

A NEWSLETTER ABOUT THE HOLY SHROUD OF TURIN
edited by REX MORGAN, Author of several books on the Shroud
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Another (probably hitherto unpublished) icon clearly derived from the face on the Shroud. This is part of a fresco in a dilapidated Christian church (c 900 AD) on the island of Akdamar in the middle of Lake Van in far eastern Turkey. The later paintings of saints have been removed to expose the earlier portrait of Christ. [Photo: Mrs M. A. Rijven, Canberra]

EDITORIAL

Despite being asked to be the key international speaker at the Larchmont Shroud conference which was held in early March in New York, although my schedule precluded my attendance, I have yet to hear anything about what happened at it. There was an impressive list of international speakers advertised and no doubt a great deal of valuable interchange must have taken place. Perhaps I can bring you a report later in the year as I hope to be able to attend another Shroud conference in America in June. This is being organised by Bro Joe Marino at St Louis, Missouri and, all other things being equal (!), I should be there.

This issue includes an article written by one of the Shroud's major enemies, Joe Nickell. Nickell has consistently attacked the possibility of the Shroud's authenticity and has written a book and many papers on his views and work. He developed the idea of making a "rubbing" from a bas-relief to produce an image on cloth similar to that on the Shroud. Using iron oxide as the pigment presupposes that Walter McCrone is right when he claims to have found large quantities of iron oxide on the cloth which was therefore used as a painter's pigment. Numerous scientific tests have subsequently shown McCrone to be wrong, which Nickell always ignores, and the "rubbing" theory falls down on the basis of there being no pigment on the cloth, and numerous other technical details about the directionality and radiated nature of the image, quite apart from the impossibility of the Nickell technique producing accurate detail as in the Shroud image.

It is nevertheless important for anyone interested in the Shroud to read what people like Nickell and McCrone claim if for no other reason to read between the lines for the grossly biased handling of people and events and the anti-religious, humanist, agnostic, atheist approach of all the activities of the Skeptics Society.

After some fourteen years involvement with Shroud study I am still seeking the answers to the numerous mysteries and questions it poses. So if people like Nickell were in any way convincing I believe I would accept what they claim since I have no personal religious or any other reason for wishing the Shroud to be genuine. But, again and again and again one looks at all the other evidence, historical, scientific, iconographic, and one cannot escape the conclusion that the Shroud (or at least *a* shroud) is simply not medieval (so how do we explain the C14 experiment of 1988?). The Turin Shroud certainly does have inexplicable properties which make it a strong candidate for being what enormous numbers of people have believed it to be for two thousand years, namely the genuine burial shroud of Christ.

REX MORGAN

ENVIRONMENTAL INFLUENCES ON TEXTILE RADIOCARBON DATING

- REMI VAN HAELST

Archaeologists have already pointed out that textiles are very sensitive to the influence of climate and the composition of soil and humidity. In cases where a textile has been used for burial one has to take the burial practices into account. In the case of the Shroud one should consider the possible preparations following the custom of the Jews: washing, embalming, anointing, and powdering with sweet-scented aromatics, myrrh and aloes. The composition of the stone on which the body was laid out, the composition of the rock from which the tomb was hewn and the humidity in the tomb are major factors in the conservation but also in the degradation of a textile.

In the case of a textile used for burial it is clear that both the composition and decomposition of the body will also play an important part.

In some cases a petrification process has transformed textiles into "pseudomorph". This is a mineralised structure in which organised compounds of fibres have been replaced by inorganic material and have assumed the physical shapes of fibres, yarns and fabrics. The resulting products maintain the outer physical structure of the fibre as a result of polymer-chains and the maintenance of some structural integrity during their degradation. (K. A. Jakes and L. R. Sibley: *An Examination of the Phenomenon of Textile Fabric Pseudomorphism*, American Chemical Society, 1984, Univ of Georgia, USA).

Such a pseudomorph is no longer a textile product since no organic remains are present. During the study of this phenomenon Sibley and Jakes proposed micro-environmental conditions influencing the mineralisation. But by studying the physical evidence one can identify the original textile even with no organic matter present. Silk is not twisted into yarns for weaving, wool and cotton exhibit no molecular and fibre crimp and flax fibres vary greatly in numbers within the bundles.

The formation of such pseudomorphs proves that there is an interaction of the "dead" textile with its environment. In this case Sibley and Jakes studied objects found in graves of the Anyang-Shang dynasty. Some burial chambers had thoroughly disintegrated and were waterlogged. Natural surface water had a pH factor of 5.7 because of the dissolved carbonic acid. The pH will become lower in the presence of a decaying corpse. Acidic neutral waters are a better solvent for ions than neutral water. The dissolved ions move with the migrating water reacting oxygen or other ions which results in precipitation. The reaction is governed by the pH and oxidation-reduction potential of the environment in the

REMI VAN HAELST (cont'd)

function of temperature and humidity and finally the physical character of the products of chemical change.

