (without being a definitive proof) in favor of a probable use of this small linen cloth on the same head that was in contact with the Shroud. Finally, it's important to note that these two AB results obtained by Baima Bollone are still waiting to receive an independent confirmation from another specialist who could perform a new chemical analysis on blood samples coming from the Sudarium and the Shroud. It's only then, and not before, that it will really be possible to consider these two AB results as being true scientific facts.

<sup>7</sup> Alan D. Adler, *The Orphaned Manuscript: A Gathering of Publications on the Shroud of Turin*, Effata Editrice, Torino, Italy, 2002.

from the more exposed surfaces as would be expected if this were an applied material with mechanical characteristics different from its cloth substrate<sup>8</sup>.” And not only that, we must also keep in mind another very important fact about the bloodstains that are present on the Shroud: the vast majority of those stains are not composed of complete blood that would have been liquid when formed but, instead, they came from exudates of blood clots<sup>9</sup> that were humid enough to leave a mirror image on the cloth, along with a ring of clear serum around them that is very hard to see, except under UV light<sup>10</sup>. This important fact alone is sufficient to conclude that those stains were not artificially put on the cloth by an artist, but came instead from a real human corpse. Also, in 1976, Italian doctor Sebastiano Rodante was able to determine that both arterial and venous flows, caused by numerous sharp objects, are present in the region of the head on the Shroud, which is another important forensic proof that the blood on the cloth comes from a real body who was bleeding shortly before his death<sup>11</sup>. Finally, there’s another very important observation regarding the blood and serum present on the Shroud and it concerns the fact that these biological substances have been transferred to the cloth before the formation of the body image, because there’s no body image underneath these stains<sup>12</sup>. In other words, whatever the body image formation mechanism was, these biological stains were able to block it, by acting like a protective screen at the surface of the cloth. Again, in itself, this single fact is enough to demonstrate that the Shroud is not some sort of artistic forgery, but is instead a real burial shroud of someone.

In sum, it is very telling to note that all these scientific facts that offer a real solid proof that the blood on the cloth is real human blood, often seem to be forgotten, neglected and even denied by all the skeptics who

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<sup>8</sup> On the contrary to the red-coated fibers, there is absolutely no signs of fibers cemented together, no signs of capillarity and no signs of abrasion concerning the colored fibers that form the body image on the Shroud and generally, there are no colored fibers that form the body image under the crossing threads of the weave. Another major difference between the bloodstains and the body image resides in the fact that many bloodstains have stained the cloth all the way to the reverse side while the body image has not, with the possible exception of the image of the hair in the frontal image (and maybe also the beard and the mustache). For more information on this controversial subject, see: Raymond N. Rogers, *A Chemist’s Perspective on the Shroud of Turin*, Barrie Schwartz Editor and Publisher, July 2008.

<sup>9</sup> In the 1990s, Alan Adler made new chemical and spectroscopic analyses on samples from the Shroud and was able to determine that the vast majority of the bloodstains on the Shroud come from exudated blood clots and not from complete blood in a liquid form, confirming a hypothesis developed by Pierre Barbet. For a summary of his results, see: Alan D. Adler, *The Orphaned Manuscript: A Gathering of Publications on the Shroud of Turin*, Effata Editrice, Torino, Italy, 2002.

<sup>10</sup> Doctor Pierre Barbet was one of the first medical experts to claim, in the 1930s, that there were probably halos of serum around the bloodstains that are on the Shroud. He was able to detect these halos to the naked eye, but he couldn’t be 100% sure that they were composed of serum. It’s only when the STURP team published their results at the beginning of the 1980s (particularly in the papers written by Heller and Adler, and also the one written by Miller and Pellicori) that Barbet’s hypothesis was finally confirmed. Of course, seeing these very pale halos of serum with the naked eye is almost impossible if someone is not a medical or a blood expert. That’s why most people had to wait until Vern D. Miller and Samuel F. Pellicori published their ultraviolet fluorescence photographs of the Shroud before they were able to distinguish these stains. In addition, these ultraviolet fluorescence photographs have also revealed very precise anatomical details of the scourge marks that are invible in white light, which is another important confirmation that the Shroud is a real burial cloth that has enveloped for some time the body of a man who was scourged and crucified, instead of an artistic forgery of some kind. Finally, there’s one more observation regarding the bloodstains that was made, thanks to these ultraviolet fluorescence photographs, and it is well summarized by Alan Adler in his book *The Orphaned Manuscript*: “The blood marks are all now highly absorbing, as would be expected if hemoglobin were present, as the porphyrin structure in this chromophore is a very strong near-ultraviolet absorber.” In other words, when it is exposed to UV light, the bloodstains on the Shroud react as expected for real blood. It is interesting to note that, on the X-ray fluorescence photographs that were taken by Roger A. Morris, Larry A. Schwalbe and J. Ronald London of STURP, the bloodstains on the Shroud also react as expected for real blood, i.e. they are all completely invisible on these photographs.

