

## The Shroud of Turin and Oxford University

Pam Moon. August 15<sup>th</sup> 2019

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This paper examines the 1988 radiocarbon dating of the Shroud of Turin and the opinions of Oxford University academics. It looks at the dangers associated with the separation of scientific tools and historical disciplines. Using <sup>14</sup>C as an isolated, single test resulted in the determination that the Shroud was medieval. However, that result created a historical vacuum for the Shroud which could not be filled by authentic medieval sources and provenance and it does not compare with the strength of historical evidence that the Shroud of Turin was the burial cloth of Jesus of Nazareth.

The core of the paper looks at the most probable reasons why the sample chosen for radiocarbon date was flawed, using Oxford University’s own photographs. There is strong evidence that, following the fire of 1532 AD, the sample was disinfected, stitched, repaired (on at least three occasions) and dyed. The paper ends with the good news of 2019 that the Oxford Journal *Archaeometry* has published the paper *Radiocarbon Dating of the Turin Shroud: New Evidence from Raw Data*; T. Casabianca; E Marinelli; G. Pernagallo; B. Torrisi. That paper concludes: ‘A statistical analysis of the Nature article and the raw data strongly suggests that homogeneity is lacking in the data and that the procedure should be reconsidered.’

Now history has become more like a science. You cannot make a historical statement without sources and provenance. You have to assess how reliable the texts are and the motives of the writer.

If we assume, as most people did until 1988, that the Shroud wrapped Jesus of Nazareth, then there are simple answers to the 5 Ws:

What?	Burial Shroud
Who?	Jesus of Nazareth
When?	30-33 AD
Where?	Jerusalem
Why?	Too complex for this short paper

There were multiple sources by 300 AD including Greek and Latin copies of New Testament. For example, the image right is the stunningly beautiful Codex Sinaiticus, a complete New Testament, kept at the British Library. It dates to the middle of the 4<sup>th</sup> Century.



There are multiple points of congruence between the biblical text and the Shroud of Turin. It is a Visual Gospel.

I created two posters which demonstrate the similarities between the Biblical accounts of Jesus and what is visible on the Shroud. (see appendix 1 and 2 for detail).



When the  $^{14}\text{C}$  announcement was made, Oxford professors were pictured. Professor Edward Hall is on the left. Professor Michael Tite who had coordinated the dating from the British Museum is in the middle. He went on to become Professor of Archaeology at Oxford. Dr. Hedges, also of Oxford, is on the right. So how did the academics from Oxford explain the nature of the Shroud? What were their 5 Ws?

Professor Edward Hall said: (Someone) “just got a bit of linen, faked it up and flogged it.”<sup>3</sup> There are problems with this hypothesis, notably: there is no who, where, why or how. ‘Faking it up’ suggests a paint technique but STuRP science in 1978 showed there was no paint. Michael Tite backed this up in a 2016 BBC interview<sup>4</sup> when he said: “There is no real evidence for paint.” Finally, the Shroud has never been sold for money.

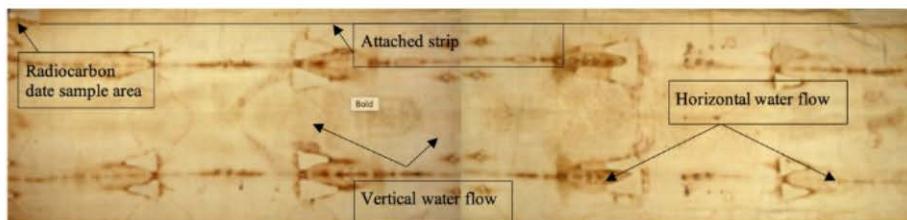
Professor Michael Tite’s own explanation was given in the same BBC Radio interview:

*“I don’t believe it’s the Shroud but I think it is highly probable there was a body in there. It was the time of the Crusades. A very appropriate way of humiliating a Christian would be to crucify him, like Christ. I think that is a very real possibility. And then the cloth is put over the body and sort of bodily fluids resulting from the stress of a crucifixion react and caused this dis-coloration and ultimately a certain degree of decay in the Shroud.”<sup>4</sup>*