Textile degradation depends in a variety of ways on the elements of the environment: temperature, humidity, pH and salinity. As degradation proceeds the fibre deteriorates into its components and other small molecules such as carbon dioxide, ammonia and water. The presence of metals (copper, bronze, iron) inhibits bacterial degradation. Alternating seasonal weather conditions are also of great influence.

The model proposed by Silbey and Jakes is a good example for possible contamination into the flax fibres of the Shroud. In this case copper ions dissolved in the corrosion solution migrate with the water into the textile structure (in this experiment, of silk). Copper ions WITHIN the fibre structure will react and the oxidation, hydration or carbonation products are deposited WITHIN the fibre structure and because of the organic molecular network they are restricted. Silbey and Jakes found other oxides and hydroxides which could only come from sources other than the copper. The reason for this contamination was the composition of the ground water and the soil in which the tomb was excavated. Here the soil was rich in aluminium oxide. Also they are only slightly soluble in acid solutions thus in time some must migrate in to the textile and PENETRATE into the textile fabric.

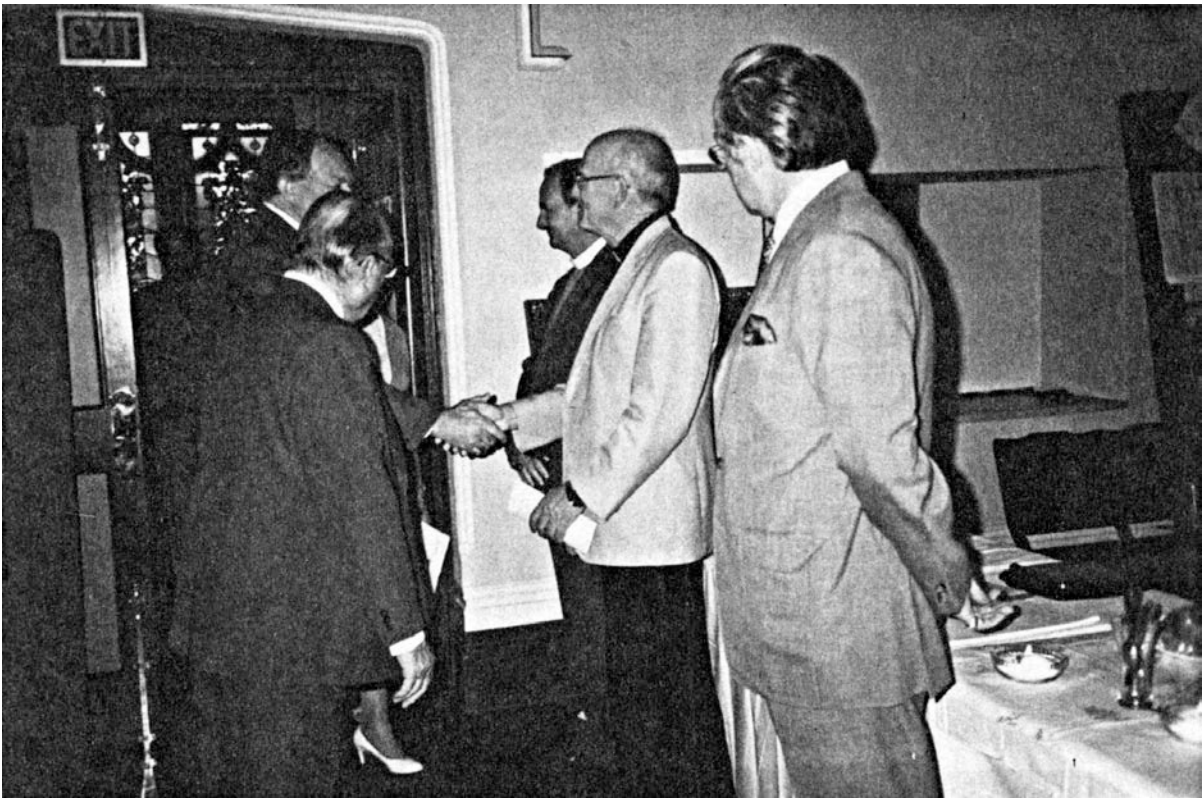
It is clear that such contamination WITHIN the fibres of a textile fabric will be very difficult to remove, even by ultrasonic cleaning, and may therefore be an obstacle for any radiocarbon dating method.



1984 Archbishop William Foley chats with Commonwealth Bank General Manager and Rex Morgan at the official opening of the Shroud Photographic Exhibition in Perth

DEATH OF CATHOLIC ARCHBISHOP OF PERTH

We read with regret of the sudden death at the age of 59 of the Most Revd William J. Foley, Catholic Archbishop of Perth, Western Australia, in March. Archbishop Foley took a great interest in and supported the Brooks Photographic Exhibition on the two occasions it was shown in Perth by Rex Morgan. He attended and performed the Official Opening in 1984 at the Commonwealth Bank Gallery and was a special guest at the return exhibition in 1987 in St George's Anglican Cathedral Hall which was opened by His Excellency the Governor of Western Australia. In discussion, Archbishop Foley revealed a considerable knowledge of the Shroud.



