

A Silent Witness

Major New Find Bolsters Shroud of Turin Believers

by Shafer Parker

LOS ALAMOS, N.M. — New research provides evidence that the 1988 radiocarbon testing of the Shroud of Turin was done on material added to the shroud in the Middle Ages.

Mention the Shroud of Turin at almost any public gathering and someone is sure to remark that carbon-14 testing in 1988 by three separate laboratories in Switzerland, England and the United States "proved" it to be a fake relic from the late Middle Ages. Less well known is that questions were immediately raised regarding the tests' reliability. Shroud researchers wanted to know why only one material sample was used. That created a situation in which one test was done three times. And why was the sample taken from an area near the edge prone to contamination from repeated handling? That sample was also near a water stain and a charred area from a cathedral fire in 1532.

Now chemist Raymond Rogers, a fellow at the Los Alamos National Laboratory in New Mexico, has published research showing the carbon-14 testing done in 1988 was, in fact, not done on the original burial cloth, but rather on a patch that in the Middle Ages had been cleverly re-woven into the border area, thus creating an erroneous date for the actual shroud. In an article published in a recent edition of the peer-reviewed scientific journal *Thermochimica Acta*, Rogers further reveals that he has found a way to date the linen material in the main part of the shroud to somewhere between 1,300 and 3,000 years old, making it much too old to be a medieval forgery. Rogers found that flax, the plant from which linen fibers are derived, contains a chemical compound called lignin, which, as it decomposes over time, produces another substance called vanillin. The amount of vanillin left in linen material can serve as a rough guide to its age. The backing cloth, which was sewed onto the shroud in the 16th century, showed about 37% of vanillin left in the flax growth nodes, a result consistent with other linens from the Middle Ages.

But the complete disappearance of all traces of vanillin from the shroud proper, a characteristic of linens discovered with the Dead Sea Scrolls, indicates a much older age than radiocarbon dating did. Nevertheless, Rogers cautioned that he has not proven the shroud's age with any degree of certainty. "My approach to age testing has been blown all out of proportion by the news media," he said. "I can't speak with precision, since I don't know the temperature at which the shroud has been stored all these years. But I can say that, unless it was stored in an oven, it's sure as heck older than 400 or 500 years."

Rogers argued that the shroud itself is the best proof that the 1988 testing was erroneous. As an original member of the Shroud of Turin Research Project, an international team of scientists that examined the shroud for an intense five-day period in 1978, he had taken 32 adhesive-tape fiber samples from all areas of the cloth, including patches and backing cloth. He later obtained samples from the material used for the carbon-14 testing. Microscopic examination and chemical testing showed that, unlike the main portion of the shroud, the radiocarbon sample had been dyed, using a technology that began to appear in Italy about the time the Crusaders' last bastion fell to the Turks in 1291, possibly to make it blend with the older material into which it was woven. The "radiocarbon sample contains both a gum/dye/mordant-coating and cotton fibers," Rogers wrote in his journal article. "The main part of the shroud does not contain these materials."

Msgr. Giuseppe Ghiberti, president of the Shroud Commission of the Archdiocese of Turin, disputed Rogers' findings, telling an Italian interviewer that during an official restoration of the shroud two years ago the backing was removed and "there [was] no sign of a mend." Msgr. Ghiberti also noted that Swiss textile expert Mechthild Flury-Lemberg, who oversaw the shroud's recent restoration, had "examined the shroud" and had "absolutely not seen any sign of added textile." To which Rogers replied, "She says she looked at it closely. But she did no chemical analysis, no spectrometry, no microscopy. If she had just looked at the [radiocarbon-tested] fibers under a microscope, she would have seen they were totally different from the main part of the cloth. But she didn't go to that trouble."

Rogers said he undertook his research because he was skeptical of claims that newer material had somehow been seamlessly woven into the shroud. "I thought I'd prove the re-weaving claims were nonsense," he said. "It's embarrassing to have to agree with people from the lunatic fringe who made these pronouncements." But facts are

facts, and Rogers has the photographic proof of a spliced thread from the radiocarbon material in which "the two ends of the splice are completely different. One is fluffy and white; the other end is stained and tightly twisted."

Embarrassing as Rogers' work may be for those responsible for the 1988 radiocarbon tests, it is nevertheless forcing a second look at the evidence. In an e-mail interview with the BBC, Msgr. Ghiberti stated that the Pope himself would have to rule on whether further tests would be allowed in light of the new information. But in an official comment on Rogers' work, Msgr. Ghiberti later stated that while "caution is obligatory in order to avoid rash conclusions," he had concluded that "Dr. Rogers' observations are very interesting and certainly provide a basis for further investigation and studies on the chemical characteristics of the cloth and the possibility that it isn't all the same."

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Shroud Basics

The Shroud of Turin is a large sheet of fine linen 14 feet long and approximately 3 1/2 feet wide, containing the life-sized negative image (a concept not understood until the invention of photography) of a crucified man, front and back.

For many centuries the shroud has been venerated as the actual winding sheet that covered Jesus' body after his death and before his resurrection. Its first documented display came in the French village of Lirey in 1357, fitting nicely with the 1988 carbon -14 tests that established the artifact's possible dates as ranging between 1260 and 1390, and inadvertently adding weight to the theory that the shroud had been created during that period. But historians have begun to piece together a more complete history for the shroud, linking it by means of shared blood-spatter patterns, shared blood type (AB) and shared pollen samples to the Sudarium of Oviedo, the cloth that supposedly covered Jesus' face before the body was taken from the cross, and which has a documented history dating back to earliest Christian times.

Other details about the shroud make the medieval forgery theory seem unlikely.

- The actual image, which lies on the very surface of the linen fibers at a depth less than 100 times as thick as a human hair, is the result not of paint or any sort of pigment, but of rapid dehydration — rapid, yet made without heat — of the natural cellulose present in the fibers.
- It shows the nail holes placed not in the palms but in the wrists, a position necessary to support the crucified man's full body weight — a fact not known to medieval artists.
- 24 to 28 flower images and matching pollen samples have been identified on the shroud, all from the vicinity of Jerusalem.
- The calcite gravel in the foot area is found in only two places in the world, one in a remote part of Africa and the other near the Sheep Gate that leads from Jerusalem to Golgatha, indicating that whoever lay in the shroud had recently walked either on the road to Calvary or in uninhabited Africa.
- Even the continued existence of the shroud points to its having an extraordinary origin. Most such wrappings from the period disappeared when left to deteriorate along with the body they contained. If the shroud is a "witness to the Resurrection," as it has been called, it wouldn't suffer from the usual problems.
- Finally, there is the shroud's distinctive weave and style, which experts have determined comes only from the Dead Sea area from a limited period of time spanning from approximately 40 B.C. to 70 A.D.

So, has science proven that the Shroud of Turin is, in fact, the shroud that covered the crucified body of Jesus of Nazareth? "That's not the purpose of science," said chemist Raymond Rogers at Los Alamos National Laboratory in New Mexico. "It can never prove that the shroud is genuine but so long as it remains unable to prove it a fake, there remains a finite probability that it is Jesus' shroud."

—Shafer Parker

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