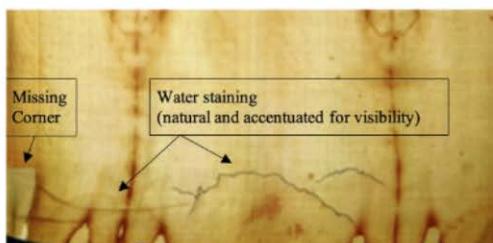
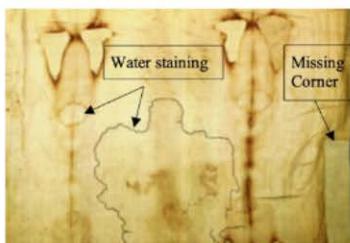
There are problems with this hypothesis too: there is no historical record of the crucifixion of any Crusader. Professor Tite, like Professor Hall, does not supply information for who, when, where, or why. There are no historical sources or provenance for such an event. Finally, there is no evidence that bodily fluids create any image, even under duress.

My journey to discover more about the radiocarbon date began when the great Shroud film maker David Rolfe said in 2012: ‘The radiocarbon date is like a “dead hand” on people’s interest in the Shroud.

I started to examine the folding patterns evident from the damage to the cloth. There are two major water stain patterns. The one above the head and on the centre of the chest was created when the cloth was folded and then stored vertically and water came from the bottom up.



The water stains surrounding the burn marks were created when the cloth was stored horizontally in Chambéry in 1532 AD. Douse water came from the top to extinguish the fire. The carbon date sample was taken from material adjacent to the missing corner on the top left-hand side. So why are two corners missing from the Shroud? If it was fire damage all the corners would be missing. The usual explanations given are not convincing. It was unlikely to be wind damage from an exposition or the work of relic hunters. Why would someone want a relic from the strip attached and not the real thing? It is likely that douse water and then subsequent bacterial damage to the cloth led to the cut corners. You can see in the images below that the water stain patterns at the ends of the cloth match the height of the missing corners. Chambéry in December was swampy with very high humidity levels raising the likelihood of bacteria. If a disinfectant were used in the corner, the radiocarbon date would be null and void because a disinfected cloth cannot be carbon dated.



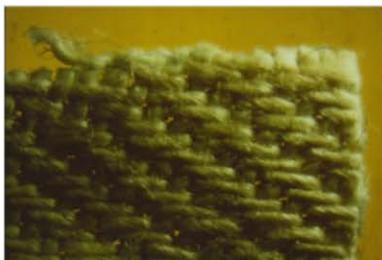
The Lier Shroud, (below left) created in 1516 AD, shows feet very clearly drawn. They are not visible today on the Shroud (below right). This further points to water damage as a casual factor for the missing corners.



I began an email correspondence in 2013 with Professor Christopher Bronk Ramsey, head of Oxford University's Radiocarbon Accelerator Unit. The first question was: In the light of water damage, why wasn't the Shroud sample autoclaved to remove endospores? Endospores are some of the oldest bacteria in the world and have been found on Mummy linen. They have a very hard calcium carbonate exterior and can regenerate from a hibernation state. In hospitals, all linens are autoclaved or heat treated at very high temperatures before a surgical procedure as it is the only way to ensure the removal of endospores. No-one would have an operation without the autoclaving of the theatre linens. Professor Ramsey's response was 'This would be removed by the processes used for routine dating.' I would disagree with that.

It became clear in the correspondence that Oxford University had photographs, so when a friend suggested the Freedom of Information route, I submitted a FOI request for data and photographs on May 1<sup>st</sup> 2014. I heard back from the compliance officer Max Tod:

'I am writing to confirm that we are processing your request for information under the Freedom of Information Act and that we shall reply no later than the statutory deadline of 30 May.'