<sup>11</sup> Pierluigi Baima Bollone, *Sindone 101 domande e risposte* (101 Questions on the Holy Shroud), Edizioni San Paolo s.r.l., Milano, Italy, 2000.

<sup>12</sup> Alan D. Adler, *The Orphaned Manuscript : A Gathering of Publications on the Shroud of Turin*, Effata Editrice, Torino, Italy, 2002.

constantly claim that the Shroud was made by a forger who used some kind of artistic technique to create his masterpiece<sup>13</sup>!

The reality is this: science has proved that there really was a dead man draped in that burial shroud<sup>14</sup> and that this dead man suffered exactly the same tortures as Jesus of Nazareth, as reported in the Gospels<sup>15</sup>!!! It

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<sup>13</sup> However, we should note that there's still two characteristics concerning the blood on the Shroud that are still used by skeptics to claim that the blood is not really human blood: 1- The color of the blood on the cloth is still red while it is well known that blood in the open air usually turns black or brown quickly after clotting. And 2- The level of potassium found in the blood was much lower than normal and almost no cells are present in the blood. Here, it is very important to emphasize the fact that these two particular characteristics, when we compare them to the rest of the data concerning the blood, can absolutely not pretend to be sufficient to reject the scientific conclusion that the blood on the Shroud is really human blood. In fact, if we believe Alan Adler's opinion (who was a real expert in blood chemistry), these two abnormal characteristics are simply due to the fact that **the blood on the Shroud is not "normal" blood**. For the lack of potassium and cells in the blood, Adler indicates that it is surely due to the fact that the blood on the Shroud comes from exudated blood clots that were humid enough to leave an imprint on the cloth, instead of complete blood in a liquid form (see note #9), while he states that the high level of bilirubin in the blood (a pretty rare feature for bloodstains) is responsible for the fact that the color of the blood is still red, even after many centuries, if not 2000 years. Other explanations have been proposed over the years but, in the end, the real question raised by these two abnormal characteristics is not: "Can the blood on the Shroud be anything other than real human blood?", but instead: "Why did the real human blood that is on the Shroud present such unusual characteristics?" Here, it is truly possible that the right answer to this question is the one given by Adler, i.e. **simply because the blood on the Shroud is not "regular" blood!** To conclude this point, it's essential to understand that the amount of data that can support the idea that the blood on the Shroud is real human blood is huge and doesn't leave any room for doubt. It's also important to remember that this scientific conclusion was confirmed by two independent series of analyses of blood samples coming directly from the fabric. In such a context, these two particular characteristics, even if they seem strange at first sight, cannot, in any case, put into question a conclusion like that, which rest on such a solid base.

<sup>14</sup> The most certain proof that the man was dead can be seen in the numerous signs of rigor mortis present in the body image. These signs have been noted by the vast majority of the medical experts who have studied the Shroud over the years, like Barbet, Baima Bollone, Bucklin, Zugibe, etc. And more importantly, these signs of rigor mortis were clear enough for these experts to conclude that the man of the Shroud most probably died in a vertical position of crucifixion, which is completely consistent with the visible marks of nailing in the wrist and feet area on the cloth. For example, the bended position of the knees, the left more than the other, the bended position of the forearms, the distention of the feet and the fully expanded position of the chest, are all totally consistent with someone who died with the arms elevated over the shoulders, in a vertical position of crucifixion. And we must also note that this alleged position of crucifixion at the time of death is also supported by the direction of all the pre-mortem blood flows that we can see on the Shroud, especially those on the forearms, and also by the direction and the particular appearance (not totally straight) of the post-mortem blood flow under the side wound. By the way, the simple fact that the specialists have been able to differentiate between pre-mortem and post-mortem blood flows is another very clear sign that the blood on the cloth came from a real body and that this man was dead when his corpse was put in the Shroud. Finally, the open aspect of the side wound (with no sign of retraction of the edges of the wound) make it clear that this particular injury could not have been inflicted when the man was still alive.

