

Carbon 14 Dating Invalidated?

Ray Rogers' Article

When I checked Barrie Schwartz's web site for the ninth anniversary update in January of this year, the headlines jumped out at anybody who was looking - Prominent Los Alamos Scientist Proves 1988 Carbon-14 Dating of the Shroud Used Invalid Rewoven Sample. With the kind permission of Barrie Schwartz, I quote his own text on the discovery:

A new, peer reviewed scientific paper by Raymond N. Rogers, retired Fellow of the Los Alamos National Laboratory was published on January 20, 2005, in the latest issue of the journal *Thermochimica Acta*, Volume 425, Issues 1-2, Pages 189-194. Titled "Studies on the radiocarbon sample from the Shroud of Turin". The paper concludes, "As unlikely as it seems, the sample used to test the age of the Shroud of Turin in 1988 was taken from a rewoven area of the Shroud. Pyrolysis-mass spectrometry results from the sample area coupled with microscopic and microchemical observations prove that the radiocarbon sample was not part of the original cloth of the Shroud of Turin. The radiocarbon date was thus not valid for determining the true age of the Shroud."

In a press release earlier this week, Rogers stated, "The radiocarbon sample has completely different chemical properties than the main part of the Shroud relic. The sample tested was dyed using technology that began to appear in Italy about the time the Crusaders' last bastion fell to the Turks in AD 1291. The radiocarbon sample cannot be older than about AD 1290, agreeing with the age determined (for the sample) in 1988. However, the Shroud itself is actually much older."

As a result of his own research and chemical tests, Rogers concluded that the radiocarbon sample is totally different in composition from the main part of the Shroud of Turin and was cut from a medieval reweaving of the cloth. Rogers was also the leader of the chemistry group for the Shroud of Turin Research Project (STURP), the scientific team that performed the first in-depth scientific examination of the Shroud in 1978.

Almost immediately after the results were released in 1988, Shroud analysts questioned the validity of the sample used for the dating. In fact, one researcher with considerable experience in radiocarbon dating ancient artefacts, University of Hong Kong based archaeologist William Meacham, presented a paper in 1986, two years before the infamous dating, outlining his concerns. Titled, "Radiocarbon Measurement and the age of the Turin Shroud: Possibilities and Uncertainties," it suggested that contamination could easily skew the results. Unfortunately, it went largely unnoticed. In light of Rogers' recent work, it is undoubtedly well worth re-reading.

Ray Roger's paper cannot be reprinted here due to copyright reasons, although an article written by John L. Brown, a professional microscope expert who independently examined the samples, now follows. Once again, I am grateful to Barrie Schwartz for his generous permission to reprint the article and the accompanying photographs. (Note from Barrie Schwartz: Rather than repeat the John Brown article I have simply created a direct link to it here):

[Microscopic Investigation of Selected Raes Threads from the Shroud of Turin](#)

By John L. Brown

The news about the (Rogers) article rapidly made the press all over the world, although in marked contrast to 1988, when the carbon dating results were headlines, scientific evidence in favour of the Shroud's authenticity was relegated to a couple of paragraphs inside the papers.

Reactions from Italy were somewhat reserved. Following is the official comment released by the Centro Internazionale in Turin:

The paper recently published by Dr. Raymond N. Rogers (Thermochimica Acta 425 (2005) 189-194) makes some interesting observations. The work claims that the Shroud samples taken in 1988 for the radiocarbon dating and the samples taken in 1973 in contiguous areas by Prof. G. Raes present anomalies in their composition. According to the author, on the cloth there are "plant gums" with a polysaccharide structure and coloured compounds deriving from interactions between Madder (alizarine) and aluminium ions. These coloured additives were apparently used after a reconstructive restoration of the cloth to make the colour of the new fibres the same as those of the Shroud.

Two remarks are necessary here: 1) The finding of the presence of extraneous coloured substances (pigments and real colouring agents which were used in the past for dying cloth), even though they are restricted to the site in question, is a new finding. Indeed Rogers himself proved the absence of any type of pigment and colouring agent on the fibre samples he took in 1978 from several different areas of the Shroud cloth. The observation is to some extent in line with the IR spectrometry findings obtained by Prof. Alan Adler. Indeed

Prof. Adler stated that the site where the samples had been taken for the radiocarbon dating might have been contaminated by extraneous substances.

2) The hypothesis that the site where the samples were taken might have been subject to repair work to reconstruct the cloth in mediaeval times, although strongly suggestive, has not been confirmed by the textile experts and researchers who have examined it. The most recent tests (made in 2002) were carried out to discover any possible traces of such work in the light of similar hypotheses already made several years ago. Consequently, caution is obligatory in order to avoid drawing rash conclusions that it is not possible to demonstrate scientifically.

In conclusion, Dr. Rogers' observations are very interesting and certainly provide a basis for further investigation and studies on the chemical characteristics of the cloth and its possible lack of homogeneity.

Some reactions were much more outspoken in their criticism of Rogers' paper. BSTS member Marie Claire Van Oosterwyck-Gastuche states "My conclusion is that not only the medieval age measured on the Shroud is false, but the whole method is wrong". In her excellent and highly outspoken book from 1999, *Le radiocarbone face au Linceul de Turin. Journal d'une recherche*, she step by step shows how the whole carbon dating method is open to questioning, and how its reputation for infallibility is based on mistaken presumptions. The book was reviewed in BSTS 50, in 1999, and was separately described by Paul Maloney as "THE authoritative publication on the radiocarbon dating problem ... it has no equal in the world". I quite simply have not had the time to read the book myself yet, but I will do as soon as possible.

While the debate was raging, news came through of Ray's death. He had been terminally ill for some time, although even so, such news always comes as a shock. An interview with Ray was published in the last BSTS Newsletter, in December 2004, and in tribute the same introduction to his life and work can now be added to the many messages in his honour on Barries Schwartz's web site (www.shroud.com).

Ray Rogers 1927 - 2005

Raymond N. Rogers was born 21 July 1927 in Albuquerque, NM. He was group leader of an explosives research-and-development group at the University of California, Los Alamos National Laboratory, was elected Laboratory Fellow in 1981, and retired in 1988. He was appointed Director of Chemical Research for the Shroud of Turin Research Project in 1978, applying rigorous scientific methods to the study of the relic. He took part in the Shroud of Turin Research Project (STURP) studies in Turin in 1978. He served on the Department of the Air Force Scientific Advisory Board from 1987 until 1992 with the equivalent rank of Lt. General, providing scientific inputs to the Air Force.

His major research interests were explosives safety, super-energy explosives, low-intensity conflict (non-violent war), energy resources, agricultural chemistry and soils, applications of chemical methods to the study of archaeological samples, and applications of chemical science to intelligence operations. A short summary of his work on explosives safety can be found at the following web site: <http://home.att.net/~rnrogers>. A partial description of his work on the Shroud of Turin can be seen at <http://www.shroud.com/pdfs/rogers2.pdf> and several short comments at the same location.

He published popular articles on dogs and firearms as well as many technical papers on chemistry, archaeology/anthropology, soil science, and energy. He served as an expert witness on several legal actions, and he has been consulted in many accident investigations.

And so where does that leave us? As is usual with an object so hotly debated as the Shroud of Turin, nothing is left quite clear. Just as when the Carbon 14 dating results were announced in 1988, there were opinions both in favour and against. One thing is clear - one of the main arguments used in the 1990's by those convinced the Shroud was medieval was that no serious refutation of the dating had been published in a peer-reviewed scientific journal. No matter what we finally decide about Ray's article, this argument is no longer valid.