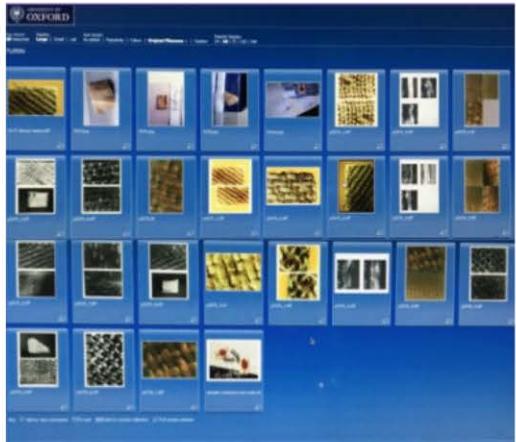


On 30 May I had the following e-mail:  
'The Oxford Radiocarbon Accelerator Unit has started to publish this data on their website. The unit has not had time to scan all the photographs. We will let you know when the remaining data is published'

In British law organisations must comply with FOI requests so this non-compliance was very

unusual. Two images were published: the image right and a control. With Max Todd, I arranged a week-long extension until June 6<sup>th</sup> 2014.

On 7<sup>th</sup> June, the images appeared (right). This was mainly 24 photographs giving eight images each of the Shroud and two controls, Thebes and Nubia. A third control, the medieval fibres of the cope of Louis of Anjou, had been given to the laboratories by Professor Michael Tite at the last moment without the permission of the Catholic Church. There were not enough sealed containers so it was sent in paper bags. This fourth sample was not photographed by Oxford University and the fibres were tested non-sequentially with the three main samples. This irregularity puts question marks over the results.



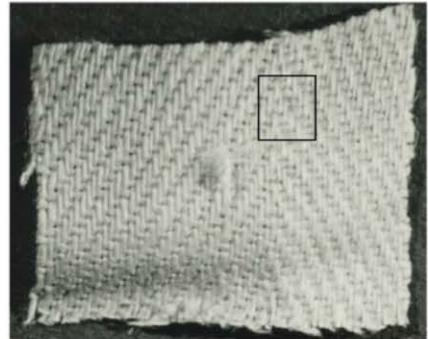
One of the images is of great significance. I didn't realise the importance of this image initially. It was misclassified in the FOI as a control but as this is herringbone weave it must be the Shroud. If you look at the Oxford photographs it is now p2575\_9. \_8 is the highest number for the controls. Professor Ramsey said he classified it as a control because that is what it said on the back of the photo, but he readily acknowledged it was a Shroud image and changed the classification. We will return to this.

I sent the link of all the photos to Donna Campbell, a textile expert, who works for one of the oldest linen manufacturers and weavers, Thomas Ferguson Irish Linen. Donna Campbell's first question to Professor Ramsey in the course of her research was 'What did the Shroud measure?' In the reply, we discovered the Shroud was weighed but not measured. There didn't appear to be any detailed analysis on the Shroud material published by Oxford University: i.e. chemical or bacterial reports. No samples were retained to examine retrospectively. Donna Campbell wrote a long report entitled: 'Consideration to the Uniformity and Effects of the Fabric in the Shroud of Turin.'<sup>5</sup>



The report concluded: ‘There are signs in the Shroud sample that direct the notion of mending or reweaving of the actual woven fabric.’ In the days where we would mend a sock, stitches would go in and out of the material, often under the surface, to repair and stabilise the fabric. Donna Campbell went on in her conclusions: ‘Consideration to the black thread and its function. The suggestion that the thread could have been used to reinforce the fabric. No such thread is obvious in the control samples.’

Below left is an example of one of the black threads. There is a larger black thread in the centre of the full sample image (below right and with more detail page 8).



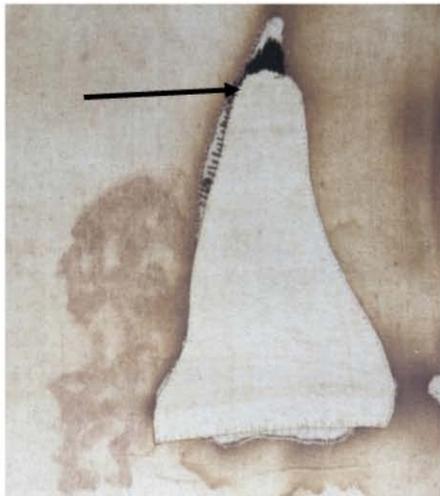
Black threads were known to be stitched on to the Shroud by Blessed Sebastian Valfrè in 1694 AD. The image, left, shows him on his knees doing the mending. He had a great devotion to the Shroud and it was noted that he wept as he worked. He said:

“The Cross received the living Jesus and gave Him back to us dead; the Shroud received the dead Jesus and restored Him to us alive.”