<sup>15</sup> The numerous puncture wounds present in the region of the head, whether on the frontal image or on the dorsal image, are the most striking features we can see on the Shroud in line with what the Gospels mention about the Passion of Jesus of Nazareth. Effectively, for the medical experts who have examined the Shroud, this type of wound, that covered the entire surface of the head, is totally consistent with the wearing of a cap of thorns. Even if it is possible to think that other crucified victims could have been crowned with thorns like Jesus (we can think of some self-proclaimed Jewish Messiahs or some revolutionary leaders), the fact that there is no clear historical record of another case of crowning with thorns prior to a crucifixion seems to indicate that this was not a common practice. The fact that Jesus was crowned with thorns is directly related to the accusation of the Jewish leaders who pretended that he proclaimed himself the king of the Jews. In this context, this very particular torture must be understood as a spontaneous act of some Roman soldiers that would not have been performed in another context. Because of that, the puncture wounds in the scalp of the man of the Shroud can be seen as the most important sign that permits us to link this relic with Jesus of Nazareth. It's also important to note that the information coming from all the other injuries we can see on the Shroud, whether it be the nailing of the wrists and feet, the side wound compatible with a piercing done with a Roman lancea (lance), all the scourged wounds indicating a violent scourging done with a Roman flagrum, are totally consistent with the Gospel accounts concerning the Passion and death of Jesus of Nazareth. Finally, the fact that the legs of the man of the Shroud don't appear to have been broken represent another important similarity with the Jesus of the Gospels.

is as simple as that and this is called in science: **a fact!** And this fact leads to only one possible conclusion: in order to produce the kind of bloodstains that are on the Shroud, there must have been a real human being that had bled a great deal shortly before his death, prior to being put into this cloth. This is the only way to explain the bloodstains. I repeat it: this is the only way! And this conclusion leads to another very important one (especially when we consider the fact that there's no body image under the blood and serum stains): the body image that is on the Shroud must have been caused by some kind of interaction between this crucified body and the cloth. Just like the bloodstains, this is the only way we can explain the body image, scientifically speaking<sup>16</sup>. In other words, the presence of a real tortured and crucified man inside the cloth is necessary to explain, not only the bloodstains, but also the body image that is on the Shroud. So, from this moment on, you can forget any form of artistic technique to explain the Shroud of Turin, because it just doesn't fit with what we know about this relic (which should be considered an authentic archaeological artifact)!

And because the Shroud is a real burial shroud of a crucified man, it's completely irrelevant for a skeptic to still claim that it is a scorching, a rubbing, a medieval photograph, a painting, etc. These artistic hypotheses have been set aside by science long ago and I don't understand that many skeptics still think it is an appropriate way to explain the Shroud!!! From a scientific standpoint, this kind of thinking is like today's Creationists in some Christian circles who still believe that the world was really created in six days and who believe that this planet is only 6000 years old!!! From a scientific standpoint, the way these skeptics see the Shroud and the way those Creationists see the Universe are exactly the same, i.e. completely off-track versus the reality that we know now, thanks to our scientific knowledge!!!

So, please, can we take this eternal debate concerning the authenticity of the Shroud<sup>17</sup> to the next step??? Can we at least agree on one important and solid fact? In order to produce the bloodstains and the body image we see on the Shroud, it takes a real human corpse and not only that, a real human corpse who suffered a great deal before his death! The very particular nature of the blood on the Shroud is clear about it. Effectively, the high level of bilirubin found by Heller and Adler in blood samples from the Shroud<sup>18</sup> lead to only one scientific conclusion: the man who stained the Shroud with his blood had suffered intensely shortly before his death<sup>19</sup>. And the conclusion is completely coherent with the bloodstains and the body image we see on the cloth! Question to the skeptics: what else do you need to understand that the Shroud

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<sup>16</sup> This conclusion can be confirmed by the conjuncture of at least 4 important facts: 1- The body image was caused by a dehydration and/or an oxidation process on the surface of the cloth and not by any kind of pigments or dyes; 2- There's a close correlation between the body image intensity and the 3D structure of a real human form; 3- The blood on the cloth is real human blood that comes from exudates of blood clots and is surrounded almost each time by a halo of serum; 4- There's no body image under the blood and serum stains, meaning that these biological substances went on the cloth first and, only after that, the body image was formed.

<sup>17</sup> The term "authenticity" is used here in the sense of an authentic burial cloth that contained for some time the corpse of a bloody man having apparently suffered a scourging and a crucifixion in accordance with the known Roman method.

<sup>18</sup> John H. Heller and Alan D. Adler, A chemical investigation of the Shroud of Turin, *Canadian Society of Forensic Science Journal*, 14 (3), 1981. For more details about the level of bilirubin found in the blood, see: Alan D. Adler, *The Orphaned Manuscript : A Gathering of Publications on the Shroud of Turin*, Effata Éditrice, Torino, Italy, 2002.