1987 Archbishop William Foley is presented to the Governor of Western Australia at the return visit of the Shroud Photographic Exhibition to Perth

MORE EVIDENCE FOR DOUBT ABOUT C14 SAMPLES

The continuing debate about whether the actual samples used for the C14 testing in 1988 were from a contaminated part of the cloth, or from the edge strip, or were even substitutes from another cloth fuels continuing discussion around the world.

In a recent paper, one of several, by Belgian researcher and author; Remi Van Haelst, he cites a letter written to him by Professor Wolfli who conducted the C14 readings in the Zurich laboratory, one of the three which carried out the work. *Shroud News* correspondent and researcher Kim Dreisbach, Director of the Atlanta Centre, has pointed out that this letter may be of very great significance.

The letter from Wolfli to Van Haelst dated 10 November 1988 confirms a rumour circulating earlier by stating:

"All samples were examined microscopically in order to detect and remove foreign material present ... no such material was discovered..., we even proved experimentally that none of our samples was contaminated."

Dreisbach points out that this observation is directly opposed to the results determined by the 1973 Turin Commission which examined the Shroud and especially samples examined by Belgian textile expert Professor Gilbert Raes. Even Hall at Oxford found a trace of "rogue cotton" on their sample. Is it not possible that this letter from Wolfli is strong proof that the Shroud sample examined by all three labs was not, indeed, from the main body of the linen burial cloth at all? Could it have been from a patch on the cloth or part of a re-weave done in the Middle Ages? Such a younger piece of cloth would have had less time to acquire the debris and pollutants observed and reported upon by all other studies of the Shroud. This also adds credence to the widely canvassed but as yet not wholly substantiated claims that an actual substitution of samples took place during the removal in April 1988.



COTTON ON THE OXFORD CARBON DATING SAMPLE

This report is taken directly from the *British Society for the Turin Shroud Newsletter* No 26

Apparently the British company Precision Processes (Textiles) Ltd of Ambergate, Derbyshire was asked by the Oxford laboratory to help identify certain 'foreign' fibres observed, isolated and extracted from the Shroud sample prior to its destruction during the carbon dating process. According to Precision Processes managing director, Peter South: "It was while the sample was undergoing tests at the radiocarbon acceleration unit in Oxford that Professor Edward Hall noticed two or three fibres which looked out of place. He mentioned this to his friend Sir James Spooner, chairman of Coats Viyella, to which our firm belongs. Consequently, after several telephone calls, the minute samples, which looked like human hair, were sent to us."

Magnified two hundred times by a Precision Processes microscope the fibres became immediately identified as cotton. This might have been explicable as merely from the cotton gloves worn by members of the STURP team in 1978, but for the subsequent information imparted by Peter South: "The cotton is a fine, dark yellow strand, possibly of Egyptian origin and quite old. Unfortunately it is impossible to say how it ended up on the Shroud, which is basically made from linen. It may have been used for repairs at some time in the past, or simply became bound in when the linen fabric was woven."

This is not the first time that cotton strands have been identified on a Shroud sample. The Belgian Professor Gilbert Raes observed the same on the sample he studied in 1973, and he deduced that this was a strong indication of Middle Eastern manufacture. Clearly it could be of great interest to learn more both of the age of this cotton, and of the exact reason for its presence on the Shroud.

ARTICLE BY THE DEPUTY LEADER OF THE ANTI-SHROUD LOBBY

STAGE MAGICIAN JOE NICKELL HAS COME IN FOR SOME HEAVY CRITICISM RECENTLY FOR HIS SEVERAL ARTICLES CLAIMING THE SHROUD IS A FAKE. THIS ONE IS TAKEN DIRECTLY FROM *The Skeptical Enquirer*, Spring 1989.

Unshrouding a Mystery: Science, Pseudoscience, and the Cloth of Turin

Shroud proponents appear to have started with the desired answer and worked backward. This led them to ignore or discount abundant evidence that the shroud was a medieval relief.

Joe Nickell

CLAIMS THAT the authenticity of the Shroud of Turin — imprinted with the image of an apparent crucified man and touted as the burial cloth of Jesus — have long been unraveling. But now, to all but entrenched cultists, the issue is settled: The flax from which the linen was made was harvested in about the middle of the fourteenth century, around the time an artist reportedly confessed he had "cunningly painted" the image.

The determination that the "shroud" dates from the Middle Ages rather than the time of Christ was officially reported on October 13, 1988, after three laboratories carbon dated samples of the cloth. Using accelerator mass spectrometry, labs at Oxford, Zurich, and the University of Arizona obtained dates in very close agreement: The age span was circa A.D. 1260-1390, and it was given added credibility by correct dates obtained from a variety of control swatches. (Hilts 1988; Suro 1988). (These were from the first century B.C. and the eleventh and fourteenth centuries A.D., respectively.)

