

HAS SCIENCE JUDGED THE SHROUD OF TURIN TO BE A FAKE?

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A re-evaluation of the Shroud of Turin in the wake of the radiocarbon dating of the cloth in 1988. This three-and-a-half by fourteen foot linen cloth bears the mysterious images (head to head) of the front and back views of a crucified and badly beaten man, accurately bearing all the marks of the passion of Jesus of Nazareth.

No! Quite the contrary - the provisional judgment of Shroud science points in the opposite direction on all facets of the matter. But the scientific evaluation - similar to the historical evaluation - is quite complex, and in some areas unclear.

Yet, on October 13, 1988, Cardinal Anastasio Ballestrero, the archbishop of Turin, Italy, publicly announced that three laboratories that were using the latest radiocarbon measurement techniques - in Arizona, England, and Switzerland - had dated the Shroud cloth to the period, A.D. 1260 to 1390; thus, the mid-point would be A.D. 1325. So, has there been dishonesty or intentional improprieties on the part of the technical staffs involved in the recent radio-carbon (Carbon-14) testing of the cloth? Almost certainly not; there is no reason to impugn the integrity of anyone on the basis of present knowledge - not any of the three laboratories nor the British Museum, who monitored the exercise, should be faulted.

But it is important to note that a scientific procedure which was touted through the news media as "blind testing" turns out not to have been that at all: documentation now demonstrates first, that the laboratory scientists requested and were granted a viewing of the Shroud in connection with the sample-taking, and, second, that (along with their three cloth samples) each was given a certificate signed by the archbishop and the British Museum representative, Michael Tite, **stating** that the "control" samples were a "first century cloth" and an "eleventh century [cloth]"; thus, the laboratories clearly knew which sample was the Shroud (with its distinctive weave) and knew in advance the exact dates of the control samples; the control samples, incidentally, were also of distinctive weave, the earlier one being a typical, plain-weave, Egyptian mummy cloth, and the later one a textile from Qasr Ibrim in Lower Nubia.

Now, if the reported conclusion is wrong (of which I am fully satisfied, based on formal opinions of scientific experts in Shroud studies), and yet the technical staffs cannot be faulted, how do I explain this report that the Shroud is a fourteenth century cloth? - how could such a result have occurred? **One**, by the testing of contaminated samples; **Two**, by poor judgment in Turin, in that advice of the scientific experts was not followed; and **Three**, by news media failure to

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present a full picture of the situation. Are the Church authorities (who were involved) beyond reproach? From the standpoint of honesty and good intentions they probably cannot be faulted, but this is an area that must be seriously questioned.

The Shroud-dating fiasco we witnessed in the Fall of 1988 is cruelly hurtful to sincere religionists of all faiths and grossly misleading to the general public. As ultimately conducted, this so-called "scientific" exercise was a farce that was ill-conceived, and was flawed in execution, while utilizing a new and largely untested procedure. According to scientists and researchers closest to the Turin activity, it seems likely that Cardinal Ballestrero (archbishop of Turin) was the victim of bad advice. This operation likely tells us much more about weaknesses of a new and little-tested scientific technique, and about church politics, than it does about the Shroud and its images.

In 1978, more than thirty-five highly qualified scientists (mostly Americans) examined and tested and recorded data concerning the Shroud in an exhaustive exercise lasting 120 hours, and utilizing the eight tons of sophisticated equipment they had brought. Their more than forty multi-disciplinary and peer-reviewed reports disclose many new mysteries, but in no respect do they question a first century origin of the cloth and its mystical images - rather, those reports tend to support such a date. But it is useful to note the situation in Turin in 1978. Then, the Shroud was owned by the House of Savoy, whose titular head, the deposed Umberto II, living in exile in Portugal, believed fully in the integrity of the Shroud and was willing for science to delve for its provenance. Liaison with Umberto on behalf of the scientists was largely conducted by Shroud enthusiast Fr Peter Rinaldi, born and now living in Turin, but whose clerical assignments had been mostly in New York. Ballestrero represented Umberto in Shroud matters and at most gave pro-forma acquiescence in the ex-monarch's decision to co-operate with science, as in the best interest of the Church and the Shroud.