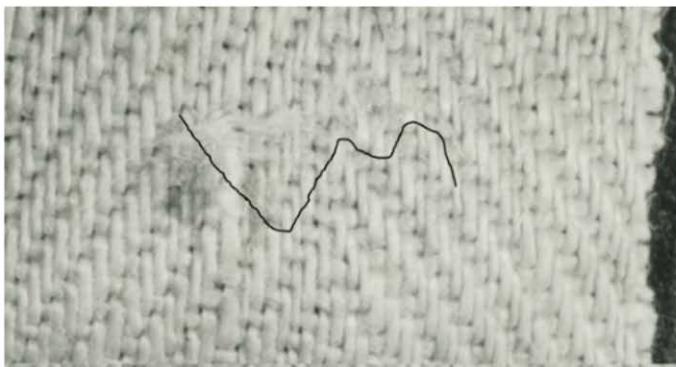
We have evidence of Blessed Sebastian's workmanship in Barrie Schwartz's beautiful copies of the Shroud. The large corner area that is missing (right) was stitched to the Holland cloth with black stitching.



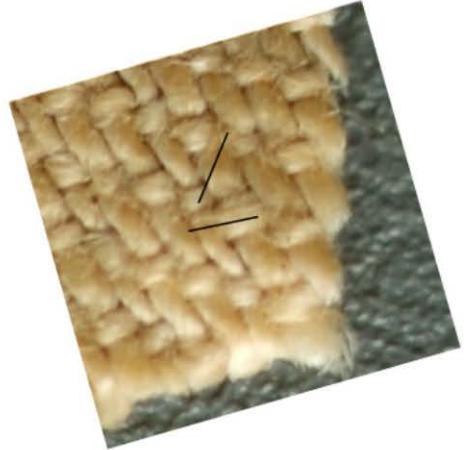
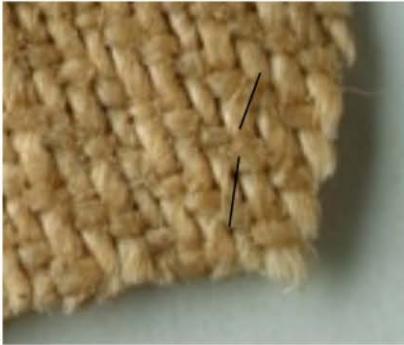
If you look at the area by the chest wound there are two patches, one on top of the other and beautiful, neat stitching, alongside Blessed Sebastian's handiwork. He was not good at sewing. It is believed that the nuns were very embarrassed by his workmanship, thinking people might assume they were responsible. It is logical to assume, given the Oxford photographic evidence of black threads that he had a go at mending the Shroud sample corner too.



However, other than a few threads, there is very little evidence of Blessed Sebastian's handwork in the corner taken for radiocarbon date, so this corner was probably re-repaired at a date later than 1694 AD. In fact, the Oxford photos show evidence of much less visible stitching; for example, the long off-white thread (below) runs across the surface of the sample. I have traced its course with the dark line. This cannot be original to the cloth.



Barrie Schwartz's photographs of the Arizona sample<sup>7</sup> identify the same type of thread. It is too thin to be part of the natural yarn. One thread rotated as Barrie moved the sample as he photographed (see black lines indicating the position of the white thread below).



### Invisible reweave.

Joe Marino and Sue Benford discovered evidence of invisible reweave in the radiocarbon corner of the Shroud in 2000 AD.<sup>8</sup> The Oxford photographs certainly suggest mending. If we can see stitches on the surface how many more are underneath the surface? And was their role to stabilise the corner?

Returning to the image p2575\_9 below. There is a black thread visible but there is also a lot of gluey looking contaminants. What were they? I researched this further and was