The results brought full circle the scientific study of the alleged relic that began in 1898, when the shadowy image was first photographed. Discovery that it was a quasi-negative (its darks and lights approximately reversed) prompted attempts to explain the image-forming process. When experiments demonstrated this was not simple contact (there would have been severe wraparound distortion) or "vaporography" (the postulated vapors could have produced only a blur), authenticity advocates were reduced to formulating increasingly bizarre "theories." Of course they tried to make these sound as "scientific" as possible.

One Los Alamos scientist opined the image was caused by "flash photolysis" — i.e., a burst of radiant energy, such as that Christ's body might have yielded at the moment of resurrection. A shroud enthusiast writing in William Buckley's *National Review* suggested the image was created by thermonuclear reactions and was analogous to laser-produced holograms. And a nun and a Utah chemist concocted a hot-corpse theory: that crucifixion-intensified body heat combined with the alkalinity of a limestone tomb to produce the image through a "mercerization process" (Nickell 1987: 87, 93, 152).

If they could explain the shroud image only by such pseudoscientific nonsense, shroudologists — e.g., those from the Shroud of Turin Research Project (STURP) — nevertheless insisted it could not have been the work of an artist, medieval or otherwise. It is instructive now to recall some of their arguments and sentiments.

Medical Evidence. In 1978, STURP pathologist Robert Bucklin asserted: "If I were asked in a court of law to stake my professional reputation on the validity of the Shroud of Turin, I would answer very positively and firmly that it's the burial cloth of Christ — and that it is Jesus whose figure appears on the Shroud" (Goldblatt 1982). Bucklin and other pro-shroud pathologists argued that the image contained details so anatomically correct as to have been beyond the ability of a medieval artist to portray. Yet a footprint on the cloth is inconsistent with the position of the leg to which it is attached, the hair falls as for a standing rather than a recumbent figure, and the physique is so unnaturally elongated (similar to figures in Gothic art!) that one pro-shroud pathologist concluded Jesus must have suffered , from Marfan's syndrome.

Blood. Although the "blood" stains on the shroud failed a battery of tests conducted in 1973 by internationally known forensic serologists, and although the distinguished microanalyst Walter McCrone determined the stains were actually tempera paint containing red ocher and vermilion pigments, two STURP scientists, John Heller and Alan Adler, claimed they had "identified the presence of blood." However, at the 1983 conference of the prestigious International Association for Identification, forensic analyst John F. Fischer explained how results similar to theirs could be obtained with tempera paint, and he demonstrated why spectral data were inconsistent with the STURP scientists' claims. As it happens, neither Heller nor Adler is a forensic serologist or a pigment expert, prompting one to question just why they were chosen for such important work. Heller admitted that McCrone "had over two decades of experience with this kind of problem and a worldwide reputation. Adler and I, on the other hand, had never before tackled anything remotely like an artistic forgery" (Heller 1983; 168).

Beyond the questions of chemistry were other problems pertaining to the supposed blood: It had failed to mat the hair and instead flowed in rivulets on the outside of the locks; it appeared on the cloth in "picturelike" fashion and included the ostensible transfer of *dried* blood; and it remained red, unlike genuine blood, which blackens with age.

"3-D" Properties. Another pair of STURP scientists, John Jackson and Eric Jumper, applied an image-analyzer "test" to the 'shroud image — an analysis of their own devising, involving the use of an instrument actually designed for analyzing photos of planets. They claimed the shroud image had unique three-dimensional properties that "ordinary" photographs and paintings lacked. In fact, however, the shroud image's 3-D profile — as revealed by a microdensitometer plotting of its lights and darks from a photo-transparency — is grotesque, and it was only by employing a series of questionable "corrective" factors that they obtained their visually pleasing results. Moreover, whereas the shroud image is six centuries old, is apparently much faded, and may once have been washed — thus yielding softened edges favorable to 3-D reconstruction — the images used for comparison were contrastingly new. Not surprisingly, when experts at a textile laboratory artificially aged and washed an artist's simulated shroud image (as demonstrated on a skeptical program on the shroud aired on the Discovery channel on July 31, 1987) 3-D results were obtained that were reportedly comparable to those STURP had derived from the shroud image.

Other Factors. Among additional elements that were supposed to help "authenticate" the shroud were alleged imprints of Roman coins in the region of the eyes, and the reported presence of Palestinian pollens on the fabric. Alas, only predisposed viewers could see the former, and claims for the latter were challenged by a Smithsonian botanist. (The retired criminologist who "identified" the pollens suffered a blow to his credibility just before his death in 1983: He had represented himself as a handwriting expert and pronounced the "Hitler diaries" genuine.)

Apart from specific methodological criticisms and the question of competence, the essential difference between authenticity advocates and skeptical investigators seemed to be one of basic orientation to evidence. Skeptics allowed the preponderance of *prima-facie* evidence — the shroud's lack of historical record before the mid-fourteenth century, the reported forger's confession, the similarities to Gothic art, the presence of pigments, and additional clues — to lead them to a conclusion: The shroud is the handiwork of a medieval artisan. Not only do the various pieces of the puzzle interlock and corroborate one another (for example, the confession is supported by the lack of prior record, and the red "blood" and presence of pigments are consistent with artistry), but a simple artistic rubbing technique is demonstrably capable of producing shroudlike images (Nickell 1987: 101ff.).