Today the climate seems different. Upon Umberto's death in 1983, his Will passed ownership of the Shroud to the Holy See. Ballestrero, ten years older and in very poor health, has not recently seemed an ardent supporter of Shroud research, if he ever was. Moreover, one cannot know what cautions and concerns may have reached him from the Vatican on behalf of the new owner of the Shroud. Also, he may be unhappy with the hype, hoopla and intense scrutiny of Shroud research that the news media has brought to this relic now put under his direct responsibility by the Vatican, and is consequently reluctant to become personally involved.

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In any event, Ballestrero appears to be relying exclusively on his science advisor, Professor Luigi Gonella of the Turin Polytechnic, who, almost single-handedly has managed every facet of the recent radiocarbon exercise. Although some sindonologists and Shroud scientists have expressed doubts about his qualifications, no one has suggested dishonesty or impropriety on Gonella's part. And again, we cannot know what informal suggestions may have been urged on him, especially from the Vatican; but, acting alone, he took the following unfortunate steps and has given no public explanation for them:

a. He ignored the protocol agreed upon by the world's experts on radiocarbon-dating, first at a Congress in Trondheim, Norway, in August 1985, and more specifically in September 1986 in Turin, which planned a multiple-dating project by seven laboratories using both the revised Libby technique of the 1940s and the more recent accelerator technique - and without consultation he selected the three laboratories who use only the accelerator method (which was just conceived in 1977 and has been in operation but a short time) - thus, forty-five years of experience with the older method was lost to this project.

b. He selected the cloth samples from only one location on the Shroud instead of three to five locations as recommended in the Turin protocol.

c. He selected a location on or adjacent to a "side panel" which is controversial and may in fact be an added strip, not a part of the original Shroud.

d. This location for cutting the sample was bordering on a scorched area and the 850-plus degrees centigrade heat in 1532 may have altered the Carbon-14 isotopes in that part of the cloth (it was molten silver that burned the Shroud). Incidentally, one researcher queried forty carbon-dating laboratories, world-wide, and learned that not one of them had ever dated pieces of cloth that once had been burned. Moreover, **if** this was Jesus' shroud, we must consider the effect of the Resurrection on the cloth. The S.T.U.R.P. scientists coined the term "flash photolysis" to describe the unknown image-making process. Accordingly, the "Science Correspondent" of the London *Sunday Times* on August 7, 1988, suggested that the burst of energy creating the image at the Resurrection arguably could have irradiated the cloth, making its Carbon-14 date younger than its true age. Dr Douglas Dean, professor of chemistry, agrees: "The 'flash' of Christ's Resurrection created the image, dematerialized his body, and also altered the proportion of C-14 to C-12." And finally, Bryan Kelly's letter to the *New Scientist* (British) of September 22, 1988, notes that in radiocarbon work "there is a fundamental assumption that the Carbon-14 got there by natural processes ...

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(but) if there was any extra carbon-14 present due to a Resurrection energy release, this would give the appearance that the Shroud was younger than it really is." And he goes on to postulate that "if energy release in the Resurrection process activated an extra eighteen percent of carbon-14 compared to that present naturally in the cloth, the Shroud, although being 2000 years old, would appear to be only 650 years old, and it is certainly possible to produce that amount of carbon-14 via a short burst of high energy." Radiocarbon laboratories admit that this explanation is theoretically possible, as does Prof. E. Lindner, author/scientist of Karlsruhe, West Germany.

e. More than half of the fabric sample taken from that location may have been made of rewoven threads used in repairing damage from the 1532 fire, according to some experts.

f. Gonella permitted no sindonologist or archaeologist to be present to consult or observe the sample taking.

g. When the medieval date was received from the three laboratories, he did not consult with the experts on the advisability of re-running the tests before a public announcement was made, or on the wording of the conclusions contained in the announcement.

In fairness to him, it seems obvious that Gonella, as a matter of conscience and religious commitment and without persuasion from any source, may have decided to take the smallest quantity of cloth possible from the least noticeable area, in order to save the sacred relic from significant harm. But it should be noted that radiocarbon experts estimated for full participation of all seven laboratories using both the older ("proportional-counting") technique and the new AMS method ("accelerated mass spectrometer") would have required an aggregate of cloth equal to no more than the size of three large postage stamps - while Gonella probably took about one-third to one-half that much; considering the size and number of patches and darns now on the Shroud, such a saving seems insignificant. In any event, we must recognize that the fiasco of October may set Shroud research back several decades, as well as souring public and Church attitudes toward the Shroud images to an incalculable degree. Gonella was present when the Turin protocol was agreed upon, yet gave no indication he would ignore it. Why did he leave the experts to assume he would follow the protocol?