<sup>19</sup> In his book *The Orphaned Manuscript : A Gathering of Publications on the Shroud of Turin*, here's what Alan Adler had to say about the high level of bilirubin found in his blood samples: "In **traumatic shock** as would be experienced under flogging and crucifixion, red blood cells lyse and the released hemoglobin is both bound up in haptoglobin-hemoglobin aggregates (a brownish denatured methemoglobin color) and also degraded by enzymatic action in the liver to convert the heme portion to **bilirubin** which is also bound up in protein complexes, mainly with albumin (a yellow orange color)." In the same part of the book, he also wrote: "...the chemical testing not only supports the forensic conclusion that the blood marks are derived from contact of the cloth with clotted wound exudates, but that the shed blood was from someone who suffered a **traumatic death** as depicted in the body images."

had nothing to do with a scorching, a rubbing or any other art form that is known (or even unknown)?!? If we all could agree on this simple and solid scientific base, I think this would greatly help to elevate the debate about the authenticity of the Shroud, because it would then become more rational!!!

All we would be left with are these 2 questions: 1- Were the bloodstains and the body image on the Shroud produced by a human will or not? Note: when I say “not”, I don’t necessarily mean that a supernatural event occurred inside the Shroud. It can simply refer to an act of Mother Nature that science cannot yet explain. 2- Do the Shroud bloodstains and body image belong to Jesus of Nazareth or not?

**In order to answer these questions adequately, there are only four rational possibilities open to us:**

1- It is a real burial shroud of someone other than Jesus of Nazareth who suffered the same tortures as he with a forged image done by someone without using any art technique. In this case, a forger “naturally” produced the image while using a real human corpse. Because of the great resemblance between what happened to Jesus in the Gospels, we must assume that this forger did it in order to produce a false relic of the Passion of the Christ. Also, because of the presence of many differences between any known artistic depictions of the Passion of the Christ prior to the first known public exhibition of the Shroud in the 14<sup>th</sup> century and the bloodstains and the body image that are on the Shroud (for example, the nailing in the wrist instead of in the palms, the wearing of a cap of thorns instead of a crown and the very distinct dumbbell shaped marks of scourging coming from a Roman flagrum), we must assume that if he tortured and crucified himself (with the help of some collaborators), this forger was well aware of the Roman procedures concerning scourging and crucifixion. In fact, it is even more rational to think that this forger used the body of a real crucified victim who was put to death by the Romans, before the crucifixion was banished by the emperor Constantine, in the last years of his reign that ended in 337<sup>20</sup>. We also have to assume that this forger took the dead body out of the shroud before it started to corrupt in such a way that this extraction did not disturb the bloodstains, never broke the linen fibrils under them and did not disturb the body image<sup>21</sup>. In sum, this scenario can be described like a “natural” forgery using a real tortured and crucified body. And whether or not the forger knew that he would obtain a body image on the cloth, along with the bloodstains, is not completely clear. In fact, the formation of an image like that could have well been just an accident.

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<sup>20</sup> Pierluigi Baima Bollone, *Sindone 101 domande e risposte* (101 Questions on the Holy Shroud), Edizioni San Paolo s.r.l., Milano, Italy, 2000. Note: In his 1983 paper *The Authentication of the Turin Shroud: An Issue in Archaeological Epistemology*, William Meacham states that Constantine banished this form of execution in the year 315 A.D. (<http://shroud.com/meacham2.htm>). To remain prudent, we can estimate without a high risk of error that this banishment was proclaimed between 315 and 337 A.D.

<sup>21</sup> This very intriguing aspect of the bloodstains on the Shroud of Turin was first mentioned by French researchers like Paul Vignon, Pierre Barbet and Antoine Legrand during the first half of the 20<sup>th</sup> century, and was also noted, later on, by other Shroud researchers, like Pierluigi Baima Bollone, a forensic expert from Italy who examined the Shroud in person in Turin in 1978, along with the STURP team, and who was ultimately able to determine, as we said earlier, that the blood on the cloth is really human blood. Effectively, we can note an explicit recognition of this particular aspect of the bloodstains in his book *Sindone 101 domande e risposte* (101 questions on the Holy Shroud). We can also find a direct recognition of the undisturbed aspect of the bloodstains in an article entitled *The Death of the Shroud Man: an improved review*, which was co-written in 2008 by Jose de Palacios, a surgeon from the University of Madrid in Spain, along with other Shroud researchers. These are just two modern examples among others, of medical experts who agree with the observation made by Vignon, Barbet and Legrand. In Barbet’s mind (see his book *La Passion de Jésus Christ selon le chirurgien (A doctor at Calvary)*), the undisturbed aspect of the bloodstains cannot be explained scientifically in the context of a corpse who was enveloped in a Shroud for some time, long enough to leave many imprints of blood clots on the cloth, and then was taken out of this shroud before the appearance of the first liquids of putrefaction (some 36 to 72 hours after death, depending on many factors). As Barbet said, normally, when a blood clot leaves an imprint on a piece of cloth, after the removal of this clot from the fabric, it results that only a part of the clot remains fixed on the cloth and the other part stayed fixed on the skin, leaving holes and/or missing parts in the portrait of this clot on the fabric. But on the Shroud of Turin, the mirror images of the blood clots are, to the naked eye, perfectly intact, complete, reproducing each time the familiar image of a normal blood clot...