In sharp contrast was the approach of shroudologists who appeared to start with the desired answer and work backward to the evidence. Lacking any viable hypothesis for the image information, they offered one explanation for the lack of provenance (the cloth might have been hidden away), another for confession (the reporting bishop could have been mistaken), still another for the pigments (an artist copying the shroud could have splashed some on), and so forth (Wilson 1979: 136; Stevenson and Habermas 1981: 104; Heller 1983: 212).

Evidence for their bias had long been apparent. Months before they conducted any tests on the cloth, scientists from STURP were making rash statements. One said: "I am forced to conclude that the image was formed by a burst of radiant energy — light, if you will. I think there is no question about that." Another asserted, "I personally believe it is the shroud of Christ, and I believe this is supported by the scientific evidence so far." And an Episcopal priest who described his work at a government lab by boasting, "I make bombs," said of the shroud's authenticity: "I believe it through the eyes of faith, and as a scientist I have seen evidence that it could be his [Christ's] shroud" (Nickell 1987: 115).

A further example came from Air Force scientist Eric Jumper, who was a leader of STURP and a member of the Executive Council of the pro-authenticity Holy Shroud Guild. After only a preliminary examination of the "relic" had been made in 1978, Jumper asserted: "There's no doubt about it — it's a grave cloth!" Soon, archconservative Phyllis Schley (1979) pronounced: "At long last we have the proof demanded by the doubting Thomases. This proof is the Shroud in which the body of Jesus was wrapped."

Given such attitudes, it is not surprising that shroud devotees now challenge the implications of the carbon-14 dating tests. While some apparently do not question the medieval date, they agree with the Archbishop of Turin that the imaged cloth is a mysterious icon still suitable for veneration and able to work miracles (Suro 1988). Many other shroudologists — particularly those in leadership positions — are refusing to accept the scientific findings, which would be tantamount to admitting they had misled their credulous troops for, lo, these many years. As an Episcopal priest who operates a shroud center in Atlanta huffed: "Before it's over, it will be the accuracy of the carbon-14 tests [that are] in question, not authenticity of the shroud" (Hilts 1988).

Many are already calling for new tests. And it seems likely, if we can judge from past history, that they will want them conducted by loyal shroudologists — perhaps by a pious team of ophthalmologists who adopted radiocarbon dating as a hobby.

Still others are taking a simpler tack, suggesting that the hypothesized burst of radiant energy at the moment of resurrection (or, alternatively, the fire of 1532) changed the carbon ratio. With such a "theory" and a few appropriate calculations, shroud "science" should be able to "correct" the medieval date to a first-century one. Stay tuned.

References

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Heller, John. 1983. *Report on the Shroud of Turin*. New York: Houghton Mifflin.
Hilts, Philip J. 1988. It's 14th-century, say the labs. *Washington Post National Weekly Edition*, October 3-9.
Nickell, Joe. 1987. *Inquest on the Shroud of Turin*, updated edition. Buffalo: Prometheus Books. Except as otherwise noted, information for this article is taken from this text.

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- Stevenson, Kenneth E., and Gary R. Habermas. *Verdict on the Shroud*. 1981. Ann Arbor, Mich.: Servant Books.
- Suro, Roberto (New York Times News Service). 1988. Church says Turin shroud not from Christ's burial. *Lexington Herald-Leader* (Lexington, Ky.), October 13.
- Wilson, Ian. 1979, *The Shroud of Turin*, revised edition. Garden City, N.Y.: Image Books.

Examples of Nickell's bas-relief rubbing technique need to be critically compared with the perfection of the Shroud image and the fact that there is no pigment on the Shroud

Plate 8. Negative photograph of a rubbing image done by the author using iron oxide as the pigment. Iron oxide has been identified on the shroud image fibers.

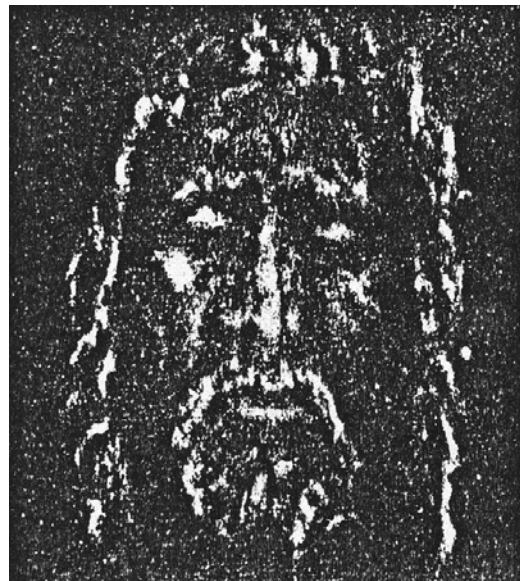


Plate 9. Negative photograph of another rubbing image. In this instance the iron-oxide pigment was made by calcining green vitriol according to a twelfth-century recipe. The "blood" trickles were added with tempera paint

THE PATHOLOGIST AND THE SHROUD

Professor J. Malcolm Cameron is one of Britain's foremost forensic scientists. He has solved numerous murder cases and has also studied many medico-legal incidents in the Bible and put forward causes of death and identification of the victims. This and a good deal of other information about Cameron is revealed in Tom Tullett's book *Clues to Murder* (Bodley Head, 1986). He was asked to study the Turin Shroud and form an opinion about it.