What is radiocarbon-dating (known also as carbon-14 dating) and how reliable is it? By scientifically measuring the extent to which any organic material (be it wood, bone, or linen cloth) has lost the very weak natural radioactivity it had during its life, we carbon-date it, to give us - in the case of linen - the date at

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which the flax from which it was made, "died" - thus, the approximate year is determined in which the thread was spun from the flax and the linen cloth was woven from the thread.

So, let us go back to basics: carbon-dating is, at best, but one tool among many for dating an artifact; it is complicated and sensitive, but not infallible. An archaeologist will use it **only** along with every other technique and data available. Also, in using the new AMS technique they **must** have a pure sample, and so must overcome the bugaboo of contamination; consequently, sample-taking **in the field** is conducted under rigorous conditions, with sterile tools and containers, to avoid contamination. But, has the Shroud been contaminated? Repeatedly! - for centuries, and perhaps two millennia - by candle-smoke, wax, oils, fungi, insect debris, pollen, dust, soap, paints, molten silver, ointments, open wounds, saliva, sweat, direct sunshine, rain, etc., all as clearly recorded in the course of various ceremonies and activities. So, how can the AMS technique be used to carbon-date contaminated cloth? - it is accomplished chemically by a "purifying" process called pre-treatment. And does that always work? No! In preparing for the exercise of 1988, the British Museum conducted a "dry run" in 1986 with six laboratories using cloth of known age (known to the Museum); unfortunately, the Zurich AMS laboratory (one of the three involved in the final work of 1988) missed by some one thousand years - admittedly because of faulty pre-treatment - sometimes they throw out the baby with the bathwater, because the action of purifying the sample with chemicals may jeopardize the integrity of the total process. So, the C-14 results of 1988 may be speaking to an event or events in the life of the Shroud, rather than to its origin. The three laboratories may have come up with an "accurate" date, but of what? - not of the Shroud!

If carbon-dating is just one tool among many for dating the Shroud, what else can we look to? The many factors that historians and researchers have been pointing to for ten years or more; some of these point to first century and the area of the Holy Lands; some point to an early period in the Near East; some show the **impossibility** of a human artist, a natural causation, a west European creation, a fourteenth century creation:

1. The group of American scientists known as S.T.U.R.P. (Shroud of Turin Research Project) is unanimous in stating that: "Our conclusion that the image on the cloth is not the result of applied materials, but rather is due to an oxidation of the cellulose molecules that make up the flax, is still valid and correct." This means the image was not painted, and that an unknown event of oxidation selectively darkened certain surface fibrils of the threads so as to make a superficial image of a man with accurate details valid when magnified more than a thousand times.

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2. The image is a photographic negative, but photography was not invented until the 19th century; how could a brilliant 14th century artist have anticipated that technique? - and how could he have reversed the lights and darks in order to check the accuracy of his work?
3. The cloth-to-body distance correlates so precisely that the image encapsulates three-dimensional data perfectly and N.A.S.A. electronic equipment can convert it into a "relief-map" of the Man, and into a statue-in-the-round; no other image, drawing, painting or photograph has this quality - everything else distorts in 3-D.
4. Scalp punctures and blood rivulets from them, especially on the forehead, have both the characteristic **and** location proper for both venous and arterial blood-flow, and yet circulation of blood was undiscovered until 1593.
5. Blood rivulets down the forearms angled and dripped, tracing perfectly the true reaction to gravity of such flows, yet gravity was not discovered until 1666.
6. Most of the pollen on the Shroud came from the Near East, as did the Z-twist thread and three-to-one herring-bone twill weave; why would an artist of Europe go there to buy the cloth when none of his peers would know the difference?
7. Microscopes were invented 1590 to 1610, and yet scientists find meaningful data in the Shroud image by magnifications up to 1200 times; how could an artist of the 1300s make such detail?
8. The feet of the Man of the Shroud have smudges of actual dirt, and it is "travertine aragonite," a rare form of calcium which **matches** the spectral properties of this limestone substance found in caves near Jerusalem's Damascus Gate, and no other source in Palestine or elsewhere is known.
9. If this is a 14th century artist's production, regardless of how produced, what did the dozen or so **real** artists of the sixth to thirteenth centuries copy to make their faces of Jesus, which we now find by superimposition to be identical to the Shroud Face?
10. Dr Pierre Barbet wrote in 1950 that coagulation of blood was not at all understood by doctors in the 14th century, much less by artists - yet it is perfectly depicted on the Shroud, as is blood separation at death.
11. Even today, all Bible versions tell us Jesus was nailed in the "hands" - but the Shroud image shows us a medical truth: it was the wrist; an optional translation, though erroneous in this case, is the explanation; Shroud scholars did not make this point until a 1598 writing in Bologna. So, how could a medieval artist have anticipated it?

