

## **Dating and Formation of the Shroud by Peter Carr March 1999**

### **Section 1 Background to the Author**

My first contact with The Shroud of Turin was of seeing a small black and white picture of it's face in a newspaper in the 1950s or 60s. I do not recall the news comment, but my reaction was to dismiss it as of no consequence, and to think that the idea of there being a human image on the shroud was similar to people 'seeing things' in a fuzzy patter as in old fashioned wall paper.

I later came to take the subject more seriously after reading Ian Wilson's first book on the subject (ref 1), and seeing the BBC television programme called "The Silent Witness".

Some time after this, I had the opportunity to invite Ian Wilson to my home town during the 70s, when he gave an excellent talk, well supported with slides. Thereafter, I kept in touch with Ian Wilson prior to and after the Carbon Dating Tests in 1988.

My own background is that of a scientist qualified in Physics, and having spent many years in charge of technical laboratories carrying out research and development into electronics and underwater acoustics. In directing the work in these laboratories, I have had to exercise technical judgment and take decisions on topics where information was incomplete. To this end, I am experienced in the reading and examining of dispositions from other researchers and forming conclusions. In doing this, one had to hold all the key points in mind, balance the probability of one 'fact' against another and look for self consistency in the result.

It is this expertise that I bring to the topic of The Turin Shroud. I am dependent on the measurements and observations of others, both scientists and historians. I generally accept the publications at their face value, although I do not generally accept the conclusions that are drawn, because these are usually subjective.

I have seen the wrong conclusion drawn from data, I have not been immune from this problem myself. But my approach is to use conceptual thinking, deduce possible solutions, and then offer them for open criticism. And this is the approach I use when looking at the Turin Shroud

To complete the introduction, I went with my wife to the exposition in 1998, and took the opportunity to visit the museums and other relevant exhibits. Also to keep the concepts of dates in perspective, we went to the Egyptian Museum to see items from four millenniums before Christ.

### **Section 2 Carbon Dating Tests**

During the years leading up to the tests, my source of information as to when and how these tests were to be carried out was Ian Wilson. His response to my queries about when the dating would take place, was to answer that the protocols were still being agreed, as the seven or eight laboratories were still being evaluated. Then the go ahead was given and the specimens were sent for tests as reported in reference 2. My thoughts at this stage were that a provisional date had already been established. My reasons for this are quite simple, as any technical manager or project leader who had samples of the unknown in his possession would take advantage of the prolonged evaluation period to get an 'early look' at the outcome. The Vatican team had in their possession the shroud sample taken during the 1970's examination, when

non destructive testing was performed. Therefore they had the opportunity to be well informed before any news broke about the most important relic in Christendom.

When the testing was complete, the scientist reported their findings in reference 2 giving the age as 1269 to 1390, therefore the cloth was mediaeval. This was the limit to their remit, to date the cloth. But they exceeded their remit by making comments about the nature of the cloth, ie that the shroud was a mediaeval forgery. In making such a sweeping statement, they showed complete arrogance of other disciplines and a blind faith in a piece of technology. No self respecting scientist would be so bold. They ignored, or were ignorant of the wealth of historical information that shows that a cloth of some form has been in existence for many centuries, and it predates the carbon dates. The carbon dating information should have been presented along side all other information, and an objective discussion taken place.

### **Section 3 Historical Information**

The most comprehensive account of the historical data is contained in Ian Wilson's recent book reference 3 entitled 'The Blood and the Shroud'. This has a chronology of all the known historical references to a shroud or cloth, starting at AD 30 and continuing until the present day.

But at this point one must introduce the observation about a sketch of the entombment scene in the book called Codex Pray held in a church in Budapest. The artist illuminates the manuscript with a sketch depicting Jesus laid out in death with hands crossed. This sketch is a crude line drawing of Jesus being wrapped in a cloth exactly as it would have been in the shroud. It shows the distorted hands emphasising the absence of thumbs. The sketch, which is reproduced in Ian Wilson's book, also shows the presence of the 'Poker Holes' which appear on the Turin Shroud. The date of the Pray manuscript is 1192.