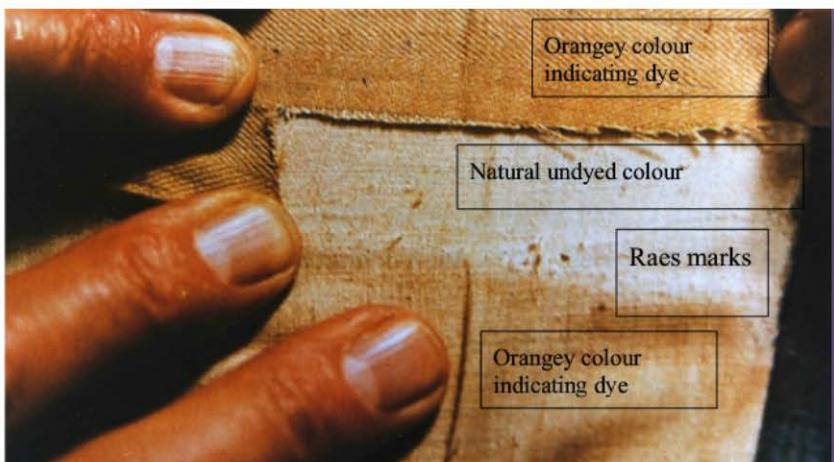


helped by some amazing Shroud scholars: Joe Marino, Barrie Schwartz, William Meacham, the archaeologist who helped devise the protocols for the radiocarbon date, and Paul Maloney.<sup>9</sup> From the resulting article, I would like to look next at the idea that the gluey substance visible on p2575\_9 is dye and gum.

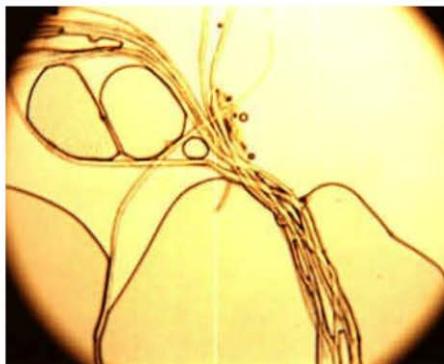
The images below show Professor Riggi cutting the sample from the Shroud in 1988 (image © Lino Salatino). Notice that the sample is not the same colour as the cloth near his ear. It is much nearer in colour to the burn marks, seen to his right, although we know the Shroud wasn't burnt in the corner because only two corners are missing. Here (below right) you can see a stiffness to the material and an orangey colour.



The picture below shows the cloth after the removal of the sample. Look carefully at the Holland backing cloth. You can see the indent where the Raes sample was removed in 1973. You can also see that the backing cloth is two colours; one the colour of undyed material, the other a more orangey stain. This can only be dye. What is significant is that the Shroud above the cut is the same colour as the dye. So that corner was dyed.



What was the purpose of the dye? Perhaps it was to make this area match the colour created by fire and douse water damage? That would create a consistent colour around the patches and missing areas of the cloth. What was the dye? Following the work of Joe Marino and Sue Benford, the great STuRP Shroud scholar Dr Ray Rogers discovered dye in the radiocarbon date corner and Raes sample. He widely published his results before he sadly died in 2005. The dye he discovered in the fibres was madder root seen in its raw form (right). Below are images of thread 14 from the Raes sample taken by Rogers. They show the fibres before (left), and after (right), the application of 6N of hydrochloric acid.<sup>10</sup> The laboratories preparing the Shroud samples in 1988 did not know dye was present and did not use anywhere near that concentration. They used around 1M HCl.



This is thread 1 from the Raes sample showing a splice of linen and cotton. The cotton (the more orangey left end) has absorbed the dye better than the linen on the right. I was blessed at the conference at St Lewis to sit by Robert Villarreal who discovered the two ends of the thread were different materials bound together by a gum.<sup>11</sup>



What was the gum? Ray Rogers suggested several alternatives. I went to see Teresinha Roberts,<sup>12</sup> a world-wide expert on plant dyes and she explained that linen is very hard to dye. First, it needs to have a mordent of alum to make the fibres receptive to dye. A combination of madder root dye and gum tragacanth (right), is then used to bind the dye to the mordant. Other less adherent gums do not work with linen very effectively. Ray Rogers had suggested tragacanth.<sup>13</sup>



Gum Tragacanth is made up of two different chemical components. The first is tragacanthin which is soluble in water. Rogers noted that some of the gum was water soluble. It also contains bassorin which is insoluble in water and swells to form a gel. Is this the gel that is so clearly visible on the surface of the Oxford photograph of the Shroud sample? Gum tragacanth is only removed from material with concentrated hydrochloric acid.