2- It is real burial shroud of someone other than Jesus of Nazareth who suffered the same tortures as he with a naturally occurring image. In this case, the body image on the cloth was produced accidentally by some undetermined natural phenomenon(s). In other words, this is not a forgery but instead, an accidental resemblance with the Jesus of the Gospels, including that this anonymous victim was also crowned with thorns (a very unusual procedure) and didn't have his legs broken (a standard Roman practice called "crurifragium" that was done to hasten death). In this scenario, we must assume that a person or a group of persons, for some obscure reason, took the dead body out of the shroud before it started to corrupt, in such a way that this extraction did not disturb the bloodstains, never broke the linen fibrils under them and did not disturb the body image. Also, because of the presence of many differences between any known artistic depictions of the Passion of the Christ prior to the first known public exhibition of the Shroud in the 14<sup>th</sup> century and the bloodstains and the body image that are on the Shroud (for example, the nailing in the wrist area and the dumbbell shaped marks of scourging coming from a Roman flagrum), we have to assume that these tortures and this crucifixion were executed under Roman control, before the crucifixion was banished by the emperor Constantine, in the last years of his reign, that ended in 337<sup>22</sup>. Finally, we must also assume that this anonymous crucified victim had the same privilege as Jesus of Nazareth, which was to be buried in a clean shroud<sup>23</sup>. It's important to note that this manner to bury a corpse is entirely consistent with the Jewish burial rites of the first century A.D.<sup>24</sup> Because of that, it's possible to think that this anonymous man could also have been a Jew of the same era as Jesus. In sum, this scenario can be described like a real burial shroud of an anonymous crucified man, which has bloodstains and a body image on it that shows a great accidental resemblance with the Jesus of the Gospels.

3 - It is the authentic burial shroud of Jesus of Nazareth with a naturally occurring image. In this case, the body image on the cloth was produced by some undetermined natural phenomenon. The fact that the body left the Shroud before it started to corrupt can be related with his resurrection, but that's not certain. In other words, a scenario like that doesn't absolutely need to call for the resurrection in order to explain the

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<sup>22</sup> See note #20.

<sup>23</sup> In his article *Crucifixion in Antiquity – The anthropological evidence*, renowned archaeologist Joe Zias states: "Giving the victim a proper burial following death on the cross, during the Roman period was rare and in most cases simply not permitted in order to continue the humiliation. Thus the victim was in many cases simply thrown on the garbage dump of the city..." (<http://www.joezias.com/CrucifixionAntiquity.html>). It's interesting to note that the same conclusion can also be found in the excellent article *Medical theories on the cause of death in crucifixion*, written by Matthew W. Maslen and Piers D. Mitchell. On the other hand, we have to understand that the description given by Zias and taken by Maslen and Mitchell concerned the Roman practice in general, and it is truly possible that the procedure could have been different in Palestine at the time of Jesus. In the documentary *The Wonder of the Shroud*, Fr. Martin Haigh, quoting the book *The New Testament and Rabbinic Judaism*, written by the distinguished Jewish writer David Daube, states that the normal procedure in Palestine during the first century A.D. was to throw the body of crucified victims into a common grave and only after a year, the family was allowed to collect the bones (in order to place them in an ossuary and bury them in a family tomb). We can also find a very similar description in the book *La Passion de Jésus : De Gethsémani au Sépulchre* (The Passion of Jesus: From Gethsemane to the Sepulchre), written by Jean-Maurice Clercq, a French doctor, but with an interesting precision, i.e. that this very particular procedure came from a description that is found in the Talmud, which is a text written **after** the time of Jesus. Personal note: no matter if the correct procedure at the time of Jesus was the one described by Zias, Maslen and Mitchell or the one described by Daube and Clercq, we must always assume that, under Roman law, it wasn't a normal procedure to allow a condemned person (Jew or other) to be buried in a clean burial shroud after his execution by crucifixion. That can explain why the Gospels emphasised the fact that Joseph of Arimathea had to ask permission to Pilate to take the corpse of Jesus in order to give him a decent burial. That can also explain the presence of a post-mortem wound in the side of the man of the Shroud... Effectively, this type of post-mortem injury to the chest was surely done by one of those who were in charge of the crucifixion to make sure the victim was really dead. This kind of post-mortem procedure is logical only in the case a "special" permission was given to take the body, in order to give him a decent burial.