The following paper was written for the book *Face to Face with the Turin Shroud* (Mayhew-McCrimmon, 1978, Ed Peter Jennings) and was also included in Tullett's book as its last chapter.

The Pathologist and the Shroud

The Gospel record nowhere implies that the shroud in which Jesus Christ was wrapped after his crucifixion revealed an image of his body, let alone his numerous wounds. The task of reconstructing the chain of events that link the Turin Shroud to Calvary is by no means easy. The Gospels recall how Christ was scourged, crowned with thorns, forced to walk perhaps some six hundred yards bearing the cross-beam of the cross, during which time he may have had numerous falls to the ground. Thereafter he was subsequently nailed to the cross and later his side was pierced with a lance by a Roman sentinel.

I have been asked to comment on the image as a pathologist. Colour photographs of the Shroud indicate the body to be a sepia with a touch of yellow ochre hue, which appears so faintly

THE PATHOLOGIST AND THE SHROUD (cont'd)

when viewed that it can only be visible to the naked eye in certain conditions. The darker brownish marks in the body represent trickles of blood and/or serum issuing from the wounds. The outline of the figure stands out well in the black and white photographs taken by Giuseppe Enrie in 1931. The cloth itself portrays a naked male corpse with hands crossed, and around the chin, supporting the lower jaw, is a sudarium— a napkin or handkerchief which passes across the beard and behind the hair. The position of the body as depicted on the Shroud is consistent with that of a crucified body in a state of post-mortem rigor (that is, muscle-stiffening after death whilst still on the cross), which would naturally set it in the position into which the body would slip after death.

I agree entirely with my colleague, Dr Derek Barrowcliff, Home Office Pathologist and Medico-Legal Expert from Warwickshire, when he states that bodies do bleed after death for a period of time, but the Shroud does not show any smudging of the rivulets from the marks of the scourging, nor from the abrasions, particularly on the left knee. Blood, however, that has flowed during life and clotted on the skin may somehow have been transferred to the cloth. It is not unknown for clots to undergo what is known as fibrinolysis as a result of enzymatic or bacterial action and they could possibly be absorbed by linen; that is to say the blood would break down into numerous components and would be extremely difficult to differentiate.

The multiple puncture marks with attendant rivulets of blood over the scalp, extending from the centre of the forehead towards the front round to the level of the ears at the back of the head, would suggest a clump of thorny twigs being pressed down upon the head, rather than a circlet, which artists frequently symbolize as a 'crown of thorns'.

The image of the face is indicative of one who has suffered death by crucifixion and is not alive, for the linen cloth would act like a plastic membrane and would be sucked into the mouth and nostrils were the victim alive, as happens in tragic cases when a plastic bag is placed over the head of a child or adult resulting in death.

Reviewing the face, one can see several swellings and bruises

THE PATHOLOGIST AND THE SHROUD (cont'd)

over the facial areas, particularly the left cheek and forehead, under the right eye and across the nose, which could well be broken. The lower lip also gives the impression of having been swollen, injuries consistent with the face having come into contact with firm or hard surfaces during life; that is to say, with the victim either being struck in the face or falling on the face whilst carrying the beam of a cross. The eyes appear to be closed and sunken, suggestive that eye changes after death had occurred. There is no indication to suggest that any metallic coin or object had been placed over the eyes to keep them closed. The arms are bent and across the lower abdomen; this would, in my opinion, have been done forcibly in order to break the rigor or muscle stiffening of the shoulder-girdle — a not unusual problem when dealing with death from any cause, in order to get the body into a straight position. The track of the blood rivulets from the nail-marks of the wrists indicate fluctuation in the degree of sagging of the body on the cross during life. This varied from 55 to 65 degrees approximately.

Anatomical experiments carried out in 1940 stated that, in order to support the victim in crucifixion, the nails would need to have been driven into the wrists (carpal bones) and not the palms of the hands (between the meta-carpal bones) as has been depicted by artists throughout the ages. This mode of positioning of the nails in the wrists could damage the median nerve, causing the thumb to bend over the palm for, as can be seen from the image depicted on the Shroud, the thumbs are not seen. The image of the hands suggests the fingers to be somewhat shrivelled, indicative, in my opinion, of either deprivation of blood or post-mortem change.