Other evidence is also available, such as a Byzantine ivory circa 1100 in the Victoria & Albert Museum, which depicts Jesus laid out in death with Shroud-like crossed hands. There is also a fresco in Winchester Cathedral, circa 1225, which shows Jesus being taken down from the cross, and in the background, a man holding a shroud like cloth to cover him as with the shroud.

With this information available and the carbon dating results, a objective person would consider three possibilities:-

a) That the shroud was produced from the codex Pray manuscript (or other simple sketches). But this is difficult to accept, as the manuscript has a very crude sketch showing no fine artistic detail, and also no dorsal view.

b) Both documents were produced from a common source, an earlier source as yet unknown, and unidentified. But this widens the mystery to find yet another source.

c) The Pray manuscript was produced from the Shroud, and therefore the Shroud must have been in existence prior to 1192, and therefore the carbon dating results are wrong.

Many items presented in Ian Wilson's book, ref 3, to show that reports of a cloth bearing the imprint of Jesus goes back many centuries, and therefore we should take the carbon dating results as tentative at the best.

#### **Section 4 Possible Sources of Error.**

Once the furore had died down following the publication of the carbon tests, people applied their minds to examine how and why the dating could be wrong. There have been a number of conspiracy theories, the strongest one being that the shroud samples had been replaced by samples taken from the Cope of Saint Louis of Anjou, which is known to date from 1300. It is unfortunate that the procedures used by the team in taking the samples left them open to this type of criticism. But it not a case that withstands closer examination, as samples taken from the Shroud are readily recognisable. It was most unfortunate that the scientists conducting the test did not have an experience PR man alongside them to gauge public reaction before the event. Scientists in high places are strangely naive.

**Bioplastic Coatings.** The strongest challenge to the carbon results has come from the work of Dr Leoncio Garza-Valdès on the grounds that the fibres of the Shroud are covered with a bioplastic coating which increases the level of Carbon 14 in the threads, which therefore skews the dating.

This impurity having come about by continuous handling over the centuries. This is an area of research worth pursuing. It does mean that any fabric sample sent for carbon testing should be examined for the presence of such a coating, even the reference samples used in the 1988 tests.

I have always considered the dating that was obtained on the St Louis cope as indicative that the measurement technique of the AMS equipment was accurate. In other words it measures the correct level of C14. This is not the same as saying that the overall dating process was correct, as will be seen from the next section. But this implies that there was no significant bioplastic impurity on the sample from the Cope.

**Enhanced Carbon 14.** This is the hypothesis that I currently favour. Put in it's simplest terms, it suggests that during the formation of a shroud there is a radiation process that enhances the level of the radioactive carbon isotopes. The evidence in support of this is the markings on the shroud produced in 1981 at the Hospice at Thornton reference 4.

I was shown this information by Ian Wilson at a talk in Templecombe. He showed a slide of the shroud that had markings of the back, thighs and part of the neck of a man. But the most significant aspect was the obscuring of the markings by the left arm and hand which was placed underneath the body. At the lecture I commented that this indicated a 'radiation from the body' which was being partially obscured by the arm and hand. Further information on the nature of the image on The Turin Shroud indicates that the fibres have been damaged as if by a scorch. Also the work by Jackson & Jumper purport to show a radiation law from which they can regenerate a three dimensional picture.

*Now if there is a form of radiation during the formation of a shroud, and if it can effect the level of carbon isotopes, then it immediately renders the the method of carbon dating as inadmissible for dating of shrouds.*

Some interesting work has been done along these lines. For example the work done by Dr Kitty Little at the UKAERE during the 1950s. By radiating fibres with neutrons she observed a change in colour of the fibres to that of a straw colour as on the shroud. She remarked that the radiation would have the effect of forming extra carbon 14 on the fabric.