<sup>24</sup> Maurus Green, Enshrouded in Silence - In search of the First Millennium of the Holy Shroud, *Ampleforth Journal*, 74:3, 1969, pages 321 to 345, (<http://www.monlib.org.uk/papers/aj/aj1969green.htm>). See also: William Meacham, The Authentication of the Turin Shroud: An Issue in Archaeological Epistemology, *Current Anthropology*, 24:3, 1983 (<http://shroud.com/meacham2.htm>).

bloodstains and the body image we see on the cloth. Nevertheless, even if this scenario involves a natural creation of the body image of Jesus, the fact that the body left the Shroud before it started to corrupt and also the fact that the extraction of his body from the Shroud did not disturb the bloodstains, break the linen fibrils under them or disturb the body image, can be seen as possible signs (not proofs) of a “dematerialization”<sup>25</sup> of his body at the moment of the resurrection. To conclude this point, there’s one thing very important to note: if one day we could prove that it’s right, a scenario like that, involving some kind of natural phenomena related to the body image formation, could never be used by the skeptics as a proof that Jesus did not resurrect, because in the light of the all the facts we know, particularly concerning the undisturbed bloodstains and the unbroken fibrils under them, a manual extraction of the body from the shroud seems to be highly improbable or, at the very least, difficult to explain. In sum, this scenario can be described like the authentic burial shroud of Jesus of Nazareth, which has bloodstains and a body image on it that was produced by some unknown natural phenomena which were probably of chemical nature.

4- It is the authentic burial shroud of Jesus Christ with a supernaturally occurring image<sup>26</sup>. In this case, the body image on the cloth was produced by some undetermined supernatural phenomenon directly linked to his resurrection. Most of the partisans of this scenario pretend that the body image was caused by a by-product of the resurrection, that can be seen as a burst of energy of some sort (near infrared light, UV light, x-ray, microwave, protons, neutrons, electro-static discharge, etc.) released at that time... In any way, a “dematerialization” of his body at the moment of the resurrection (accompanied or not by a burst of energy) could explain why the body left the Shroud before it started to corrupt, why the bloodstains were undisturbed and also why no linen fibrils under them were broken. In sum, this scenario can be described as the authentic burial shroud of Jesus of Nazareth, which has bloodstains and a body image on it that was caused, directly (a miraculous image made by God) or indirectly (a by-product), by his resurrection.

I really think this is where we now stand in front of all the scientific facts we know about the Shroud, especially the facts regarding the bloodstains. I really don’t think there are other possibilities than the four I just mentioned to explain properly the bloodstains and the body image present on this cloth. **The answer to the mystery has to be found in one of those four scenarios and nothing else.**

One thing’s for sure: if this eternal Shroud authenticity debate could focus one day (the sooner, the better) only on the four possibilities exposed here, that will be a great day for the Shroud, because there will be no more wasted time in fruitless discussions and ravings of all kinds!!!

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<sup>25</sup> This expression should be understood in the sense of a “vanishing of the body”. And it’s important to note that, on a religious level, words like “dematerialization” or “vanishing” do not mean that the body of Christ would have been “destroyed” in favor of a surviving of his soul only (like the idea we can have of a ghost, for example). Effectively, the Catechism of the Catholic Church (particularly #996–1000) indicates that, at the time of Jesus’ Resurrection, his entire human reality (body and soul) begin to exist outside the space-time frame where physical activity takes place, as described by science.

<sup>26</sup> This 4th scenario might shock some because it is based on a dogma of faith (the Resurrection of Christ) and, by definition, it goes beyond the pure scientific rationality. But, since the Shroud of Turin is considered by Christian tradition as being the authentic burial cloth of Jesus-Christ, it seems justified to keep open that possibility, even if, in face of all the known and confirmed data, such a scenario is not necessarily the most probable. For a very detailed analysis of that possibility, see: Raymond N. Rogers, *A Chemist’s Perspective on the Shroud of Turin*, Barrie Schwartz Editor and Publisher, July 2008. See also note #27 in the next page. This precision concerning the Resurrection could also be applied to the 3<sup>rd</sup> scenario, but only in the case where it would be this supernatural event that would have caused the interruption of the natural process of image formation and that would have been also the cause of the undisturbed aspect of the bloodstains that are visible on the cloth.



**In order to clearly summarize the situation, we can say that science is now able to provide two important conclusions concerning the Shroud of Turin<sup>27</sup>:**

- 1- IT IS NOT AN ARTWORK OF ANY KIND, SIMPLY BECAUSE THE BLOODSTAINS CLEARLY INDICATE THAT IT IS A REAL BURIAL SHROUD THAT ENVELOPED, FOR LESS THAN 72 HOURS<sup>28</sup>, A REAL MAN WHO WAS TORTURED, SCOURGED, CROWNED WITH THORNS AND DIED BY CRUCIFIXION<sup>29</sup>.
- 2- THE BODY IMAGE ON THE SHROUD MUST ABSOLUTELY HAVE BEEN CAUSED BY SOME FORM OF INTERACTION BETWEEN THE CLOTH AND THIS TORTURED AND CRUCIFIED BODY<sup>30</sup>.