The lance entering the chest cavity on the right side of the body in the fifth interspace, that is to say between the fifth and sixth ribs in an upward, inward direction, would penetrate the right lung, causing it to collapse, with resulting pneumothorax (i.e. air under pressure in the chest cavity) and subsequent bleeding from the lungs into the chest cavity, and further penetration for some eight to nine inches (i.e. the length of the blade of a Roman lance) could well penetrate the principal chamber on the right side of the heart. Such a wound is frequently seen in domestic murder in the present day, resulting

THE PATHOLOGIST AND THE SHROUD (cont'd)

in almost immediate death resulting from bleeding into the chest cavity: A spear wound is visible in the Shroud itself just to the left of a triangular patch sewn on by the Poor Clares after the fire at Chambery in 1532.

Examination of the upper back of the trunk reveals deep bruising of the shoulder blades, indicating the angle at which the cross beam of the Cross might have been carried, but within this bruising there are marks of scourging. I agree entirely with Dr Bucklin's view that the scourge marks on the body would be consistent with a flagrum. Had the victim been a Roman citizen, he would have been beaten with rods, not whipped with the flagrum, and, secondly, the inflictors of this punishment were not of the Jewish faith as their law forbade more than forty lashes.

I am also in total agreement with the views expressed by Dr Robert Bucklin and Dr Barbet that the nail fixing the feet passed between the metatarsal bones, that is to say the long bones of the foot, and not through the heel bone.

The image on the Shroud indicates to me that its owner —whoever he may have been— died on the cross, and was in a state of rigor when placed in it. Even after the most extensive scientific and forensic tests, it is my belief that we shall only be able to prove the fact that the Turin Shroud *might* be the burial cloth of Jesus Christ, not that it actually *is*.

THE OXFORD ILLUSTRATED HISTORY OF CHRISTIANITY

It is claimed that this new publication is not very good. One reviewer has said, "Snide remarks about popes and unsubstantiated and misleading statements are not uncommon."

The book, under the editorship of one John McManners is also pleased to say of the Shroud, "The Turin Shroud was tested scientifically [sic] in 1988 and proved [sic] to be not genuine."

Oxford ?? Does not the name Oxford have a familiar ring about it in recent Shroud history. No wonder, then, that such an entry should appear in something emanating from Oxford but rather surprising that it should be in a scholarly work from so prestigious a Press. But then Dr Tite and Professor Hall are also regarded as prestigious.

A BRIEF BIBLIOGRAPHY OF SOME BOOKS RECENTLY ACQUIRED. THIS MAY BE HELPFUL TO SERIOUS SHROUD STUDENTS. In each case I have given (as available) author, title, publisher, date, ISBN, and a brief comment. The last such list was in Shroud News 54, August 1989.

By REX MORGAN

Thomas, Mgr Jean-Charles, *Le Linceul de Turin*, Collection du Laurier, Paris, 1988, Soft cover 48 pp.

Brief summary of history of Shroud and commentary.

De Gail, Paul, *Histoire Religieuse du Linceul du Christ: De Jerusalem a Turin*, Editions France-Empire, Paris, 1974, soft cover 384 pp.

A few photos and diagrams. Heavily footnoted. Index of proper names. Mainly medieval period historical. Long out of print and I was very surprised to find it on sale.

Wilson, Ian, *Le Suaire de Turin*, Albin Michel, Paris, 1984, soft cover 350 pp.

A good quality paperback. The French translation of Wilson's best-seller.

Walter, Jean-Jacques, *Le Visage du Christ*, OEIL, Paris, 1986, soft cover 120 pp.

General overview of subject with some pictures

Thomas, Jean-Charles, Bishop of Versailles, *C'est le Seigneur*, OEIL, Paris, 3rd Edition 1988 (1st 1985), soft cover 130 pp.

Broad overview. Interesting chapter on Giv'at Ha Mivtar.

Reban, John, *Inquest on Jesus Christ*, translated from German by Willi Frischauer, Leslie Frewen, London, 1967, Hard cover 209 pp.

Author described in blurb as "world's foremost authority on the Holy Shroud". Reban has written under a number of aliases. Book presses his special and controversial point of view.

---, *La Sindone Certezze Scientifiche*, Biblioteca Maria SS della Catena, Laurignano, undated (but 1989), soft cover 92 pp.

4 photographic plates of mediocre quality. Contains six papers of general interest by Nereo Massini, Elena Constantini, Emanuela Marinelli, Valerio Pietri, Angelo Del Vecchio, Luigi Malantrucco.

RECENT BIBLIOGRAPHY (cont'd)

Upinsky, Arnaud-Aaron, *La Science a l'Epreuve du Linceul - La Crise Epistemologique*, OEIL, Paris, 1990, soft cover 244 pp.

Many diagrams and tables. This outstanding paper was delivered in part at the Paris Symposium in September 1989. Some subsequent additional material. A very significant contribution to Shroud study.

Marinelli, Emanuela and Petrosillo, Orazio, *La Sindone: Un Enigma all Prova Della Scienza*, Rizzoli, Milan, Italy, 1990, ISBN 88 17 84039 4, hard cover 270 pp

16 pp of colour plates. Brief background to subject then thorough exposition of C14 dating experiment and its failings. A very significant book.