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12. A spike through the "space of Destot" in the wrist will lacerate the median nerve, causing the thumb to flex sharply into the palm; the Man of the Shroud has no thumbs, but how could that artist have anticipated such?

13. From A.D. 944, for some 350 years, several observers in Constantinople and Greece reported, with detail, a **full** image on the Shroud, as we know it today; five or six of them seem most certain.

14. There is no scientific explanation for the method and timing of the Man's early departure from his Shroud; the Turin Shroud bears no stains of putrefaction (as do thousands of other shrouds in the museums of the world - indicating that his departure was within three or four days of his burial); the Shroud was not lifted off him, because the bloodstains on the Shroud would have smeared if wet, and the crusted blood into the weave would have broken if dry; neither happened - it was as if the body dematerialized in place **without removal** of the Shroud.

15. And how resolve the visual anomaly? - the image is invisible to the viewer closer than six feet or farther than fifteen feet; how would a painter work on an image he couldn't see, unless his arms were more than six feet long?

16. Modern scientists are certain the images were made **through space**, even though there was indeed some contact of cloth with body - that it was made by an **image-making** process which some of them have named "Flash photolysis" - and that the images are not pressure sensitive in that the dorsal and frontal images have the same shading and lack of saturation characteristics.

And there are numerous other scientific enigmas the experts cannot explain, including, (17) real blood on the Shroud shielded the image-making process - hence, it was there first; (18) rigor mortis details prove death occurred **on** the cross; (19) he had been crowned by a cap, not a wreath, of thorns - correct for Orientals of Judea; (20) pollen grains from the Shroud are **not** covered with a collagen binder or pigment as would be true of a painted image; (21) the paradox of a criminal's death and a wealthy man's burial; (22) the real bloodstains are photographically positive, not negative as is the body image; (23) the natural drape of the cloth around the body has not varied or distorted the borders of the body image; (24) no residue of paint, stain, ink or dye is found - which must be present if there is an image made by an additive (such as paint); (25) no one, scientist, artist, researcher or critic, has been able to suggest a cause or technique by which such an image could be made, even today.

Should these "other factors" outweigh the C-14 dating results of 1988? Yes. Shroud historian/researcher Ian Wilson says:

"Any carbon-dating achieved cannot be, and should not be, the final arbiter on

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the issue. Whether seven or three laboratories happened uniformly to indicate a fourteenth century date, I would still want unequivocal independent evidence of the hand of an artist. Conversely, whether seven or three laboratories happened uniformly to indicate a first century date, I am sure those who believe the Shroud to be the work of a forger would justifiably want some more conclusive evidence of exactly how, if not by paint, the image might have been created."

So, why has this side of the matter not been told by the news media? It could have been. Promptly after the Turin announcement, press releases from senior Shroud research spokesmen attempted to put the radiocarbon results in perspective; these statements came from Rev. Albert R. Dreisbach, Jr., director of the Atlanta Shroud of Turin Center; Dr Alan D. Whanger, Duke University; Prof. William Meacham, Hong Kong University; and Paul C. Maloney, director of A.S.S.I.S.T. (Association of Scientists and Scholars International for the Shroud of Turin). But major news publications and broadcasters have not mentioned them; why not? Because if it's not negative, it's not news!

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