Oxford University photographs appear to endorse Ray Roger's research. This means the sample from original Shroud material was tested alongside mending repairs done in 1532, 1694 and later, spliced cotton fibres, and a stiffening concoction of dye and gum which had not been identified and was not removed.



Dr Ray Roger's conclusions said: *'If the Raes/radiocarbon sample was stained with a well-known colouring composition (and no other part of the Shroud is), the radiocarbon sample cannot be valid for dating the time at which the cloth was produced.'*<sup>14</sup>

All this was set out in detail in the film I made with David Rolfe, *A Grave Injustice*. When presented with the film's conclusions Professor Ramsey of Oxford replied that he did not believe there could be sufficient contaminants to make a 1,000 year difference.

Returning to the basis of historical knowledge and the poem of Rudyard Kipling, I had a letter printed in the Catholic Herald in August 2017 (appendix 3). It asked the question – where are the sources and provenance for a Medieval Shroud? On the back of the letter, I wrote to the head of Archaeology at Oxford, Professor Julia Lee-Thorp. She is

the head of one of the top-ranking Schools of Archaeology in the world. I asked the following: 'If you continue to endorse the carbon-14 results for the Shroud perhaps your department could supply me with the historical sources which underpin a medieval date for this extraordinary cloth. Similarly, as Professor Tite argues the image on the Shroud was created by "bodily fluids," please could you tell me if you are aware of any other archaeological examples of this process?' I received a reply below:

'Radiocarbon dating is based on radioactive decay of  $^{14}\text{C}$  as you probably know; it's based on a pure physics phenomenon. The amount of  $^{14}\text{C}$  decays over time and we measure the remaining  $^{14}\text{C}$  by accelerator mass spectrometry to calculate age. I should also add that samples undergo rigorous cleaning to eliminate any carbon-containing contaminants, nothing else matters. There is no ambiguity about this particular result and it is not a "position" as you suggest in your letter.

If you are unhappy with the radiocarbon date, you should consider commissioning another dating programme; there are several excellent radiocarbon units in this country and round the world. We have never pretended to be resolving all the possible problems related to the shroud; we have merely analysed it for  $^{14}\text{C}$  and provided the result. I consider the matter closed.'

I appreciate Oxford academics are frustrated by Shroudies like me. However, she did not answer any of the 5 Ws or provide any sources or provenance to underpin a medieval Shroud. So where is the history? Has historical study been completely overtaken by science? I tried again and wrote to the Office of the Vice-Chancellor, Professor Louise Richardson, asking the following: 'If the Shroud is medieval as the University claims, what is it? Where is the history? Where are your reliable sources? Secondly, how trustworthy is your methodology and physics? How can you claim to understand the sample tested when no textile, chemical, microscopic or bacterial reports were undertaken?' I received an answer from the Senior Executive officer Dr Bethan Williams:

'I am writing in response to your recent letter to the Vice-Chancellor. I have also spoken with Professor Lee-Thorp, (with whom you have already communicated) about the matters you raise in regard to the Shroud of Turin.

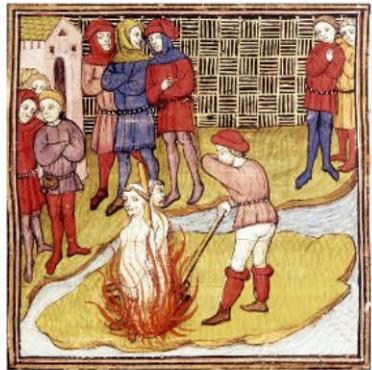
As Professor Lee-Thorp made clear in her letter, we do not claim to have answers to all the questions which the Shroud and its study may raise. However, the results of the radiocarbon dated undertaken by the Oxford Accelerator Radiocarbon Unit are not ones we can refute. This being the case we have no further comments to make at this time, and consider our correspondence in this matter closed.'