Wijffels, Frans J. M., *Medical Aspects of Roman Crucifixion*, private publication by author, Maastricht, Netherlands, 1988, soft cover A4 format 18 pp.

The translation from Flemish. A paper on medical aspects of crucifixion then showing that all are indicated on the Shroud.

Ricci, Giulio, *L'Uomo della Sindone e Gesu: Diamo le Prove*, Edizioni Carroccio, Vigodarzere, Italy, 1989, soft cover 98 pp.

Another very well produced book in the long line from the Ricci stable. Numerous colour photos and updated information with the familiar Ricci drawings and research.

Piczek, Isabel, *The Nature of the Image-Making Process of the Turin Shroud: A New Suggestion*, The Author, Los Angeles, 1989, Soft cover A4 format 6 pp.

A paper on Piczek's time reversal theory.

Piczek, Isabel, *Why the Shroud of Turin Could Not Have Been the Work of a "Clever Artist"*, The Author, Los Angeles, 1989, soft cover 56 pp.

Observations on iconographic theory of authenticity. Many black and white illustrations.

Piczek, Isabel, *The Divine Blueprint*, The Author, Los Angeles, 1990, soft cover 80 pp.

Diagrams, index and colour plate of author's mural. Theory based on several physical and chemical principles of image production.

RECENT BIBLIOGRAPHY (cont'd)

Bulst, Werner, *Betrug am Turiher Grabtuch: Der Manipulierte Carbondatentest*, Josef Knecht, Frankfurt, Germany, 1990, ISBN 3 7820 0609 7, soft cover 64 pp.

High quality production. Many black and white photos and diagrams, lift-out photograph of Shroud. Expose of alleged manipulation of C14 experiment of 1988.

Nickell, Joe, *Inquest on the Shroud of Turin*, Prometheus Books, New York, 1987 (1st ed 1983), ISBN 0 87975 396 X, soft cover 190 pp.

A updated version of Nickell's earlier book setting out to negate almost all known information about the Shroud from the skeptical-rationalist viewpoint.

Bowman, Sheridan, *Interpreting the Past: Radiocarbon Dating*, British Museum, London, 1990, ISBN 0 7141 2047 2, soft cover 64 pp.

Well produced, many black and white photos and diagrams. References to Shroud.

Craig, William Lane, *Assessing the New Testament Evidence for the Historicity of the Resurrection of Jesus*, (Studies in the Bible and Early Christianity, Vol 16), Edwin Mellen Press, Lewiston, New York, 1989, ISBN 0 88946 616 5 Hard cover 442 pp.

Heavily footnoted learned book. Looks like a doctoral thesis reproduced from typewritten script and fearfully expensive. Has Shroud references.

Muller, Willi K., *Festliche Begegnungen: Die Freunde des Turiner Grabtuches in Zwei Jahrtausenden*, Peter Lang, Frankfurt, 1989, ISBN 3 631 40711 4, 2 Vols Soft cover 844 pp.

An extraordinary compendium containing a comprehensive history of the Shroud, several maps and 150 pages of excellent photographs, all in Vol I. Vol II consists of an encyclopaedic compilation of items and names, several genealogical tables, and a listing of nearly 1,000 books, and articles. (It is reminiscent of O'Rahilly's remarkable tome in English, *The Crucified*.)

Shroud News began in 1980 when Rex Morgan, author of three books on the subject of the Holy Shroud (*Perpetual Miracle*, *Shroud Guide*, and *The Holy Shroud and the Earliest Paintings of Christ*) started putting together a few notes about current developments in Sindonology (the study of the Shroud of Turin) for a small circle of interested people in his home country of Australia. He didn't expect it to go beyond a few issues.

The bulletin now reaches subscribers all over the world and it is written and produced and the information disseminated more quickly than most news-sheets of a similar kind or the more prestigious Shroud publications. It contains information, news, articles and illustrations gathered from sources of Shroud study worldwide through Rex Morgan's extensive network of personal connections with what has been described as the "Shroud Crowd".

Rex Morgan is a frequent traveller overseas and this has given him the opportunity to keep abreast of latest developments in Shroud study and research at first hand. He was present at the world media preview of the Shroud itself in August 1978 in Turin, Italy and has met with numerous Shroud researchers in many countries. His quest for Shroud information became, as he described it, "a passionate hobby". He brought the world-famous Photographic Exhibition created by Brooks Institute, California, to Australia, New Zealand, Hong Kong, Macau and Canada and during those tours it attracted more than 600,000 visitors. The exhibition was subsequently donated by Brooks Institute to the non-profit making organisation, The South East Asia Research Centre for the Holy Shroud (SEARCH) of which Morgan is President. He is also a member of the Board of Directors of the USA based Association of Scientists and Scholars International for the Shroud of Turin (ASSIST) and was a member of the scientific team which conducted environmental experiments in a Jerusalem tomb in 1986 (The Environmental Study of the Shroud in Jerusalem). He has made several original contributions to the research of the Shroud, has presented papers at international conferences, has written many articles and given numerous broadcasts and telecasts on the subject in many countries.

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