It is crucial to emphasize the fact that these two scientific conclusions are very solid since they are only based on the vast amount of data and observations that were accepted by the majority of the scientists who have studied the Shroud. **Because of that, there is no good reason to seriously doubt these two conclusions.** It's also important to mention that these conclusions are the same as the main conclusions reached by the STURP team, after the scientific investigation they did on the Shroud at the end of the 1970s and at the beginning of the 1980s<sup>31</sup>. **In this context, why would we waste one more second of our precious time arguing about false ideas (like the Shroud being an artistic forgery) that simply do not fit with what science knows about the Shroud?**

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<sup>27</sup> As we have seen previously, there are only 4 possible scenarios concerning the Shroud that have any chance to "fit" with these two conclusions. And when we use the Occam's razor principle, the probability seems to be much higher for some of them (like the scenario #3 for example) than it is for others (like the scenarios #1 and 2). In reality, when we analyse rationally each one of these four proposed scenarios, there's no doubt that the scenario #3 (particularly the option that doesn't call for the Resurrection to explain the appearance of the bloodstains) is the one that demand the fewest number of special assumptions. That doesn't mean this scenario is necessarily the correct one, but nevertheless, since we're dealing with probabilities and not certainties, we have to admit that it is effectively the most probable scenario that can explain the bloodstains and the body image on the Shroud. For a good description of the Occam's razor principle, see [http://en.wikipedia.org/wiki/Occam's\\_razor](http://en.wikipedia.org/wiki/Occam's_razor). However, it should be noted that, in the case where the radiocarbon test of 1988 would be accurate and the Shroud would really be medieval (between 1260 and 1390), the scenario #1 would be the only one that would "fit" with such a result. But since 2005, when Raymond N. Rogers of Los Alamos National Laboratory, the head chemist of the STURP team, published the results of his analyses of some threads taken from the middle of the carbon 14 sample (a unique sample that came from a damaged corner of the Shroud), the result of the radiocarbon test of 1988 is considered by many scientists to be non representative of the main body of the Shroud. So now, because of these results published by Rogers (that were independently confirmed by John L. Brown of Georgia Tech Research Institute in 2005 and by Robert Villarreal of Los Alamos National Laboratory in 2008), the idea that the Shroud could really be a "natural" forgery using a real tortured and crucified body, made during the Middle Ages, seems to be highly unlikely. In fact, if such a forgery ever happened (like we said, using Occam's razor principle, the probability seems very thin), it's much more logical to think that it was done during the time crucifixion was still performed regularly by the Romans, i.e. before 337 A.D. (and more probably before 315 A.D.).

<sup>28</sup> Raymond N. Rogers, *A Chemist's Perspective on the Shroud of Turin*, Barrie Schwartz Editor and Publisher, July 2008. Note: in his book, Rogers cites a study by Arpad A. Vass et al., indicating that the appearance of the first liquids of putrefaction usually comes between 36 to 72 hours after death, depending on many factors.

<sup>29</sup> This first conclusion can be easily confirmed by the conjuncture of all the results obtained by numerous independent researchers that have analyzed the Shroud over the years, particularly when we consider that it has been independently confirmed that the bloodstains on the cloth are really made of human blood coming from exudates of blood clots, instead of complete blood in a liquid form. Also, the high level of bilirubin found in the blood is another important fact that can confirm even more this particular conclusion.

<sup>30</sup> See note #16.

<sup>31</sup> For a good summary of STURP conclusions, see <http://www.shroud.com/78conclu.htm>.

Before I end this article, I just want to give you another fact that can help reinforce the conclusions I just drew: of the tens, if not hundreds, of reproduction attempts of the Shroud done over the years with a variety of artistic techniques, absolutely none of them has even come close to reproducing the bloodstains we see on the Shroud with the same level of morphologic and physiologic precision. In fact, in most of these attempts, the person who did the reproduction didn't even try to reproduce the bloodstains with a great care for precision, simply because he was well aware of the fact that it wasn't possible for him to do an exact copy (or just even a close copy) of these stains! To me, all these resounding failures, in relation to the physical reproduction of bloodstains that are present on the Shroud, speaks very loud!!! And I'm not even talking about reproducing the chemical and spectroscopic characteristics of the bloodstains, i.e. blood that comes from exudated blood clots present on the skin of someone who suffered greatly before dying, generally accompanied by halos of serum and that stop the body image from forming on the cloth<sup>32</sup>. To conclude this point, here's a fact that speaks louder than anything else: on all the reproduction attempts of the Shroud that were made, I don't think there's even one of them that has no body image under the bloodstains! This is due to the fact that, in all these attempts (and on the contrary to the Shroud), the body image was the first thing that was made and only after the bloodstains were reproduced (with no great success) over the image.

