

COMMENTS ON THE C-14 CARBON DATING RESULTS ON THE SHROUD OF TURIN**by Dr Alan and Mrs Mary Whanger, Carolina, USA - September 29, 1988**

The results of the long awaited carbon dating of the Shroud of Turin have been released after a series of rumors ever since the specimens were removed from the Shroud in April, 1988. The reports indicate that the three carbon dating laboratories found a fourteenth century date for the cloth, and the media has generally interpreted this to mean that the Shroud is a fake or a fraud. We feel there is no adequate basis for such an interpretation, for many reasons having to do with difficulties associated with carbon dating itself and with abundant historical, literary, artistic, and image analytic data which we have found during the past eleven years of extensive study which sharply date the Shroud by both internal and external evidence to between 29 and 31 A.D. The Shroud image was used as the prototype or model for many of the depictions of Jesus dating from the second or third century onward, was well known by the third century from Rome to India, and was used as the model for almost all depictions of Jesus in every artistic medium from the sixth century onward. Many of the early icons and images are so meticulously detailed in their agreement with the Shroud image that they could only have been produced by highly skilled artists looking directly at the Shroud itself or at a very good quality and highly accurate copy of it.

We wish to comment on the discrepant C-14 findings.

William Meacham, an archaeologist with considerable experience with carbon dating procedures and with a thorough knowledge of the Shroud of Turin, in articles published in 1983 and in 1986 on the use of radiocarbon measurements for dating the Shroud of Turin, pointed up the problem of the unwarranted tendency of many scientists and laity alike to assume that the C-14 testing will give an absolute date that will settle once and for all the issue of the date of the Shroud. Almost all sources of contamination of any object tend to introduce carbon which is more modern than the original carbon absorbed from the environment into the object itself while it was still living or being formed. This makes the resulting C-14 date later than would be the case if only the original carbon were being tested. This is as true for the Shroud of Turin as for any other object, and, as Meacham asserts, the carbon dating of the Shroud is an extraordinarily complex issue and the inclusion of all relevant expertise is highly important.

Since the first century the Shroud of Turin has been repeatedly exposed to a wide variety of environments and contaminants, many of which have been documented but others of which are unknown. It was enclosed in a wall for nearly 500 years; it was mounted in a wooden frame; it has been wrapped in a variety of cloths; it has been repeatedly exposed as artists, iconographers, and die cutters had

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access to it as a model for their works; it was booty in several wars. Meacham reports that since being displayed in France in 1356, when more accurate records were begun to be kept, it has been contacted by oils, wax, soap, paints, ointments, open wounds, saliva, sweat and smoke. It is possible that preservatives, starch, and image-enhancers may have been applied. It has been used as an altar cloth with candles and incense around it. At some point it may have been pierced by a poker with burning pitch on it as a test of authenticity. In 1532, it was in a fire which melted the silver casket in which it was kept wrapped in velvet and silk. This fire produced the obvious burn and scorch damage which is now partially covered with patches. It has been estimated, as Meacham reports, that the temperature within the relic casket may have reached 800 degrees Centigrade, producing various smoke and pyrolysis products from the modern wrapping cloths, "cracking" the various hydrocarbon contaminants and allowing isotopic ion exchanges to take place. A backing cloth and patches were sewn to the Shroud after that time. The Shroud has been repeatedly rolled and unrolled, each time entrapping various contaminants and hydrocarbons in the highly porous and absorbent cellulose structure of the linen. Heller reports that it was not unusual for over 90% of people with access to the Shroud to touch it, kiss it, or touch some object to it.

Many artists have made copies of the Shroud and its image over the centuries. A number of these artists have then laid their completed work directly on the Shroud, face to face and end to end, thus making the work a "brandum" or a "true copy", meaning that it had been in physical contact with the original. It is little wonder that various pigment particles have been found on the Shroud, but they are not the basis of the image.

The Shroud has also been contaminated by exposure to the polluted atmosphere of the heavily industrialized city of Turin, the Detroit of Italy. There are dust, ashes, fuel oil debris, and even copy machine toner particles on the Shroud.

In 1978, Marano reported that under the scanning electron microscope the Shroud fibers has a "filthy" appearance caused by "abundant deposit of extraneous pollutant material intimately connected with the individual fibers of the cloth."

While the pre-testing cleansing procedures would get rid of a substantial amount of the various contaminants, there is no way to get rid of all of them, as cited by various authorities such as Goude, Stuckenrath, Zeuner, Burleigh (1974), and Nelson. Meacham states that the divergence of the C-14 age from the historically dateable context is clearly the best and perhaps the only method of evaluating the effects of contamination. Also, the Shroud of Turin is a unique object: there is no other cloth which has an image which resembles that of the Shroud, and it can

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safely be said that there is no other ancient cloth that has had the various exposures and vicissitudes that the Shroud has had.

There are basically four approaches to take to these divergent findings on the Shroud of Turin. The first would be to ignore them. The second would be to assume that the C-14 studies are correct and that the Shroud is of 14th century origin. This, however, presents certain difficulties. It would mean that there had to be a 14th century artist to produce the image on the Shroud. Since the style and technique are unlike any other known work, the artist most likely was unknown and this incredible image may have been his or her only work.