More recently some work has been done by French scientists and reported on the web site set up by Barrie Schwartz reference 5. This web site led me to the correspondence of Rinaudo and Rouvillois. Mr Rinaudo had undertaken some experimental work to show that a flux of  $9 \times 10^{12}$  particles per square cm would raise the level of Carbon 14 by 25%. Which is sufficient to skew the elapsed time measured in the carbon dating from 2000 years to 700 years. He also showed that such a radiation flux created a reddish brown marking on the cloth. Mr Rouvillois, who is a nuclear scientist, now retired, did some simple calculations to show that such a radiation flux could be produced from a small amount of Deuterium, although he was not proposing that this was necessarily the reaction. It was a calculation to show that sufficient energy is contained in quite small masses of material. This work is of sufficient interest that I have produced extracts below.

### **Section 5 Reported Scientific Work**

*<A Point Of Nuclear Physics About The Shroud Of Turin by Gildas Rouvillois, Consulting Scientist  
Louveciennes~Paris, France*

A paper published in august 1995 by the Reverend Laurentin in the weekly "Famille Chretienne" (in French) describes a tentative explanation of the much controversial datation of the Shroud by J.B.Rinaudo, who is both a Catholic priest and a teacher of physics. Rinaudo surmises that simultaneous fluxes of protons and neutrons could explain at the same time the imprint on the cloth (by the protons) and the 13-century slip of time of the carbon14 nuclei (by the neutrons).

Through experimentation conducted in the CEA\* laboratories, Rinaudo evaluates at  $9.10^{12}$  (nine times ten to the twelfth) particles per square centimetre the necessary fluxes, and suggests that they might originate in the spontaneous disintegration of the deuterium nuclei contained in the body of the man in the shroud.

To irradiate a cloth of 5 square meters (order of magnitude) with a flux of  $9.10^{12}$  particles/cm<sup>2</sup>, one needs  $9.10^{17}$  reactions (using only a few micrograms of deuterium, a tiny part of the body content ), giving off an energy of  $3.28.10^{18}$  MeV, or 525 kilojoules ( to simplify our point, we neglect in a first approximation the contribution of the highly energetic secondary reactions with reaction products He<sup>3</sup> and T ).

Translated in equivalent TNT, this energy amounts to 125 grams of high explosive. To explain the shape of imprint on the cloth, the source of radiation should be punctual rather than distributed. So, this energy is enough to cause a conspicuous "flash", but also a severe blow to a body already bruised and wounded by the flagellation and the crucifixion. As a standard of comparison, the Israeli secret services burst off terrorist Ayache with 50 grams of explosive concealed in his Motorola phone.

As regards the C14 datation itself, besides the 3 labs officially in charge of the analysis (Oxford, Tucson and Zurich ), a 4th lab got independently the same results (years 1260/1390). I mean the Centre d'Etudes des Faibles Radioactivites ( joint lab CEA/CNRS\*\*), of which one can hardly question the experimental know-how and the scientific righteousness.>

\*\*\*\*\*End of Extract \*\*\*\*\*

It is a very simple matter to show that if the levels of Carbon 14 had been increased at the time of formation of the shroud, then the Carbon dating method could not be used. In fact what is crying out to be done is some checks to be made on shroud cloths to see if there are enhancements.

The British were presented with an ideal opportunity to do this by checking the levels of carbon isotopes on the shroud produced in the Thornton Hospice in the early 80s. I made this point to Dr Cliff of The British Society of The Shroud, but they did not respond to the opportunity.

## **Section 6 Future Work**

Clearly what we need now is to get our hands on another shroud and carry out checks for enhanced carbon 14. This is easier said than done. How often do shrouds appear ? and how often is there a serious thinking scientist available to put in hand well thought-through tests ?

We may have to wait some time for this to occur, but it means that one must be alert to this possibility.

In the mean time, an interesting event has recently occurred. A report in a December 98 issue of The Daily Telegraph (London), reported an occurrence of "Spontaneous Combustion" at Honfleur in Normandy. This was discovered on November 17 and from the limited record, it seems to follow the classic account of Spontaneous Combustion; in that the woman's body was almost completely consumed. Other items in the room including sheets were untouched. It was reported as having striking similarities to the incident that took place in Florida in 1951.