Oxford University is one of the finest academic institutions in the world but personally I felt the lack of answers did not do justice to its reputation. Let's return then to the one hypothesis from Oxford University staff that we have; Michael Tite's. *"It wrapped a*

*Medieval Crusader.*” And “*bodily fluids resulting from the stress of a crucifixion react and cause this discolouration and ultimately a certain degree of decay in the Shroud.*” We have already looked at some of the problems with this hypothesis but there is another problem. The hypothesis is very similar to the Freemasonry teaching about the Shroud. Professor Tite denied he is a Freemason in the BBC interview<sup>4</sup> but the similarities deserve some examination. The Freemasonry understanding of the Shroud is explained in the books by Robert Lomas, a physicist at Bradford University and Christopher Knight: *The Hiram Key*; *The Second Messiah*. A brief synopsis of the argument given by Lomas was reported in The New Scotsman:

“The cloth was used to wrap Jacques de Molay, the leader of a monastic order known as the Knights Templar.” “The image on the Shroud was created through a process known as the Volckringer effect, where heat, sweat, acids and oxygen-free radicals scorch the cloth.”<sup>16</sup>

So, who was Jacques de Molay and is there any historical credibility in this hypothesis? Jacques de Molay was a Crusader; head of the Knights Templar, who are believed to have been custodians of the Shroud of Jesus. He was arrested on 13<sup>th</sup> October 1307 AD in France and tortured about the secrets of the Knights Templar. Freemasons believe that he was crucified on the night of his arrest and, surviving the crucifixion, created the Shroud of Turin with sweat and other bodily fluids. Jacques de Molay was burnt at the stake in 1314.



However, was he the creator of the Shroud? There is no historical evidence Jacques de Molay was crucified. There are no reliable sources. Secondly, if humans create images on cloth why aren't there millions of examples? Finally, here is a contemporary picture of de Molay being burnt at the stake. He had short hair and a tonsure. He does not look anything like the Man of the Shroud.

Oxford University deserves respect, so this research has been disappointing. However, there is now huge cause for hope. In 2019 the very eminent Oxford University journal, *Archaeometry*, published the article: *Radiocarbon dating of the Turin Shroud: New Evidence from Raw Data* (see right). The authors of the paper are: Dr Tristan Casabianca; Prof. Emanuela Marinelli, Dr. Giuseppe Pernagallo, Prof. Benedetto Torrisi.

For me it is highly significant that Oxford University Archaeology Department chose to publish this research. A new dawn may be opening for Shroud research. However,

a few questions remain. The logical next step would be to entrust the Shroud to another radiocarbon dating. But is it wise to rush headlong into a second test? The leader of STuRP John Jackson said at the St Lewis conference that if we had another erroneous test on the Shroud no-one would take it seriously again. If we do not understand the mechanism for image creation how can we be sure we know the cloth's other secrets?

In my opinion, there are a few other points to consider. The involvement of Freemasonry in the events of 1988 had been raised by Cardinal Ballestrero, the former Archbishop of Turin, in a newspaper article: 'At this point, Father Cavaglia asked Cardinal Ballestrero whether Freemasonry had not played a certain role in all this campaign. "Without question," came the Cardinal's reply.<sup>17</sup> Freemasonry is less powerful than it was in 1988, but it has not yet disappeared.

Second, is there currently a level playing field in academia? Any future test would depend on the neutrality of the scientists involved. University departments are increasingly liberal and anti-Christian. Would they want to appear to validate Resurrection?

Finally, turning the whole debate on its head, there is a final question: Why did God allow the radiocarbon date results? In other words, were there any benefits to the Shroud from the results? There are a few advantages. First, Jesus usually rejected the need for proof and asked for faith from his followers. Ultimately many people see radiocarbon date as the means of proof for the Shroud. Second, the results allowed restoration of the cloth to take place in 2002 AD. This restoration was controversial, but it had the advantage that the old backing cloth which was darkening was removed. This has made the image clearer to see. Finally, the results allow the Shroud to hide in plain sight. Jesus said "Seek and you will find." Anyone can find this image today with a quick internet search. At the same time, the Shroud is, to some extent, protected from those who would wish to destroy it. The paper, Treasures of Constantinople, considers the history of the Shroud in Constantinople where it was often in danger of destruction.

To conclude, may Oxford University continue to be an outstanding University on the world stage. I hope, at some point, the University will completely distance itself from the events of 1988 in relationship to the Shroud of Turin.

#### References:

All Shroud images: ©1978 Barrie M. Schwartz Collection, STERA, Inc.

For all references see the copy of this paper at [www.bstsnewsletter.com](http://www.bstsnewsletter.com)