Consider some of the things this artist would have had to do. One observer indicated that he would have had to work with a brush at least six feet long but with only a single bristle, since the image is of such low contrast that it cannot be clearly discerned when one gets close to it, and yet it has fine detail down to a fraction of a millimeter and is anatomically perfect. He would have had to use an unknown medium which has no pigment detectable by a battery of hundreds of modern chemical and physical tests designed to discern any known pigment. He would have had to paint the entire image in the negative, which gives a very bizarre appearance, and his skill could only be appreciated by himself or others hundreds of years later when photography was finally developed. He would have had to know enough physiology to put the nail holes in the wrists rather than through the palms where all previous artists had put them. He would have had to use the unusual technique of painting with human blood and serum to depict the multiple blood and serum stains all of which are correct for pre- and post-mortem bleeding, and even to arrange these stains so that he showed correct blood clot retraction which would be at least 24 hours old. He would have had to paint in the negative over the right eye the image of a Pontius Pilate lepton coin which almost perfectly matches and hence is a die mate of a known lepton which has Caesar misspelled on it. There is only one known lepton of this die striking, and it was not found until 1977. He would have had to include the totally unique idea of placing a Jewish phylactery (prayer box or *tefillin*) on the forehead, of adding a detail of mockery and desecration by showing it ripped open, and of making it highly congruent with the only known intact ancient head phylactery which dates from the first century, but which was not found until in 1968 at Qumran, as cited by Yadin. As a final touch, he also would have had to sprinkle on his artistic production pollen from about thirty plants and flowers that grow in Jerusalem and the Judean desert and that bloom in March and April, and that have been identified by Dr Max Frei.

If one cannot accept the existence of this hypothetical medieval artist, then as a

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third option one might attempt to explain the presence of a first century image on a fourteenth century cloth by assuming that some type of miracle had taken place.

Or one might choose the fourth option, what seems to us the most reasonable and parsimonious answer to this dilemma, and assume that the carbon dating of the cloth is in error. The testing results may, and presumably do, reflect the mixture of ancient, medieval and modern carbon that is deposited presently on and in the Shroud. We feel, however, that the Shroud tests the carbon dating much more than the carbon dating tests the Shroud, and that the current carbon dating has failed to give the true date of the fabric of the Shroud.

This is hardly the first problem of this remarkable object which countless people from the first century onward have felt bears the image of Jesus of Nazareth. We would hope that these challenges would lead to further detailed scientific and scholarly studies on the Shroud to learn why we get a 14th century dating for it as well as to discern more of the many other mysteries of this cloth and the crucified man whose image is imprinted on it by a process still unknown but felt by many to have been a massive burst of some type of radiant energy.

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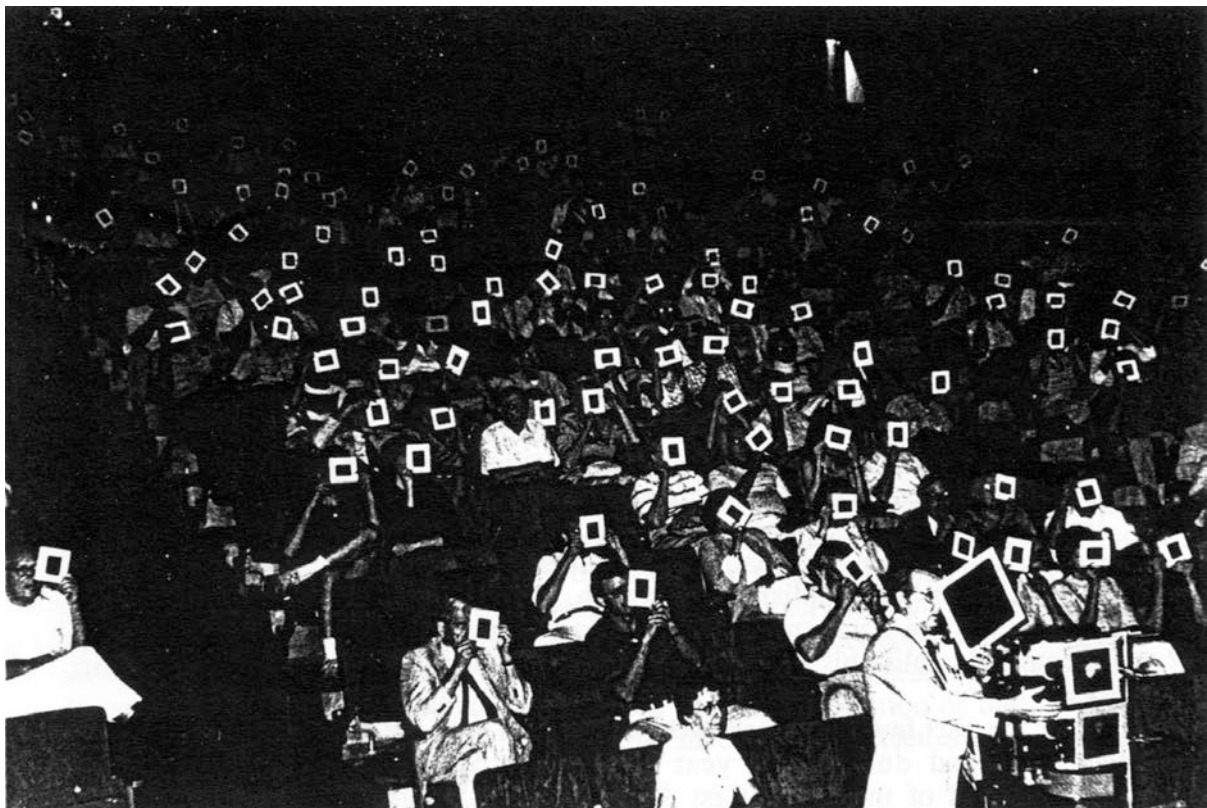
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Dr Alan Whanger demonstrates his polarized image overlay technique to a seminar audience at Duke University, Carolina