Now I have no experience of this phenomenon, but it seems to me that if a body can generate intense heat from within itself, then it is possible to cause shroud imprinting !

This is an important question that should be put to the test. Therefore the question I pose :-

< Is there any evidence of enhanced carbon isotope levels in the materials surrounding the body at Honfleur >

I have put this question to a number of people including Gildas Rouvillois in Paris. Mr Rouvillois has made a request to the French police scientists and has offered his services as a consultant.

I am very much dependent on Mr Rouvillois for these tests to be carried out. I have no contact in the scientific or police departments in France.

## **Section 7 The Historical Aspect**

What has been discussed in the previous sections has been of a factual and logical nature. But this does not mean that I consider this to be totally a scientific topic to be worked at until it finally yields an answer. On the contrary, I believe that the scientific pursuit of this may encourage the younger generation to look at the historical life of Jesus and appreciate his death and it's purpose with more understanding than appears at present.

I also believe that there is an urgency as we approach the start of a new millennium, in that we don't carry forward a baggage of unnecessary misconceptions and teachings that may hold people back from an understanding of Christianity.

After the 1988 carbon dating, when I was stunned by the result, I rethought my approach to the politics, because I was convinced that the Vatican team knew what answers were going to come from the dating test before the samples were sent. After all, any project manager would do the same. They had in their possession samples of the Shroud from the 1970s tests, and it would have been extremely simple to slip these into the validation tests. The news of the dating would then not come as a surprise to the Vatican and they could be well prepared.

So my question to myself was, why did the Vatican allow this to go ahead ? Did they wish to wait for a more propitious time to prove the authenticity of the Shroud such as the start of the new millennium ?

But there are some difficult concepts to absorb if the Shroud is genuine. There is the simple problem of the nails going through the wrists- not a big problem. There is the problem that the crucified body was probably facing the wood work ! This puts out of date all the crucifixes in Christendom. Although I note that in Turin in 1998, they got round this by showing the crucifixion with the arms brought behind the cross piece.

Then there is the most serious problem that the shroud was probably formed at the instant of death when the body was lying in the tomb, and death did not take place on the cross. This means that many clergymen would need to tear up their past Good-Friday lecture notes.

So there are some important factors to be reconciled if the Shroud is ever proven to be the genuine article. But it may be that in such a re thinking of the events of the crucifixion and resurrection, they may be put them in a form that modern man may more readily understand and accept.

For my part, the explanation and historical reworking has to begin in the events leading up to the triumphal entry into Jerusalem, which was totally counter to the portrayal of Jesus as a man of spiritual persuasion without worldly ambitions. Some pressure must have been put upon him to undertake the journey with its concomitant actions, which put him in direct conflict with the Jewish authorities. After that he retired to the garden of Gethsemane to review the dilemma in which he had placed himself, and he agonised over the choices facing him:

These being:- a) to become involved in an armed struggle with the authorities, in which case he would be no different from other insurrectionists.

b) to steal away quietly, in which case all his supporters would be disheartened and the movement would collapse,

or c) to take the course of action which he took, which was to resort back to his basic character as a spiritual man and to offer only passive resistance and rely on moral strength.

This is what he did, with the well recorded outcome. Then when lying in the tomb, still just about alive, he realised how his mission was close to failure, but by an extreme act of will, he released himself spiritually from his body in order to appear to his friends to comfort and guide them. In this act of release, the Shroud was formed.

People can argue about the loss of the physical body, but the important point for Christians is the continuity of the spirit and its presence felt by the awaiting community. This would be a concept which Christianity could restate and take forward into the next millennium.

## **Section 8 References**

1. The Shroud of Turin by Ian Wilson 1978 published by Gollancz
2. Radiocarbon dating of the Shroud of Turin  
(Nature vol 337 16th February 1989)
3. The Blood and the Shroud by Ian Wilson 1998 published by Orion
4. Shroud produced at the Thornton Hospice Liverpool.  
Information from Ian Wilson
5. The Shroud of Turin Website [http:// www.shroud.com](http://www.shroud.com)