In fact, if we could do the test and ask a forensic expert to analyze all the artistic reproductions of the Shroud that were done over the years, there's absolutely no doubt that this person would easily detect that the bloodstains on the cloth don't come from a real human corpse, as opposed to the Shroud. Even Luigi Garlaschelli in Italy, with his full-size reproduction of the Shroud (the first attempt of that kind), did not even try to replicate the bloodstains with great detail<sup>33</sup>!!! I don't think there is a better example than this one to understand the impossible challenge that has to face those who would like to reproduce the Shroud by using some kind of artistic technique... In reality, it's totally impossible, simply because the Shroud is not an artwork as proven by the real human blood on the cloth that come from exudated blood clots<sup>34</sup>!

With this paper, I hope I have been able to set the record straight regarding the question of whether or not the Shroud of Turin is a real burial cloth of someone who was tortured and crucified. I believe I've been able to demonstrate in a convincing way that there's absolutely no place for doubt regarding the fact that it is an authentic burial cloth that has enveloped the corpse of a real crucified man for a short period of time.

**So now, and maybe for the first time in history, can we start an intelligent debate that can always rest on that solid scientific base that the Shroud is a real burial shroud of someone who've been tortured and crucified, in the same manner than Jesus of Nazareth, as reported in the Gospels??? And if we**

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<sup>32</sup> Alan D. Adler, *The Orphaned Manuscript : A Gathering of Publications on the Shroud of Turin*, Effata Editrice, Torino, Italy, 2002.

<sup>33</sup> Thibault Heimburger and Giulio Fanti, *Scientific comparison between the Turin Shroud and the first handmade whole copy*, Proceedings of the International Workshop on the Scientific approach to the Acheiropoietos Images, ENEA Frascati, Italy, 4-6 May 2010 (<http://www.acheiropoietos.info/proceedings/HeimburgerWeb.pdf>).

<sup>34</sup> In face of this solid scientific fact, some skeptics imagined that an artist could have touched up the image on the Shroud by painting with real blood. But this idea has been completely demolished by Alan Adler, the blood expert of STURP. Here's what he said about that in his book *The Orphaned Manuscript*: "We have shown by immunological tests that the blood is definitely primate blood, and that it must have been taken from the exudate of a clot at a certain point in the clotting process. An artist would therefore have needed the exudate from the wounds of a severely tortured man, or baboon, and he would need to take the substance within a 20-minute period after the clotting had begun, and paint it on the cloth with the serum edges and all the other forensic precision that we see there. I believe most reasonable people would conclude that it is simply impossible that an artist could have produced the blood imprints on the Shroud of Turin. Rather, it is logical to conclude, from the nature and characteristics of the bloodstains on the Shroud, that the cloth once enfolded the body of a severely beaten and crucified human being."

finally decide to do so, why not start by asking ourselves this question: **“If the man of the Shroud is not Jesus of Nazareth, then who is he???”**

## Annex

### Comments from Pope Pius XI<sup>35</sup>:

As a bonus to this article, I thought it would be interesting to read two comments from Pope Pius XI on the subject of the authenticity of the Shroud. The first comment was he, speaking as the Pope, and the second comment was he, speaking as a scholar. Note that these comments were made during his papacy, between 1922 and 1939. So, here's what Pius XI had to say about the Shroud:

“The Holy Shroud of Turin is still mysterious, but **it is certainly not the work of any human hands**. This, one can now say, **is demonstrated**. We said mysterious, because that sacred object still involves many problems, but certainly it is more sacred than perhaps any other; and, as it is now established in the most positive manner, **even apart from any idea of faith or Christian piety, it is certainly not a human work.**”

“We have personally followed the studies on the Holy Shroud, and we are **convinced of its authenticity**. Some opposition was raised, but they are not consistent.”

This last comment is a very personal reflection of this Pope, where he expressed his intimate conviction that the Shroud is the authentic burial cloth of Jesus-Christ. It is not an official statement made in the name of the Catholic Church.

In the end, the most important thing to note is the fact that the first quote from Pope Pius XI clearly shows that even before the first two direct scientific investigations done in 1973 and 1978, there was people, like himself, who were already able to completely reject any idea of an artistic forgery concerning the Shroud. This is due to the fact that, even in the 1930s, the state of the scientific research was good enough to be able to conclude that the bloodstains and the body image on the Shroud were produced by a real tortured and crucified body and not by any form of artistic technique.

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<sup>35</sup> I have found these two quotes from Pope Pius XI in the article *Doctor Hynek and the Holy Shroud*, written on the 4<sup>th</sup> of November 1951, by Edmard A. Wuenschel, who was then the Honorary President of the Holy Shroud Guild (<http://holyshroudguild.org/rev-weuenschel.html>).